

Geologic Cross Section /—/' Through the Appalachian Basin from the Eastern Margin of the Illinois Basin, Jefferson County, Kentucky, to the Valley and Ridge Province, Scott County, Virginia

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Pamphlet B to accompany

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Contents

Pamphlet A

Introduction.....	1
Construction of the Cross Section	1
Structural Framework	3
Basement Rocks and Associated Structures	3
Thin-Skinned Structures.....	7
Stratigraphic Framework.....	8
Mesoproterozoic to Neoproterozoic(?) Siliciclastic Strata	9
Lower Cambrian to Upper Ordovician Siliciclastic and Carbonate Strata.....	10
Upper Ordovician to Lower Silurian Siliciclastic Strata.....	17
Lower Silurian to Middle Devonian Carbonate and Evaporitic Strata	18
Middle Devonian to Middle Mississippian Siliciclastic Strata	20
Middle and Upper Mississippian Carbonate Strata.....	22
Upper Mississippian and Pennsylvanian Siliciclastic Strata	23
Acknowledgments	26
References Cited.....	26

Pamphlet B

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section <i>I–I'</i>	1
Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section <i>I–I'</i>	49
Appendix 3. Scale, Units, and Depths for Gamma-Ray Logging Runs.....	99

Figures

[On map sheets]

- 1. Map of Kentucky, Virginia, and adjoining States showing location of cross section I—I' and selected tectonic features.
- 2. Correlation chart of Paleozoic rocks along cross section I—I' in Kentucky and Virginia.
- 3. Diagram showing major footwall ramps (thrust faults) and zones of bedding-plane detachment in the eastern part of cross section I—I'.

Table

[In pamphlet A]

- 1. Drill holes used in cross section I—I'4

Conversion Factors

Multiply	By	To obtain
	Length	
foot (ft)	0.3048	meter (m)
meter (m)	3.281	foot (ft)
mile (mi)	1.609	kilometer (km)
kilometer (km)	0.6214	mile (mi)

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section I–I'

Blank cells indicate no formation was encountered in the drill hole.

2 Pamphlet B—Geologic Cross Section I–I' Through the Appalachian Basin

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section I–I'.

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	1	2	3	4	5
American Petroleum Institute well number	16–111–24576	16–211–09113	16–005–00000	16–239–21801	16–049–10287
Lease name	No. 1 Dupont Plant Disposal	No. 1 C.J. Morris	No. 1 Ben Bond	No. 1 Dudley Gaines	No. 1 Paul Adams and Clarence Long
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	452	763	760	852	930
Kelly bushing elevation (ft)	462	763	760	859	931
Measured from	KB (10 ft APD)	GL	GL	KB (7 ft APD)	KB (1 ft APD)
Drill depth (ft)	6,011	2,075	2,838	2,812	1,563
KB elevation - GL elevation (ft)	10	0	0	7	1
Formation 1	Alluvium	Maquoketa Shale	Lexington Limestone	Lexington Limestone	Lexington Limestone
System or series	Quaternary	Upper Ordovician	Upper Ordovician	Upper Ordovician	Upper Ordovician
Formation top (relative to KB) (ft)	-10	0	0	-7	-1
Formation top (relative to GL) (ft)	0	0	0	0	0
Formation top (relative to SL) (ft)	452	753	760	852	930
Formation 2	New Albany Shale	Lexington Limestone	High Bridge Group	Dickeyville Bentonite Bed	Dickeyville Bentonite Bed
System or series	Upper Devonian	Upper Ordovician	Upper Ordovician	Upper Ordovician	Upper Ordovician
Formation top (relative to KB) (ft)	-125	-324	-190	-122	-105
Formation top (relative to GL) (ft)	-115	-324	-190	-115	-104
Formation top (relative to SL) (ft)	337	439	570	737	826
Formation 3	Sellersburg and Jeffersonville Limestones (undifferentiated)	High Bridge Group	Millbrig Bentonite Bed	“Elkport” Bentonite Bed	“Elkport” Bentonite Bed
System or series	Middle Devonian	Upper Ordovician	Upper Ordovician	Upper Ordovician	Upper Ordovician
Formation top (relative to KB) (ft)	-162	-478	-222	-142	-128
Formation top (relative to GL) (ft)	-152	-478	-222	-135	-127
Formation top (relative to SL) (ft)	300	285	538	717	803
Formation 4	Brownsport Formation and Dixon Formation	Millbrig Bentonite Bed	Deicke Bentonite Bed	High Bridge Group (Tyrone Limestone) and Millbrig Bentonite Bed	High Bridge Group (Tyrone Limestone) and Millbrig Bentonite Bed
System or series	upper Silurian	Upper Ordovician	Upper Ordovician	Upper Ordovician	Upper Ordovician
Formation top (relative to KB) (ft)	-218	-492	-238	-177	-155
Formation top (relative to GL) (ft)	-208	-492	-238	-170	-154
Formation top (relative to SL) (ft)	244	271	522	682	776

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section /–/.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	6	7	8	9	10
American Petroleum Institute well number	16–049–18142	16–173–11507	16–165–29846	16–175–28019	16–237–30520
Lease name	No. 1 M.W. Miller	No. 16–1 Alvery Potter	No. 1 Campbell	No. 1 C.K. Stacy Heirs	No. 1 Orville Banks
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	940	977	1,118	805	1,028
Kelly bushing elevation (ft)	949	989	1,128	817	1,057
Measured from	KB (9 ft APD)	KB (12 ft APD)	KB (10 ft APD)	KB (12 ft APD)	KB (29 ft APD)
Drill depth (ft)	3,425	4,481	6,787	7,587	12,323
KB elevation - GL elevation (ft)	9	12	10	12	29
Formation 1	Lexington Limestone	Drakes Formation	Pikeville Formation of the Breathitt Group	Pikeville Formation of the Breathitt Group	Hyden Formation of the Breathitt Group
System or series	Upper Ordovician	Upper Ordovician	Lower Pennsylvanian	Lower Pennsylvanian	Lower Pennsylvanian
Formation top (relative to KB) (ft)	-9	-12	-10	-12	-29
Formation top (relative to GL) (ft)	0	0	0	0	0
Formation top (relative to SL) (ft)	940	977	1,118	805	1,028
Formation 2	Dickeyville Bentonite Bed	Ashlock Formation	Corbin Sandstone Member of the Grundy Formation	Corbin Sandstone Member of the Grundy Formation	Pikeville Formation of the Breathitt Group
System or series	Upper Ordovician	Upper Ordovician	Lower Pennsylvanian	Lower Pennsylvanian	Lower Pennsylvanian
Formation top (relative to KB) (ft)	-230	-150	-28	-100	-245
Formation top (relative to GL) (ft)	-221	-138	-18	-88	-216
Formation top (relative to SL) (ft)	719	839	1,100	717	812
Formation 3	“Elkport” Bentonite Bed	Calloway Creek Limestone	Paragon Formation	Paragon Formation	Corbin Sandstone Member of the Grundy Formation
System or series	Upper Ordovician	Upper Ordovician	Upper Mississippian	Upper Mississippian	Lower Pennsylvanian
Formation top (relative to KB) (ft)	-255	-243	-213	-310	-547
Formation top (relative to GL) (ft)	-246	-231	-203	-298	-518
Formation top (relative to SL) (ft)	694	746	915	507	510
Formation 4	High Bridge Group (Tyrone Limestone) and Millbrig Bentonite Bed	Garrard Siltstone	Slade Formation (equivalent to Bluefield Formation)	Slade Formation (equivalent to Bluefield Formation)	Grundy Formation of the Breathitt Group (coal-bearing lower part)
System or series	Upper Ordovician	Upper Ordovician	Upper Mississippian	Upper Mississippian	Lower Pennsylvanian
Formation top (relative to KB) (ft)	-283	-350	-245	-344	-620
Formation top (relative to GL) (ft)	-274	-338	-235	-332	-591
Formation top (relative to SL) (ft)	666	639	883	473	437

4 Pamphlet B—Geologic Cross Section *I–I'* Through the Appalachian Basin

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section *I–I'*.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	1	2	3	4	5
American Petroleum Institute well number	16–111–24576	16–211–09113	16–005–00000	16–239–21801	16–049–10287
Lease name	No. 1 Dupont Plant Disposal	No. 1 C.J. Morris	No. 1 Ben Bond	No. 1 Dudley Gaines	No. 1 Paul Adams and Clarence Long
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	452	763	760	852	930
Kelly bushing elevation (ft)	462	763	760	859	931
Measured from	KB (10 ft APD)	GL	GL	KB (7 ft APD)	KB (1 ft APD)
Drill depth (ft)	6,011	2,075	2,838	2,812	1,563
KB elevation - GL elevation (ft)	10	0	0	7	1
Formation 5	Louisville Limestone	Deicke Bentonite Bed	Wells Creek dolomite	Deicke Bentonite Bed	Deicke Bentonite Bed
System or series	upper Silurian	Upper Ordovician	Middle and Upper Ordovician	Upper Ordovician	Upper Ordovician
Formation top (relative to KB) (ft)	-260	-509	-700	-207	-188
Formation top (relative to GL) (ft)	-250	-509	-700	-200	-187
Formation top (relative to SL) (ft)	202	254	60	652	743
Formation 6	Waldron Shale	Wells Creek dolomite	St. Peter Sandstone	High Bridge Group (upper member of Camp Nelson Limestone and Oregon Formation (undivided)) and Hockett Bentonite Bed	High Bridge Group (upper member of Camp Nelson Limestone and Oregon Formation (undivided)) and Hockett Bentonite Bed
System or series	upper Silurian	Middle and Upper Ordovician	Middle Ordovician	Upper Ordovician	Upper Ordovician
Formation top (relative to KB) (ft)	-304	-998	-792	-276	-247
Formation top (relative to GL) (ft)	-294	-998	-792	-269	-246
Formation top (relative to SL) (ft)	158	-235	-32	583	684
Formation 7	Laurel Dolomite	St. Peter Sandstone	Beekmantown Dolomite	High Bridge Group (marker A)	High Bridge Group (marker A)
System or series	upper Silurian	Middle Ordovician	Lower Ordovician	Upper Ordovician	Upper Ordovician
Formation top (relative to KB) (ft)	-314	-1,060	-800	-447	-413
Formation top (relative to GL) (ft)	-304	-1,060	-800	-440	-412
Formation top (relative to SL) (ft)	148	-297	-40	412	518

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section /–/.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	6	7	8	9	10
American Petroleum Institute well number	16–049–18142	16–173–11507	16–165–29846	16–175–28019	16–237–30520
Lease name	No. 1 M.W. Miller	No. 16–1 Alvery Potter	No. 1 Campbell	No. 1 C.K. Stacy Heirs	No. 1 Orville Banks
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	940	977	1,118	805	1,028
Kelly bushing elevation (ft)	949	989	1,128	817	1,057
Measured from	KB (9 ft APD)	KB (12 ft APD)	KB (10 ft APD)	KB (12 ft APD)	KB (29 ft APD)
Drill depth (ft)	3,425	4,481	6,787	7,587	12,323
KB elevation - GL elevation (ft)	9	12	10	12	29
Formation 5	Deicke Bentonite Bed	Clays Ferry Formation	Slade Formation (equivalent to Newman Limestone)	Slade Formation (equivalent to Newman Limestone)	Bee Rock Sandstone of the Breathitt Group
System or series	Upper Ordovician	Upper Ordovician	Middle and Upper Mississippian	Middle and Upper Mississippian	Lower Pennsylvanian
Formation top (relative to KB) (ft)	-302	-380	-266	-364	-765
Formation top (relative to GL) (ft)	-293	-368	-256	-352	-736
Formation top (relative to SL) (ft)	647	609	862	453	292
Formation 6	High Bridge Group (upper member of Camp Nelson Limestone and Oregon Formation (undivided)) and Hockett Bentonite Bed	Lexington Limestone	Borden Formation (siltstone)	Borden Formation (siltstone)	Pennington Formation
System or series	Upper Ordovician	Upper Ordovician	Lower and Middle Mississippian	Lower and Middle Mississippian	Upper Mississippian
Formation top (relative to KB) (ft)	-365	-508	-347	-464	-810
Formation top (relative to GL) (ft)	-356	-496	-337	-452	-781
Formation top (relative to SL) (ft)	584	481	781	353	247
Formation 7	High Bridge Group (marker A)	Dickeyville Bentonite Bed	Borden Formation (silty shale)	Borden Formation (silty shale)	Newman Limestone (equivalent to Bluefield Formation)
System or series	Upper Ordovician	Upper Ordovician	Lower Mississippian	Lower Mississippian	Upper Mississippian
Formation top (relative to KB) (ft)	-540	-815	-505	-700	-875
Formation top (relative to GL) (ft)	-531	-803	-495	-688	-846
Formation top (relative to SL) (ft)	409	174	623	117	182

6 Pamphlet B—Geologic Cross Section I–I' Through the Appalachian Basin

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	1	2	3	4	5
American Petroleum Institute well number	16–111–24576	16–211–09113	16–005–00000	16–239–21801	16–049–10287
Lease name	No. 1 Dupont Plant Disposal	No. 1 C.J. Morris	No. 1 Ben Bond	No. 1 Dudley Gaines	No. 1 Paul Adams and Clarence Long
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	452	763	760	852	930
Kelly bushing elevation (ft)	462	763	760	859	931
Measured from	KB (10 ft APD)	GL	GL	KB (7 ft APD)	KB (1 ft APD)
Drill depth (ft)	6,011	2,075	2,838	2,812	1,563
KB elevation - GL elevation (ft)	10	0	0	7	1
Formation 8	Osgood Formation and Brassfield Limestone	Beekmantown Dolomite	Rose Run Sandstone (dolomite)	High Bridge Group (Pecatonica Member of Camp Nelson Limestone) (marker B)	High Bridge Group (Pecatonica Member of Camp Nelson Limestone) (marker B)
System or series	lower Silurian	Lower Ordovician	Upper Cambrian	Upper Ordovician	Upper Ordovician
Formation top (relative to KB) (ft)	-346	-1,067	-1,232	-528	-497
Formation top (relative to GL) (ft)	-336	-1,067	-1,232	-521	-496
Formation top (relative to SL) (ft)	116	-304	-472	331	434
Formation 9	Drakes Formation	Rose Run Sandstone (dolomite)	Copper Ridge Dolomite	High Bridge Group (lower member of Camp Nelson Limestone)	High Bridge Group (lower member of Camp Nelson Limestone)
System or series	Upper Ordovician	Upper Cambrian	Upper Cambrian	Middle and Upper Ordovician	Middle and Upper Ordovician
Formation top (relative to KB) (ft)	-380	-1,610	-1,366	-618	-596
Formation top (relative to GL) (ft)	-370	-1,610	-1,366	-611	-595
Formation top (relative to SL) (ft)	82	-847	-606	241	335
Formation 10	Grant Lake Limestone	Copper Ridge Dolomite		Wells Creek dolomite (marker C)	Wells Creek dolomite (marker C)
System or series	Upper Ordovician	Upper Cambrian		Middle and Upper Ordovician	Middle and Upper Ordovician
Formation top (relative to KB) (ft)	-435	-1,750		-678	-650
Formation top (relative to GL) (ft)	-425	-1,750		-671	-649
Formation top (relative to SL) (ft)	27	-987		181	281

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section /–/'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	6	7	8	9	10
American Petroleum Institute well number	16–049–18142	16–173–11507	16–165–29846	16–175–28019	16–237–30520
Lease name	No. 1 M.W. Miller	No. 16–1 Alvery Potter	No. 1 Campbell	No. 1 C.K. Stacy Heirs	No. 1 Orville Banks
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	940	977	1,118	805	1,028
Kelly bushing elevation (ft)	949	989	1,128	817	1,057
Measured from	KB (9 ft APD)	KB (12 ft APD)	KB (10 ft APD)	KB (12 ft APD)	KB (29 ft APD)
Drill depth (ft)	3,425	4,481	6,787	7,587	12,323
KB elevation - GL elevation (ft)	9	12	10	12	29
Formation 8	High Bridge Group (Pecatonica Member of Camp Nelson Limestone) (marker B)	“Elkport” Bentonite Bed	Sunbury Shale	Sunbury Shale	Newman Limestone (equivalent to Greenbrier Limestone)
System or series	Upper Ordovician	Upper Ordovician	Lower Mississippian	Lower Mississippian	Middle and Upper Mississippian
Formation top (relative to KB) (ft)	-630	-844	-895	-1,000	-900
Formation top (relative to GL) (ft)	-621	-832	-885	-988	-871
Formation top (relative to SL) (ft)	319	145	233	-183	157
Formation 9	High Bridge Group (lower member of Camp Nelson Limestone)	High Bridge Group (Tyrone Limestone) and Millbrig Bentonite Bed	Berea Sandstone	Berea Sandstone	Borden Formation (siltstone)
System or series	Middle and Upper Ordovician	Upper Ordovician	Upper Devonian	Upper Devonian	Lower and Middle Mississippian
Formation top (relative to KB) (ft)	-715	-880	-910	-1,014	-980
Formation top (relative to GL) (ft)	-706	-868	-900	-1,002	-951
Formation top (relative to SL) (ft)	234	109	218	-197	77
Formation 10	Wells Creek dolomite (marker C)	Deicke Bentonite Bed	Bedford Shale	Cleveland Member of the Ohio Shale	Borden Formation (silty shale)
System or series	Middle and Upper Ordovician	Upper Ordovician	Upper Devonian	Upper Devonian	Lower Mississippian
Formation top (relative to KB) (ft)	-767	-903	-920	-1,050	-1,280
Formation top (relative to GL) (ft)	-758	-891	-910	-1,038	-1,251
Formation top (relative to SL) (ft)	182	86	208	-233	-223

8 Pamphlet B—Geologic Cross Section I–I' Through the Appalachian Basin

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	1	2	3	4	5
American Petroleum Institute well number	16–111–24576	16–211–09113	16–005–00000	16–239–21801	16–049–10287
Lease name	No. 1 Dupont Plant Disposal	No. 1 C.J. Morris	No. 1 Ben Bond	No. 1 Dudley Gaines	No. 1 Paul Adams and Clarence Long
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	452	763	760	852	930
Kelly bushing elevation (ft)	462	763	760	859	931
Measured from	KB (10 ft APD)	GL	GL	KB (7 ft APD)	KB (1 ft APD)
Drill depth (ft)	6,011	2,075	2,838	2,812	1,563
KB elevation - GL elevation (ft)	10	0	0	7	1
Formation 11	Calloway Creek Limestone			Wells Creek dolomite (marker D)	Wells Creek dolomite (marker D)
System or series	Upper Ordovician			Middle and Upper Ordovician	Middle and Upper Ordovician
Formation top (relative to KB) (ft)	-512			-748	-708
Formation top (relative to GL) (ft)	-502			-741	-707
Formation top (relative to SL) (ft)	-50			111	223
Formation 12	Maquoketa Shale			Beekmantown Dolomite	Beekmantown Dolomite
System or series	Upper Ordovician			Lower Ordovician	Lower Ordovician
Formation top (relative to KB) (ft)	-630			-780	-760
Formation top (relative to GL) (ft)	-620			-773	-759
Formation top (relative to SL) (ft)	-168			79	171
Formation 13	“Utica shale”			Rose Run Sandstone (dolomite)	Rose Run Sandstone (dolomite)
System or series	Upper Ordovician			Upper Cambrian	Upper Cambrian
Formation top (relative to KB) (ft)	-890			-1,260	-1,250
Formation top (relative to GL) (ft)	-880			-1,253	-1,249
Formation top (relative to SL) (ft)	-428			-401	-319

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section /–/.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	6	7	8	9	10
American Petroleum Institute well number	16–049–18142	16–173–11507	16–165–29846	16–175–28019	16–237–30520
Lease name	No. 1 M.W. Miller	No. 16–1 Alvery Potter	No. 1 Campbell	No. 1 C.K. Stacy Heirs	No. 1 Orville Banks
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	940	977	1,118	805	1,028
Kelly bushing elevation (ft)	949	989	1,128	817	1,057
Measured from	KB (9 ft APD)	KB (12 ft APD)	KB (10 ft APD)	KB (12 ft APD)	KB (29 ft APD)
Drill depth (ft)	3,425	4,481	6,787	7,587	12,323
KB elevation - GL elevation (ft)	9	12	10	12	29
Formation 11	Wells Creek dolomite (marker D)	High Bridge Group (upper member of Camp Nelson Limestone and Oregon Formation (undivided)) and Hockett Bentonite Bed	Cleveland Member of the Ohio Shale	Three Lick Bed	Sunbury Shale
System or series	Middle and Upper Ordovician	Upper Ordovician	Upper Devonian	Upper Devonian	Lower Mississippian
Formation top (relative to KB) (ft)	-819	-970	-950	-1,100	-1,483
Formation top (relative to GL) (ft)	-810	-958	-940	-1,088	-1,454
Formation top (relative to SL) (ft)	130	19	178	-283	-426
Formation 12	Beekmantown Dolomite	High Bridge Group (marker A)	Three Lick Bed	Huron Member of the Ohio Shale (upper part)	Bedford Shale
System or series	Lower Ordovician	Upper Ordovician	Upper Devonian	Upper Devonian	Upper Devonian
Formation top (relative to KB) (ft)	-865	-1,163	-966	-1,120	-1,495
Formation top (relative to GL) (ft)	-856	-1,151	-956	-1,108	-1,466
Formation top (relative to SL) (ft)	84	-174	162	-303	-438
Formation 13	Rose Run Sandstone (dolomite)	High Bridge Group (Pecatonica Member of Camp Nelson Limestone) (marker B)	Huron Member of the Ohio Shale (upper part)	Chagrin Shale tongue	Cleveland Member of the Ohio Shale
System or series	Upper Cambrian	Upper Ordovician	Upper Devonian	Upper Devonian	Upper Devonian
Formation top (relative to KB) (ft)	-1,345	-1,250	-982	-1,160	-1,530
Formation top (relative to GL) (ft)	-1,336	-1,238	-972	-1,148	-1,501
Formation top (relative to SL) (ft)	-396	-261	146	-343	-473

10 Pamphlet B—Geologic Cross Section I–I' Through the Appalachian Basin

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	1	2	3	4	5
American Petroleum Institute well number	16–111–24576	16–211–09113	16–005–00000	16–239–21801	16–049–10287
Lease name	No. 1 Dupont Plant Disposal	No. 1 C.J. Morris	No. 1 Ben Bond	No. 1 Dudley Gaines	No. 1 Paul Adams and Clarence Long
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	452	763	760	852	930
Kelly bushing elevation (ft)	462	763	760	859	931
Measured from	KB (10 ft APD)	GL	GL	KB (7 ft APD)	KB (1 ft APD)
Drill depth (ft)	6,011	2,075	2,838	2,812	1,563
KB elevation - GL elevation (ft)	10	0	0	7	1
Formation 14	Lexington Limestone			Copper Ridge Dolomite	Copper Ridge Dolomite
System or series	Upper Ordovician			Upper Cambrian	Upper Cambrian
Formation top (relative to KB) (ft)	-1,003			-1,370	-1,338
Formation top (relative to GL) (ft)	-993			-1,363	-1,337
Formation top (relative to SL) (ft)	-541			-511	-407
Formation 15	High Bridge Group (Tyrone Limestone) and Millbrig Bentonite Bed			Copper Ridge Dolomite (marker X1)	
System or series	Upper Ordovician			Upper Cambrian	
Formation top (relative to KB) (ft)	-1,137			-1,823	
Formation top (relative to GL) (ft)	-1,127			-1,816	
Formation top (relative to SL) (ft)	-675			-964	
Formation 16	Deicke Bentonite Bed			Copper Ridge Dolomite (marker Y)	
System or series	Upper Ordovician			Upper Cambrian	
Formation top (relative to KB) (ft)	-1,153			-2,460	
Formation top (relative to GL) (ft)	-1,143			-2,453	
Formation top (relative to SL) (ft)	-691			-1,601	

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section /–/.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	6	7	8	9	10
American Petroleum Institute well number	16–049–18142	16–173–11507	16–165–29846	16–175–28019	16–237–30520
Lease name	No. 1 M.W. Miller	No. 16–1 Alvery Potter	No. 1 Campbell	No. 1 C.K. Stacy Heirs	No. 1 Orville Banks
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	940	977	1,118	805	1,028
Kelly bushing elevation (ft)	949	989	1,128	817	1,057
Measured from	KB (9 ft APD)	KB (12 ft APD)	KB (10 ft APD)	KB (12 ft APD)	KB (29 ft APD)
Drill depth (ft)	3,425	4,481	6,787	7,587	12,323
KB elevation - GL elevation (ft)	9	12	10	12	29
Formation 14	Copper Ridge Dolomite	High Bridge Group (lower member of Camp Nelson Limestone)	Chagrin Shale tongue	Huron Member of the Ohio Shale (lower part)	Three Lick Bed
System or series	Upper Cambrian	Middle and Upper Ordovician	Upper Devonian	Upper Devonian	Upper Devonian
Formation top (relative to KB) (ft)	-1,440	-1,340	-1,018	-1,226	-1,580
Formation top (relative to GL) (ft)	-1,431	-1,328	-1,008	-1,214	-1,551
Formation top (relative to SL) (ft)	-491	-351	110	-409	-523
Formation 15	Copper Ridge Dolomite (marker X1)	Wells Creek dolomite (marker C)	Huron Member of the Ohio Shale (lower part)	Salina Formation	Huron Member of the Ohio Shale (upper part)
System or series	Upper Cambrian	Middle and Upper Ordovician	Upper Devonian	upper Silurian	Upper Devonian
Formation top (relative to KB) (ft)	-1,930	-1,396	-1,070	-1,300	-1,600
Formation top (relative to GL) (ft)	-1,921	-1,384	-1,060	-1,288	-1,571
Formation top (relative to SL) (ft)	-981	-407	58	-483	-543
Formation 16	Copper Ridge Dolomite (marker Y)	Wells Creek dolomite (marker D)	Lockport Dolomite	Lockport Dolomite	Chagrin Shale tongue
System or series	Upper Cambrian	Middle and Upper Ordovician	lower and upper Silurian	lower and upper Silurian	Upper Devonian
Formation top (relative to KB) (ft)	-2,539	-1,450	-1,110	-1,350	-1,637
Formation top (relative to GL) (ft)	-2,530	-1,438	-1,100	-1,338	-1,608
Formation top (relative to SL) (ft)	-1,590	-461	18	-533	-580

12 Pamphlet B—Geologic Cross Section I–I' Through the Appalachian Basin

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	1	2	3	4	5
American Petroleum Institute well number	16–111–24576	16–211–09113	16–005–00000	16–239–21801	16–049–10287
Lease name	No. 1 Dupont Plant Disposal	No. 1 C.J. Morris	No. 1 Ben Bond	No. 1 Dudley Gaines	No. 1 Paul Adams and Clarence Long
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	452	763	760	852	930
Kelly bushing elevation (ft)	462	763	760	859	931
Measured from	KB (10 ft APD)	GL	GL	KB (7 ft APD)	KB (1 ft APD)
Drill depth (ft)	6,011	2,075	2,838	2,812	1,563
KB elevation - GL elevation (ft)	10	0	0	7	1
Formation 17	upper member of Camp Nelson Limestone and Oregon Formation (undivided) and Hockett Bentonite Bed				
System or series	Upper Ordovician				
Formation top (relative to KB) (ft)	-1,214				
Formation top (relative to GL) (ft)	-1,204				
Formation top (relative to SL) (ft)	-752				
Formation 18	High Bridge Group (marker A)				
System or series	Upper Ordovician				
Formation top (relative to KB) (ft)	-1,376				
Formation top (relative to GL) (ft)	-1,366				
Formation top (relative to SL) (ft)	-914				
Formation 19	High Bridge Group (Pecatonica Member of Camp Nelson Limestone)				
System or series	Upper Ordovician				
Formation top (relative to KB) (ft)	-1,488				
Formation top (relative to GL) (ft)	-1,478				
Formation top (relative to SL) (ft)	-1,026				

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section /–/.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	6	7	8	9	10
American Petroleum Institute well number	16–049–18142	16–173–11507	16–165–29846	16–175–28019	16–237–30520
Lease name	No. 1 M.W. Miller	No. 16–1 Alvery Potter	No. 1 Campbell	No. 1 C.K. Stacy Heirs	No. 1 Orville Banks
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	940	977	1,118	805	1,028
Kelly bushing elevation (ft)	949	989	1,128	817	1,057
Measured from	KB (9 ft APD)	KB (12 ft APD)	KB (10 ft APD)	KB (12 ft APD)	KB (29 ft APD)
Drill depth (ft)	3,425	4,481	6,787	7,587	12,323
KB elevation - GL elevation (ft)	9	12	10	12	29
Formation 17	Conasauga Formation (shale)	St. Peter Sandstone	Keefer (Big Six) Sandstone	Keefer (Big Six) Sandstone	Huron Member of the Ohio Shale (lower part)
System or series	Upper Cambrian	Middle Ordovician	lower Silurian	lower Silurian	Upper Devonian
Formation top (relative to KB) (ft)	-2,684	-1,500	-1,200	-1,430	-1,710
Formation top (relative to GL) (ft)	-2,675	-1,488	-1,190	-1,418	-1,681
Formation top (relative to SL) (ft)	-1,735	-511	-72	-613	-653
Formation 18	Conasauga Formation (limestone)	Beekmantown Dolomite	Estill Shale Member of the Alger Shale	Estill Shale Member of the Alger Shale	Salina Formation
System or series	Upper Cambrian	Lower Ordovician	lower Silurian	lower Silurian	upper Silurian
Formation top (relative to KB) (ft)	-2,730	-1,544	-1,218	-1,462	-1,792
Formation top (relative to GL) (ft)	-2,721	-1,532	-1,208	-1,450	-1,763
Formation top (relative to SL) (ft)	-1,781	-555	-90	-645	-735
Formation 19	Conasauga Formation (shale)	Rose Run Sandstone	Waco Member of the Alger Shale	Waco Member of the Alger Shale	Lockport Dolomite
System or series	Upper Cambrian	Upper Cambrian	lower Silurian	lower Silurian	lower and upper Silurian
Formation top (relative to KB) (ft)	-2,747	-2,084	-1,353	-1,584	-1,880
Formation top (relative to GL) (ft)	-2,738	-2,072	-1,343	-1,572	-1,851
Formation top (relative to SL) (ft)	-1,798	-1,095	-225	-767	-823

14 Pamphlet B—Geologic Cross Section I–I' Through the Appalachian Basin

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	1	2	3	4	5
American Petroleum Institute well number	16–111–24576	16–211–09113	16–005–00000	16–239–21801	16–049–10287
Lease name	No. 1 Dupont Plant Disposal	No. 1 C.J. Morris	No. 1 Ben Bond	No. 1 Dudley Gaines	No. 1 Paul Adams and Clarence Long
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	452	763	760	852	930
Kelly bushing elevation (ft)	462	763	760	859	931
Measured from	KB (10 ft APD)	GL	GL	KB (7 ft APD)	KB (1 ft APD)
Drill depth (ft)	6,011	2,075	2,838	2,812	1,563
KB elevation - GL elevation (ft)	10	0	0	7	1
Formation 20	High Bridge Group (lower member of Camp Nelson Limestone) (equivalent to Joachim Dolomite)				
System or series	Middle and Upper Ordovician				
Formation top (relative to KB) (ft)	-1,578				
Formation top (relative to GL) (ft)	-1,568				
Formation top (relative to SL) (ft)	-1,116				
Formation 21	Wells Creek dolomite				
System or series	Middle and Upper Ordovician				
Formation top (relative to KB) (ft)	-1,640				
Formation top (relative to GL) (ft)	-1,630				
Formation top (relative to SL) (ft)	-1,178				
Formation 22	St. Peter Sandstone				
System or series	Middle Ordovician				
Formation top (relative to KB) (ft)	-1,704				
Formation top (relative to GL) (ft)	-1,694				
Formation top (relative to SL) (ft)	-1,242				

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section /–/.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	6	7	8	9	10
American Petroleum Institute well number	16–049–18142	16–173–11507	16–165–29846	16–175–28019	16–237–30520
Lease name	No. 1 M.W. Miller	No. 16–1 Alvery Potter	No. 1 Campbell	No. 1 C.K. Stacy Heirs	No. 1 Orville Banks
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	940	977	1,118	805	1,028
Kelly bushing elevation (ft)	949	989	1,128	817	1,057
Measured from	KB (9 ft APD)	KB (12 ft APD)	KB (10 ft APD)	KB (12 ft APD)	KB (29 ft APD)
Drill depth (ft)	3,425	4,481	6,787	7,587	12,323
KB elevation - GL elevation (ft)	9	12	10	12	29
Formation 20	Conasauga Formation (limestone)	Copper Ridge Dolomite	Lulbegrud Shale Member of the Alger Shale	Lulbegrud Shale Member of the Alger Shale	Keefer (Big Six) Sandstone
System or series	Upper Cambrian	Upper Cambrian	lower Silurian	lower Silurian	lower Silurian
Formation top (relative to KB) (ft)	-2,773	-2,160	-1,358	-1,620	-1,960
Formation top (relative to GL) (ft)	-2,764	-2,148	-1,348	-1,608	-1,931
Formation top (relative to SL) (ft)	-1,824	-1,171	-230	-803	-903
Formation 21	Conasauga Formation (shale)	Copper Ridge Dolomite (marker X1)	Oldham Member of the Drowning Creek Formation	Oldham Member of the Drowning Creek Formation	Estill Shale Member of the Alger Shale
System or series	Upper Cambrian	Upper Cambrian	lower Silurian	lower Silurian	lower Silurian
Formation top (relative to KB) (ft)	-2,795	-2,610	-1,380	-1,650	-2,018
Formation top (relative to GL) (ft)	-2,786	-2,598	-1,370	-1,638	-1,989
Formation top (relative to SL) (ft)	-1,846	-1,621	-252	-833	-961
Formation 22	Mount Simon Sandstone	Copper Ridge Dolomite (marker Y)	Plum Creek Shale Member of the Drowning Creek Formation	Plum Creek Shale Member of the Drowning Creek Formation	Waco Member of the Alger Shale
System or series	Upper Cambrian	Upper Cambrian	lower Silurian	lower Silurian	lower Silurian
Formation top (relative to KB) (ft)	-3,050	-3,235	-1,400	-1,680	-2,230
Formation top (relative to GL) (ft)	-3,041	-3,223	-1,390	-1,668	-2,201
Formation top (relative to SL) (ft)	-2,101	-2,246	-272	-863	-1,173

16 Pamphlet B—Geologic Cross Section I–I' Through the Appalachian Basin

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	1	2	3	4	5
American Petroleum Institute well number	16–111–24576	16–211–09113	16–005–00000	16–239–21801	16–049–10287
Lease name	No. 1 Dupont Plant Disposal	No. 1 C.J. Morris	No. 1 Ben Bond	No. 1 Dudley Gaines	No. 1 Paul Adams and Clarence Long
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	452	763	760	852	930
Kelly bushing elevation (ft)	462	763	760	859	931
Measured from	KB (10 ft APD)	GL	GL	KB (7 ft APD)	KB (1 ft APD)
Drill depth (ft)	6,011	2,075	2,838	2,812	1,563
KB elevation - GL elevation (ft)	10	0	0	7	1
Formation 23	Beekmantown Dolomite				
System or series	Lower Ordovician				
Formation top (relative to KB) (ft)	-1,710				
Formation top (relative to GL) (ft)	-1,700				
Formation top (relative to SL) (ft)	-1,248				
Formation 24	Rose Run Sandstone				
System or series	Upper Cambrian				
Formation top (relative to KB) (ft)	-2,170				
Formation top (relative to GL) (ft)	-2,160				
Formation top (relative to SL) (ft)	-1,708				
Formation 25	Copper Ridge Dolomite				
System or series	Upper Cambrian				
Formation top (relative to KB) (ft)	-2,442				
Formation top (relative to GL) (ft)	-2,432				
Formation top (relative to SL) (ft)	-1,980				

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section /–/.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	6	7	8	9	10
American Petroleum Institute well number	16–049–18142	16–173–11507	16–165–29846	16–175–28019	16–237–30520
Lease name	No. 1 M.W. Miller	No. 16–1 Alvery Potter	No. 1 Campbell	No. 1 C.K. Stacy Heirs	No. 1 Orville Banks
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	940	977	1,118	805	1,028
Kelly bushing elevation (ft)	949	989	1,128	817	1,057
Measured from	KB (9 ft APD)	KB (12 ft APD)	KB (10 ft APD)	KB (12 ft APD)	KB (29 ft APD)
Drill depth (ft)	3,425	4,481	6,787	7,587	12,323
KB elevation - GL elevation (ft)	9	12	10	12	29
Formation 23	Granite and (or) gneiss	Maynardville Limestone of the Conasauga Group	Brassfield Member of the Drowning Creek Formation	Brassfield Member of the Drowning Creek Formation	Lulbegrud Shale Member of the Alger Shale
System or series	Mesoproterozoic	Upper Cambrian	lower Silurian	lower Silurian	lower Silurian
Formation top (relative to KB) (ft)	-3,075	-3,465	-1,430	-1,715	-2,238
Formation top (relative to GL) (ft)	-3,066	-3,453	-1,420	-1,703	-2,209
Formation top (relative to SL) (ft)	-2,126	-2,476	-302	-898	-1,181
Formation 24		Nolichucky Shale of the Conasauga Group	Drakes Formation	Drakes Formation	Oldham Member of the Drowning Creek Formation
System or series		Upper Cambrian	Upper Ordovician	Upper Ordovician	lower Silurian
Formation top (relative to KB) (ft)		-3,530	-1,466	-1,753	-2,246
Formation top (relative to GL) (ft)		-3,518	-1,456	-1,741	-2,217
Formation top (relative to SL) (ft)		-2,541	-338	-936	-1,189
Formation 25		Nolichucky Shale (limestone)	Ashlock Formation	Ashlock Formation	Plum Creek Shale Member of the Drowning Creek Formation
System or series		Upper Cambrian	Upper Ordovician	Upper Ordovician	lower Silurian
Formation top (relative to KB) (ft)		-3,580	-1,614	-1,920	-2,270
Formation top (relative to GL) (ft)		-3,568	-1,604	-1,908	-2,241
Formation top (relative to SL) (ft)		-2,591	-486	-1,103	-1,213

18 Pamphlet B—Geologic Cross Section I–I' Through the Appalachian Basin

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	1	2	3	4	5
American Petroleum Institute well number	16–111–24576	16–211–09113	16–005–00000	16–239–21801	16–049–10287
Lease name	No. 1 Dupont Plant Disposal	No. 1 C.J. Morris	No. 1 Ben Bond	No. 1 Dudley Gaines	No. 1 Paul Adams and Clarence Long
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	452	763	760	852	930
Kelly bushing elevation (ft)	462	763	760	859	931
Measured from	KB (10 ft APD)	GL	GL	KB (7 ft APD)	KB (1 ft APD)
Drill depth (ft)	6,011	2,075	2,838	2,812	1,563
KB elevation - GL elevation (ft)	10	0	0	7	1
Formation 26	Eau Claire Formation (upper part) (equivalent to Maynardville Limestone)				
System or series	Upper Cambrian				
Formation top (relative to KB) (ft)	-4,310				
Formation top (relative to GL) (ft)	-4,300				
Formation top (relative to SL) (ft)	-3,848				
Formation 27	Eau Claire Formation				
System or series	Upper Cambrian				
Formation top (relative to KB) (ft)	-4,486				
Formation top (relative to GL) (ft)	-4,476				
Formation top (relative to SL) (ft)	-4,024				
Formation 28	Mount Simon Sandstone				
System or series	Upper Cambrian				
Formation top (relative to KB) (ft)	-5,118				
Formation top (relative to GL) (ft)	-5,108				
Formation top (relative to SL) (ft)	-4,656				
Formation 29	Gabbro and (or) basalt				
System or series	Mesoproterozoic				
Formation top (relative to KB) (ft)	-5,958				
Formation top (relative to GL) (ft)	-5,948				
Formation top (relative to SL) (ft)	-5,496				

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section /–/.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	6	7	8	9	10
American Petroleum Institute well number	16–049–18142	16–173–11507	16–165–29846	16–175–28019	16–237–30520
Lease name	No. 1 M.W. Miller	No. 16–1 Alvery Potter	No. 1 Campbell	No. 1 C.K. Stacy Heirs	No. 1 Orville Banks
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	940	977	1,118	805	1,028
Kelly bushing elevation (ft)	949	989	1,128	817	1,057
Measured from	KB (9 ft APD)	KB (12 ft APD)	KB (10 ft APD)	KB (12 ft APD)	KB (29 ft APD)
Drill depth (ft)	3,425	4,481	6,787	7,587	12,323
KB elevation - GL elevation (ft)	9	12	10	12	29
Formation 26		Nolichucky Shale (shale)	Calloway Creek Limestone	Calloway Creek Limestone	Brassfield Member of the Drowning Creek Formation
System or series		Upper Cambrian	Upper Ordovician	Upper Ordovician	lower Silurian
Formation top (relative to KB) (ft)		-3,605	-1,706	-2,014	-2,316
Formation top (relative to GL) (ft)		-3,593	-1,696	-2,002	-2,287
Formation top (relative to SL) (ft)		-2,616	-578	-1,197	-1,259
Formation 27		Nolichucky Shale (limestone)	Garrard Siltstone	Garrard Siltstone	Drakes Formation
System or series		Upper Cambrian	Upper Ordovician	Upper Ordovician	Upper Ordovician
Formation top (relative to KB) (ft)		-3,628	-1,806	-2,110	-2,360
Formation top (relative to GL) (ft)		-3,616	-1,796	-2,098	-2,331
Formation top (relative to SL) (ft)		-2,639	-678	-1,293	-1,303
Formation 28		Nolichucky Shale (shale)	Clays Ferry Formation	Clays Ferry Formation	Ashlock Formation
System or series		Upper Cambrian	Upper Ordovician	Upper Ordovician	Upper Ordovician
Formation top (relative to KB) (ft)		-3,660	-1,830	-2,150	-2,540
Formation top (relative to GL) (ft)		-3,648	-1,820	-2,138	-2,511
Formation top (relative to SL) (ft)		-2,671	-702	-1,333	-1,483
Formation 29		Maryville Limestone of the Conasauga Group	Lexington Limestone	Lexington Limestone	Calloway Creek Limestone
System or series		Middle and Upper Cambrian	Upper Ordovician	Upper Ordovician	Upper Ordovician
Formation top (relative to KB) (ft)		-4,100	-1,890	-2,220	-2,635
Formation top (relative to GL) (ft)		-4,088	-1,880	-2,208	-2,606
Formation top (relative to SL) (ft)		-3,111	-762	-1,403	-1,578

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	1	2	3	4	5
American Petroleum Institute well number	16–111–24576	16–211–09113	16–005–00000	16–239–21801	16–049–10287
Lease name	No. 1 Dupont Plant Disposal	No. 1 C.J. Morris	No. 1 Ben Bond	No. 1 Dudley Gaines	No. 1 Paul Adams and Clarence Long
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	452	763	760	852	930
Kelly bushing elevation (ft)	462	763	760	859	931
Measured from	KB (10 ft APD)	GL	GL	KB (7 ft APD)	KB (1 ft APD)
Drill depth (ft)	6,011	2,075	2,838	2,812	1,563
KB elevation - GL elevation (ft)	10	0	0	7	1
Formation 30					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 31					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 32					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 33					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section /–/.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	6	7	8	9	10
American Petroleum Institute well number	16–049–18142	16–173–11507	16–165–29846	16–175–28019	16–237–30520
Lease name	No. 1 M.W. Miller	No. 16–1 Alvery Potter	No. 1 Campbell	No. 1 C.K. Stacy Heirs	No. 1 Orville Banks
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	940	977	1,118	805	1,028
Kelly bushing elevation (ft)	949	989	1,128	817	1,057
Measured from	KB (9 ft APD)	KB (12 ft APD)	KB (10 ft APD)	KB (12 ft APD)	KB (29 ft APD)
Drill depth (ft)	3,425	4,481	6,787	7,587	12,323
KB elevation - GL elevation (ft)	9	12	10	12	29
Formation 30		Rome Formation	Dickeyville Bentonite Bed	Dickeyville Bentonite Bed	Garrard Siltstone
System or series		Lower and Middle Cambrian	Upper Ordovician	Upper Ordovician	Upper Ordovician
Formation top (relative to KB) (ft)		-4,410	-2,374	-2,700	-2,735
Formation top (relative to GL) (ft)		-4,398	-2,364	-2,688	-2,706
Formation top (relative to SL) (ft)		-3,421	-1,246	-1,883	-1,678
Formation 31		Metamorphic rocks	“Elkport” Bentonite Bed	“Elkport” Bentonite Bed	Clays Ferry Formation
System or series		Mesoproterozoic	Upper Ordovician	Upper Ordovician	Upper Ordovician
Formation top (relative to KB) (ft)		-4,455	-2,400	-2,730	-2,773
Formation top (relative to GL) (ft)		-4,443	-2,390	-2,718	-2,744
Formation top (relative to SL) (ft)		-3,466	-1,272	-1,913	-1,716
Formation 32			High Bridge Group (Tyrone Limestone) and Millbrig Bentonite Bed	High Bridge Group (Tyrone Limestone) and Millbrig Bentonite Bed	Lexington Limestone
System or series			Upper Ordovician	Upper Ordovician	Upper Ordovician
Formation top (relative to KB) (ft)			-2,420	-2,752	-2,840
Formation top (relative to GL) (ft)			-2,410	-2,740	-2,811
Formation top (relative to SL) (ft)			-1,292	-1,935	-1,783
Formation 33			Deicke Bentonite Bed	Deicke Bentonite Bed	Dickeyville Bentonite Bed
System or series			Upper Ordovician	Upper Ordovician	Upper Ordovician
Formation top (relative to KB) (ft)			-2,450	-2,780	-3,340
Formation top (relative to GL) (ft)			-2,440	-2,768	-3,311
Formation top (relative to SL) (ft)			-1,322	-1,963	-2,283

22 Pamphlet B—Geologic Cross Section I–I' Through the Appalachian Basin

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	1	2	3	4	5
American Petroleum Institute well number	16–111–24576	16–211–09113	16–005–00000	16–239–21801	16–049–10287
Lease name	No. 1 Dupont Plant Disposal	No. 1 C.J. Morris	No. 1 Ben Bond	No. 1 Dudley Gaines	No. 1 Paul Adams and Clarence Long
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	452	763	760	852	930
Kelly bushing elevation (ft)	462	763	760	859	931
Measured from	KB (10 ft APD)	GL	GL	KB (7 ft APD)	KB (1 ft APD)
Drill depth (ft)	6,011	2,075	2,838	2,812	1,563
KB elevation - GL elevation (ft)	10	0	0	7	1
Formation 34					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 35					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 36					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section /–/.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	6	7	8	9	10
American Petroleum Institute well number	16–049–18142	16–173–11507	16–165–29846	16–175–28019	16–237–30520
Lease name	No. 1 M.W. Miller	No. 16–1 Alvery Potter	No. 1 Campbell	No. 1 C.K. Stacy Heirs	No. 1 Orville Banks
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	940	977	1,118	805	1,028
Kelly bushing elevation (ft)	949	989	1,128	817	1,057
Measured from	KB (9 ft APD)	KB (12 ft APD)	KB (10 ft APD)	KB (12 ft APD)	KB (29 ft APD)
Drill depth (ft)	3,425	4,481	6,787	7,587	12,323
KB elevation - GL elevation (ft)	9	12	10	12	29
Formation 34			High Bridge Group (upper member of Camp Nelson Limestone and Oregon Formation (undivided)) and Hockett Bentonite Bed	High Bridge Group (upper member of Camp Nelson Limestone and Oregon Formation (undivided)) and Hockett Bentonite Bed	“Elkport” Bentonite Bed
System or series			Upper Ordovician	Upper Ordovician	Upper Ordovician
Formation top (relative to KB) (ft)			-2,524	-2,860	-3,372
Formation top (relative to GL) (ft)			-2,514	-2,848	-3,343
Formation top (relative to SL) (ft)			-1,396	-2,043	-2,315
Formation 35			High Bridge Group (marker A)	High Bridge Group (marker A)	High Bridge Group (Tyrone Limestone) and Millbrig Bentonite Bed
System or series			Upper Ordovician	Upper Ordovician	Upper Ordovician
Formation top (relative to KB) (ft)			-2,750	-3,104	-3,400
Formation top (relative to GL) (ft)			-2,740	-3,092	-3,371
Formation top (relative to SL) (ft)			-1,622	-2,287	-2,343
Formation 36			High Bridge Group (Pecatonica Member of Camp Nelson Limestone) (marker B)	High Bridge Group (Pecatonica Member of Camp Nelson Limestone) (marker B)	Deicke Bentonite Bed
System or series			Upper Ordovician	Upper Ordovician	Upper Ordovician
Formation top (relative to KB) (ft)			-2,830	-3,188	-3,423
Formation top (relative to GL) (ft)			-2,820	-3,176	-3,394
Formation top (relative to SL) (ft)			-1,702	-2,371	-2,366

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	1	2	3	4	5
American Petroleum Institute well number	16–111–24576	16–211–09113	16–005–00000	16–239–21801	16–049–10287
Lease name	No. 1 Dupont Plant Disposal	No. 1 C.J. Morris	No. 1 Ben Bond	No. 1 Dudley Gaines	No. 1 Paul Adams and Clarence Long
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	452	763	760	852	930
Kelly bushing elevation (ft)	462	763	760	859	931
Measured from	KB (10 ft APD)	GL	GL	KB (7 ft APD)	KB (1 ft APD)
Drill depth (ft)	6,011	2,075	2,838	2,812	1,563
KB elevation - GL elevation (ft)	10	0	0	7	1
Formation 37					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 38					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 39					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section /–/.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	6	7	8	9	10
American Petroleum Institute well number	16–049–18142	16–173–11507	16–165–29846	16–175–28019	16–237–30520
Lease name	No. 1 M.W. Miller	No. 16–1 Alvery Potter	No. 1 Campbell	No. 1 C.K. Stacy Heirs	No. 1 Orville Banks
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	940	977	1,118	805	1,028
Kelly bushing elevation (ft)	949	989	1,128	817	1,057
Measured from	KB (9 ft APD)	KB (12 ft APD)	KB (10 ft APD)	KB (12 ft APD)	KB (29 ft APD)
Drill depth (ft)	3,425	4,481	6,787	7,587	12,323
KB elevation - GL elevation (ft)	9	12	10	12	29
Formation 37			High Bridge Group (lower member of Camp Nelson Limestone)	High Bridge Group (lower member of Camp Nelson Limestone)	High Bridge Group (upper member of Camp Nelson Limestone and Oregon Formation (undivided)) and Hockett Bentonite Bed
System or series			Middle and Upper Ordovician	Middle and Upper Ordovician	Upper Ordovician
Formation top (relative to KB) (ft)			-2,932	-3,286	-3,510
Formation top (relative to GL) (ft)			-2,922	-3,274	-3,481
Formation top (relative to SL) (ft)			-1,804	-2,469	-2,453
Formation 38			Wells Creek dolomite (marker C)	Wells Creek dolomite (marker C)	High Bridge Group (marker A)
System or series			Middle and Upper Ordovician	Middle and Upper Ordovician	Upper Ordovician
Formation top (relative to KB) (ft)			-2,986	-3,340	-3,780
Formation top (relative to GL) (ft)			-2,976	-3,328	-3,751
Formation top (relative to SL) (ft)			-1,858	-2,523	-2,723
Formation 39			Wells Creek dolomite (marker D)	Wells Creek dolomite (marker D)	High Bridge Group (Pecatonica Member of Camp Nelson Limestone) (marker B)
System or series			Middle and Upper Ordovician	Middle and Upper Ordovician	Upper Ordovician
Formation top (relative to KB) (ft)			-3,080	-3,435	-3,880
Formation top (relative to GL) (ft)			-3,070	-3,423	-3,851
Formation top (relative to SL) (ft)			-1,952	-2,618	-2,823

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	1	2	3	4	5
American Petroleum Institute well number	16–111–24576	16–211–09113	16–005–00000	16–239–21801	16–049–10287
Lease name	No. 1 Dupont Plant Disposal	No. 1 C.J. Morris	No. 1 Ben Bond	No. 1 Dudley Gaines	No. 1 Paul Adams and Clarence Long
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	452	763	760	852	930
Kelly bushing elevation (ft)	462	763	760	859	931
Measured from	KB (10 ft APD)	GL	GL	KB (7 ft APD)	KB (1 ft APD)
Drill depth (ft)	6,011	2,075	2,838	2,812	1,563
KB elevation - GL elevation (ft)	10	0	0	7	1
Formation 40					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 41					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 42					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 43					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section /–/.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	6	7	8	9	10
American Petroleum Institute well number	16–049–18142	16–173–11507	16–165–29846	16–175–28019	16–237–30520
Lease name	No. 1 M.W. Miller	No. 16–1 Alvery Potter	No. 1 Campbell	No. 1 C.K. Stacy Heirs	No. 1 Orville Banks
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	940	977	1,118	805	1,028
Kelly bushing elevation (ft)	949	989	1,128	817	1,057
Measured from	KB (9 ft APD)	KB (12 ft APD)	KB (10 ft APD)	KB (12 ft APD)	KB (29 ft APD)
Drill depth (ft)	3,425	4,481	6,787	7,587	12,323
KB elevation - GL elevation (ft)	9	12	10	12	29
Formation 40			St. Peter Sandstone	St. Peter Sandstone	High Bridge Group (lower member of Camp Nelson Limestone)
System or series			Middle Ordovician	Middle Ordovician	Middle and Upper Ordovician
Formation top (relative to KB) (ft)			-3,150	-3,520	-3,980
Formation top (relative to GL) (ft)			-3,140	-3,508	-3,951
Formation top (relative to SL) (ft)			-2,022	-2,703	-2,923
Formation 41			Beekmantown Dolomite	Beekmantown Dolomite	Wells Creek dolomite (marker C)
System or series			Lower Ordovician	Lower Ordovician	Middle and Upper Ordovician
Formation top (relative to KB) (ft)			-3,162	-3,540	-4,040
Formation top (relative to GL) (ft)			-3,152	-3,528	-4,011
Formation top (relative to SL) (ft)			-2,034	-2,723	-2,983
Formation 42			Rose Run Sandstone	Rose Run Sandstone	Wells Creek dolomite (marker D)
System or series			Upper Cambrian	Upper Cambrian	Middle and Upper Ordovician
Formation top (relative to KB) (ft)			-3,650	-4,050	-4,150
Formation top (relative to GL) (ft)			-3,640	-4,038	-4,121
Formation top (relative to SL) (ft)			-2,522	-3,233	-3,093
Formation 43			Copper Ridge Dolomite	Copper Ridge Dolomite	St. Peter Sandstone
System or series			Upper Cambrian	Upper Cambrian	Middle Ordovician
Formation top (relative to KB) (ft)			-3,866	-4,230	-4,230
Formation top (relative to GL) (ft)			-3,856	-4,218	-4,201
Formation top (relative to SL) (ft)			-2,738	-3,413	-3,173

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	1	2	3	4	5
American Petroleum Institute well number	16–111–24576	16–211–09113	16–005–00000	16–239–21801	16–049–10287
Lease name	No. 1 Dupont Plant Disposal	No. 1 C.J. Morris	No. 1 Ben Bond	No. 1 Dudley Gaines	No. 1 Paul Adams and Clarence Long
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	452	763	760	852	930
Kelly bushing elevation (ft)	462	763	760	859	931
Measured from	KB (10 ft APD)	GL	GL	KB (7 ft APD)	KB (1 ft APD)
Drill depth (ft)	6,011	2,075	2,838	2,812	1,563
KB elevation - GL elevation (ft)	10	0	0	7	1
Formation 44					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 45					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 46					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section /–/.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	6	7	8	9	10
American Petroleum Institute well number	16–049–18142	16–173–11507	16–165–29846	16–175–28019	16–237–30520
Lease name	No. 1 M.W. Miller	No. 16–1 Alvery Potter	No. 1 Campbell	No. 1 C.K. Stacy Heirs	No. 1 Orville Banks
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	940	977	1,118	805	1,028
Kelly bushing elevation (ft)	949	989	1,128	817	1,057
Measured from	KB (9 ft APD)	KB (12 ft APD)	KB (10 ft APD)	KB (12 ft APD)	KB (29 ft APD)
Drill depth (ft)	3,425	4,481	6,787	7,587	12,323
KB elevation - GL elevation (ft)	9	12	10	12	29
Formation 44			Copper Ridge Dolomite (marker X1)	Copper Ridge Dolomite (equivalent to B zone?) (marker X1)	Beekmantown Dolomite
System or series			Upper Cambrian	Upper Cambrian	Lower Ordovician
Formation top (relative to KB) (ft)			-4,200	-4,660	-4,355
Formation top (relative to GL) (ft)			-4,190	-4,648	-4,326
Formation top (relative to SL) (ft)			-3,072	-3,843	-3,298
Formation 45			Copper Ridge Dolomite (equivalent to B zone?) (marker X1)	Copper Ridge Dolomite (marker Y)	Rose Run Sandstone
System or series			Upper Cambrian	Upper Cambrian	Upper Cambrian
Formation top (relative to KB) (ft)			-4,304	-5,100	-4,942
Formation top (relative to GL) (ft)			-4,294	-5,088	-4,913
Formation top (relative to SL) (ft)			-3,176	-4,283	-3,885
Formation 46			Copper Ridge Dolomite (marker Y)	Maynardville Limestone of the Conasauga Group	Copper Ridge Dolomite
System or series			Upper Cambrian	Upper Cambrian	Upper Cambrian
Formation top (relative to KB) (ft)			-4,742	-5,296	-5,196
Formation top (relative to GL) (ft)			-4,732	-5,284	-5,167
Formation top (relative to SL) (ft)			-3,614	-4,479	-4,139

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	1	2	3	4	5
American Petroleum Institute well number	16–111–24576	16–211–09113	16–005–00000	16–239–21801	16–049–10287
Lease name	No. 1 Dupont Plant Disposal	No. 1 C.J. Morris	No. 1 Ben Bond	No. 1 Dudley Gaines	No. 1 Paul Adams and Clarence Long
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	452	763	760	852	930
Kelly bushing elevation (ft)	462	763	760	859	931
Measured from	KB (10 ft APD)	GL	GL	KB (7 ft APD)	KB (1 ft APD)
Drill depth (ft)	6,011	2,075	2,838	2,812	1,563
KB elevation - GL elevation (ft)	10	0	0	7	1
Formation 47					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 48					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 49					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section /–/'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	6	7	8	9	10
American Petroleum Institute well number	16–049–18142	16–173–11507	16–165–29846	16–175–28019	16–237–30520
Lease name	No. 1 M.W. Miller	No. 16–1 Alvery Potter	No. 1 Campbell	No. 1 C.K. Stacy Heirs	No. 1 Orville Banks
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	940	977	1,118	805	1,028
Kelly bushing elevation (ft)	949	989	1,128	817	1,057
Measured from	KB (9 ft APD)	KB (12 ft APD)	KB (10 ft APD)	KB (12 ft APD)	KB (29 ft APD)
Drill depth (ft)	3,425	4,481	6,787	7,587	12,323
KB elevation - GL elevation (ft)	9	12	10	12	29
Formation 47			Maynardville Limestone of the Conasauga Group	Nolichucky Shale of the Conasauga Group (shale)	Copper Ridge Dolomite (equivalent to B zone?) (marker X1)
System or series			Upper Cambrian	Upper Cambrian	Upper Cambrian
Formation top (relative to KB) (ft)			-4,940	-5,350	-5,550
Formation top (relative to GL) (ft)			-4,930	-5,338	-5,521
Formation top (relative to SL) (ft)			-3,812	-4,533	-4,493
Formation 48			Nolichucky Shale of the Conasauga Group	Nolichucky Shale (limestone)	Copper Ridge Dolomite (marker Y)
System or series			Upper Cambrian	Upper Cambrian	Upper Cambrian
Formation top (relative to KB) (ft)			-4,988	-5,437	-6,258
Formation top (relative to GL) (ft)			-4,978	-5,425	-6,229
Formation top (relative to SL) (ft)			-3,860	-4,620	-5,201
Formation 49			Nolichucky Shale (limestone)	Nolichucky Shale (shale)	Maynardville Limestone of the Conasauga Formation
System or series			Upper Cambrian	Upper Cambrian	Upper Cambrian
Formation top (relative to KB) (ft)			-5,083	-5,500	-6,620
Formation top (relative to GL) (ft)			-5,073	-5,488	-6,591
Formation top (relative to SL) (ft)			-3,955	-4,683	-5,563

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	1	2	3	4	5
American Petroleum Institute well number	16–111–24576	16–211–09113	16–005–00000	16–239–21801	16–049–10287
Lease name	No. 1 Dupont Plant Disposal	No. 1 C.J. Morris	No. 1 Ben Bond	No. 1 Dudley Gaines	No. 1 Paul Adams and Clarence Long
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	452	763	760	852	930
Kelly bushing elevation (ft)	462	763	760	859	931
Measured from	KB (10 ft APD)	GL	GL	KB (7 ft APD)	KB (1 ft APD)
Drill depth (ft)	6,011	2,075	2,838	2,812	1,563
KB elevation - GL elevation (ft)	10	0	0	7	1
Formation 50					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 51					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 52					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	6	7	8	9	10
American Petroleum Institute well number	16–049–18142	16–173–11507	16–165–29846	16–175–28019	16–237–30520
Lease name	No. 1 M.W. Miller	No. 16–1 Alvery Potter	No. 1 Campbell	No. 1 C.K. Stacy Heirs	No. 1 Orville Banks
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	940	977	1,118	805	1,028
Kelly bushing elevation (ft)	949	989	1,128	817	1,057
Measured from	KB (9 ft APD)	KB (12 ft APD)	KB (10 ft APD)	KB (12 ft APD)	KB (29 ft APD)
Drill depth (ft)	3,425	4,481	6,787	7,587	12,323
KB elevation - GL elevation (ft)	9	12	10	12	29
Formation 50			Nolichucky Shale (shale)	Maryville Limestone of the Conasauga Group (dolomite and sandstone)	Nolichucky Shale of the Conasauga Group
System or series			Upper Cambrian	Middle and Upper Cambrian	Upper Cambrian
Formation top (relative to KB) (ft)			-5,146	-5,753	-6,690
Formation top (relative to GL) (ft)			-5,136	-5,741	-6,661
Formation top (relative to SL) (ft)			-4,018	-4,936	-5,633
Formation 51			Maryville Limestone of the Conasauga Group	Maryville Limestone of the Conasauga Group (limestone and sandstone)	Nolichucky Shale (limestone)
System or series			Middle and Upper Cambrian	Middle and Upper Cambrian	Upper Cambrian
Formation top (relative to KB) (ft)			-5,442	-6,000	-6,720
Formation top (relative to GL) (ft)			-5,432	-5,988	-6,691
Formation top (relative to SL) (ft)			-4,314	-5,183	-5,663
Formation 52			Rogersville Shale(?) of the Conasauga Group	Rogersville Shale(?) of the Conasauga Group	Nolichucky Shale (shale)
System or series			Middle Cambrian	Middle Cambrian	Upper Cambrian
Formation top (relative to KB) (ft)			-5,743	-6,170	-6,770
Formation top (relative to GL) (ft)			-5,733	-6,158	-6,741
Formation top (relative to SL) (ft)			-4,615	-5,353	-5,713

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	1	2	3	4	5
American Petroleum Institute well number	16–111–24576	16–211–09113	16–005–00000	16–239–21801	16–049–10287
Lease name	No. 1 Dupont Plant Disposal	No. 1 C.J. Morris	No. 1 Ben Bond	No. 1 Dudley Gaines	No. 1 Paul Adams and Clarence Long
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	452	763	760	852	930
Kelly bushing elevation (ft)	462	763	760	859	931
Measured from	KB (10 ft APD)	GL	GL	KB (7 ft APD)	KB (1 ft APD)
Drill depth (ft)	6,011	2,075	2,838	2,812	1,563
KB elevation - GL elevation (ft)	10	0	0	7	1
Formation 53					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 54					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 55					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 56					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section /–/.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	6	7	8	9	10
American Petroleum Institute well number	16–049–18142	16–173–11507	16–165–29846	16–175–28019	16–237–30520
Lease name	No. 1 M.W. Miller	No. 16–1 Alvery Potter	No. 1 Campbell	No. 1 C.K. Stacy Heirs	No. 1 Orville Banks
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	940	977	1,118	805	1,028
Kelly bushing elevation (ft)	949	989	1,128	817	1,057
Measured from	KB (9 ft APD)	KB (12 ft APD)	KB (10 ft APD)	KB (12 ft APD)	KB (29 ft APD)
Drill depth (ft)	3,425	4,481	6,787	7,587	12,323
KB elevation - GL elevation (ft)	9	12	10	12	29
Formation 53			Rome Formation	Rome Formation	Nolichucky Shale (limestone)
System or series			Lower and Middle Cambrian	Lower and Middle Cambrian	Upper Cambrian
Formation top (relative to KB) (ft)			-5,810	-6,274	-6,890
Formation top (relative to GL) (ft)			-5,800	-6,262	-6,861
Formation top (relative to SL) (ft)			-4,682	-5,457	-5,833
Formation 54			Shady Dolomite	Shady Dolomite	Nolichucky Shale (shale)
System or series			Lower Cambrian	Lower Cambrian	Upper Cambrian
Formation top (relative to KB) (ft)			-6,652	-7,368	-7,198
Formation top (relative to GL) (ft)			-6,642	-7,356	-7,169
Formation top (relative to SL) (ft)			-5,524	-6,551	-6,141
Formation 55			Amphibolite schist	Granite and (or) gneiss	Maryville Limestone of the Conasauga Group
System or series			Mesoproterozoic	Mesoproterozoic	Middle and Upper Cambrian
Formation top (relative to KB) (ft)			-6,710	-7,460	-7,612
Formation top (relative to GL) (ft)			-6,700	-7,448	-7,583
Formation top (relative to SL) (ft)			-5,582	-6,643	-6,555
Formation 56					Maryville Limestone of the Conasauga Group (shale)
System or series					Middle and Upper Cambrian
Formation top (relative to KB) (ft)					-7,850
Formation top (relative to GL) (ft)					-7,821
Formation top (relative to SL) (ft)					-6,793

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	1	2	3	4	5
American Petroleum Institute well number	16–111–24576	16–211–09113	16–005–00000	16–239–21801	16–049–10287
Lease name	No. 1 Dupont Plant Disposal	No. 1 C.J. Morris	No. 1 Ben Bond	No. 1 Dudley Gaines	No. 1 Paul Adams and Clarence Long
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	452	763	760	852	930
Kelly bushing elevation (ft)	462	763	760	859	931
Measured from	KB (10 ft APD)	GL	GL	KB (7 ft APD)	KB (1 ft APD)
Drill depth (ft)	6,011	2,075	2,838	2,812	1,563
KB elevation - GL elevation (ft)	10	0	0	7	1
Formation 57					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 58					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 59					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section /–/'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	6	7	8	9	10
American Petroleum Institute well number	16–049–18142	16–173–11507	16–165–29846	16–175–28019	16–237–30520
Lease name	No. 1 M.W. Miller	No. 16–1 Alvery Potter	No. 1 Campbell	No. 1 C.K. Stacy Heirs	No. 1 Orville Banks
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	940	977	1,118	805	1,028
Kelly bushing elevation (ft)	949	989	1,128	817	1,057
Measured from	KB (9 ft APD)	KB (12 ft APD)	KB (10 ft APD)	KB (12 ft APD)	KB (29 ft APD)
Drill depth (ft)	3,425	4,481	6,787	7,587	12,323
KB elevation - GL elevation (ft)	9	12	10	12	29
Formation 57					Maryville Limestone of the Conasauga Group (limestone)
System or series					Middle and Upper Cambrian
Formation top (relative to KB) (ft)					-8,050
Formation top (relative to GL) (ft)					-8,021
Formation top (relative to SL) (ft)					-6,993
Formation 58					Rogersville Shale of the Conasauga Group
System or series					Middle Cambrian
Formation top (relative to KB) (ft)					-8,595
Formation top (relative to GL) (ft)					-8,566
Formation top (relative to SL) (ft)					-7,538
Formation 59					Conasauga Group (equivalent to Rutledge Limestone) (unnamed sandstone and shale)
System or series					Middle Cambrian
Formation top (relative to KB) (ft)					-9,000
Formation top (relative to GL) (ft)					-8,971
Formation top (relative to SL) (ft)					-7,943

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	1	2	3	4	5
American Petroleum Institute well number	16–111–24576	16–211–09113	16–005–00000	16–239–21801	16–049–10287
Lease name	No. 1 Dupont Plant Disposal	No. 1 C.J. Morris	No. 1 Ben Bond	No. 1 Dudley Gaines	No. 1 Paul Adams and Clarence Long
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	452	763	760	852	930
Kelly bushing elevation (ft)	462	763	760	859	931
Measured from	KB (10 ft APD)	GL	GL	KB (7 ft APD)	KB (1 ft APD)
Drill depth (ft)	6,011	2,075	2,838	2,812	1,563
KB elevation - GL elevation (ft)	10	0	0	7	1
Formation 60					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 61					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 62					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section /–/'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	6	7	8	9	10
American Petroleum Institute well number	16–049–18142	16–173–11507	16–165–29846	16–175–28019	16–237–30520
Lease name	No. 1 M.W. Miller	No. 16–1 Alvery Potter	No. 1 Campbell	No. 1 C.K. Stacy Heirs	No. 1 Orville Banks
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	940	977	1,118	805	1,028
Kelly bushing elevation (ft)	949	989	1,128	817	1,057
Measured from	KB (9 ft APD)	KB (12 ft APD)	KB (10 ft APD)	KB (12 ft APD)	KB (29 ft APD)
Drill depth (ft)	3,425	4,481	6,787	7,587	12,323
KB elevation - GL elevation (ft)	9	12	10	12	29
Formation 60					Conasauga Group (equivalent to Pumpkin Valley Shale) (unnamed shale and sandstone)
System or series					Middle Cambrian
Formation top (relative to KB) (ft)					-9,450
Formation top (relative to GL) (ft)					-9,421
Formation top (relative to SL) (ft)					-8,393
Formation 61					Conasauga Group (equivalent to Pumpkin Valley Shale) (unnamed shale and limestone)
System or series					Middle Cambrian
Formation top (relative to KB) (ft)					-9,550
Formation top (relative to GL) (ft)					-9,521
Formation top (relative to SL) (ft)					-8,493
Formation 62					Conasauga Group (equivalent to Pumpkin Valley Shale) (unnamed sandstone)
System or series					Middle Cambrian
Formation top (relative to KB) (ft)					-9,620
Formation top (relative to GL) (ft)					-9,591
Formation top (relative to SL) (ft)					-8,563

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	1	2	3	4	5
American Petroleum Institute well number	16–111–24576	16–211–09113	16–005–00000	16–239–21801	16–049–10287
Lease name	No. 1 Dupont Plant Disposal	No. 1 C.J. Morris	No. 1 Ben Bond	No. 1 Dudley Gaines	No. 1 Paul Adams and Clarence Long
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	452	763	760	852	930
Kelly bushing elevation (ft)	462	763	760	859	931
Measured from	KB (10 ft APD)	GL	GL	KB (7 ft APD)	KB (1 ft APD)
Drill depth (ft)	6,011	2,075	2,838	2,812	1,563
KB elevation - GL elevation (ft)	10	0	0	7	1
Formation 63					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 64					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 65					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 66					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section /–/.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	6	7	8	9	10
American Petroleum Institute well number	16–049–18142	16–173–11507	16–165–29846	16–175–28019	16–237–30520
Lease name	No. 1 M.W. Miller	No. 16–1 Alvery Potter	No. 1 Campbell	No. 1 C.K. Stacy Heirs	No. 1 Orville Banks
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	940	977	1,118	805	1,028
Kelly bushing elevation (ft)	949	989	1,128	817	1,057
Measured from	KB (9 ft APD)	KB (12 ft APD)	KB (10 ft APD)	KB (12 ft APD)	KB (29 ft APD)
Drill depth (ft)	3,425	4,481	6,787	7,587	12,323
KB elevation - GL elevation (ft)	9	12	10	12	29
Formation 63					Conasauga Group (equivalent to Pumpkin Valley Shale) (unnamed shale and sandstone)
System or series					Middle Cambrian
Formation top (relative to KB) (ft)					-9,718
Formation top (relative to GL) (ft)					-9,689
Formation top (relative to SL) (ft)					-8,661
Formation 64					Rome Formation (limestone)
System or series					Middle Cambrian
Formation top (relative to KB) (ft)					-9,860
Formation top (relative to GL) (ft)					-9,831
Formation top (relative to SL) (ft)					-8,803
Formation 65					Rome Formation (shale and limestone)
System or series					Lower(?) and Middle Cambrian
Formation top (relative to KB) (ft)					-10,194
Formation top (relative to GL) (ft)					-10,165
Formation top (relative to SL) (ft)					-9,137
Formation 66					Rome Formation (sandstone and shale)
System or series					Lower(?) and Middle Cambrian
Formation top (relative to KB) (ft)					-10,698
Formation top (relative to GL) (ft)					-10,669
Formation top (relative to SL) (ft)					-9,641

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	1	2	3	4	5
American Petroleum Institute well number	16–111–24576	16–211–09113	16–005–00000	16–239–21801	16–049–10287
Lease name	No. 1 Dupont Plant Disposal	No. 1 C.J. Morris	No. 1 Ben Bond	No. 1 Dudley Gaines	No. 1 Paul Adams and Clarence Long
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	452	763	760	852	930
Kelly bushing elevation (ft)	462	763	760	859	931
Measured from	KB (10 ft APD)	GL	GL	KB (7 ft APD)	KB (1 ft APD)
Drill depth (ft)	6,011	2,075	2,838	2,812	1,563
KB elevation - GL elevation (ft)	10	0	0	7	1
Formation 67					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 68					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 69					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 70					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	6	7	8	9	10
American Petroleum Institute well number	16–049–18142	16–173–11507	16–165–29846	16–175–28019	16–237–30520
Lease name	No. 1 M.W. Miller	No. 16–1 Alvery Potter	No. 1 Campbell	No. 1 C.K. Stacy Heirs	No. 1 Orville Banks
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	940	977	1,118	805	1,028
Kelly bushing elevation (ft)	949	989	1,128	817	1,057
Measured from	KB (9 ft APD)	KB (12 ft APD)	KB (10 ft APD)	KB (12 ft APD)	KB (29 ft APD)
Drill depth (ft)	3,425	4,481	6,787	7,587	12,323
KB elevation - GL elevation (ft)	9	12	10	12	29
Formation 67					Rome Formation (limestone and dolomite)
System or series					Lower(?) and Middle Cambrian
Formation top (relative to KB) (ft)					-11,420
Formation top (relative to GL) (ft)					-11,391
Formation top (relative to SL) (ft)					-10,363
Formation 68					Rome Formation (sandstone and shale)
System or series					Lower(?) and Middle Cambrian
Formation top (relative to KB) (ft)					-11,450
Formation top (relative to GL) (ft)					-11,421
Formation top (relative to SL) (ft)					-10,393
Formation 69					Rome Formation (limestone and dolomite)
System or series					Lower(?) and Middle Cambrian
Formation top (relative to KB) (ft)					-11,814
Formation top (relative to GL) (ft)					-11,785
Formation top (relative to SL) (ft)					-10,757
Formation 70					Rome Formation (shale and sandstone)
System or series					Lower(?) and Middle Cambrian
Formation top (relative to KB) (ft)					-11,870
Formation top (relative to GL) (ft)					-11,841
Formation top (relative to SL) (ft)					-10,813

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	1	2	3	4	5
American Petroleum Institute well number	16–111–24576	16–211–09113	16–005–00000	16–239–21801	16–049–10287
Lease name	No. 1 Dupont Plant Disposal	No. 1 C.J. Morris	No. 1 Ben Bond	No. 1 Dudley Gaines	No. 1 Paul Adams and Clarence Long
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	452	763	760	852	930
Kelly bushing elevation (ft)	462	763	760	859	931
Measured from	KB (10 ft APD)	GL	GL	KB (7 ft APD)	KB (1 ft APD)
Drill depth (ft)	6,011	2,075	2,838	2,812	1,563
KB elevation - GL elevation (ft)	10	0	0	7	1
Formation 71					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 72					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 73					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 74					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section /–/.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	6	7	8	9	10
American Petroleum Institute well number	16–049–18142	16–173–11507	16–165–29846	16–175–28019	16–237–30520
Lease name	No. 1 M.W. Miller	No. 16–1 Alvery Potter	No. 1 Campbell	No. 1 C.K. Stacy Heirs	No. 1 Orville Banks
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	940	977	1,118	805	1,028
Kelly bushing elevation (ft)	949	989	1,128	817	1,057
Measured from	KB (9 ft APD)	KB (12 ft APD)	KB (10 ft APD)	KB (12 ft APD)	KB (29 ft APD)
Drill depth (ft)	3,425	4,481	6,787	7,587	12,323
KB elevation - GL elevation (ft)	9	12	10	12	29
Formation 71					Shady Dolomite
System or series					Lower Cambrian
Formation top (relative to KB) (ft)					-12,053
Formation top (relative to GL) (ft)					-12,024
Formation top (relative to SL) (ft)					-10,996
Formation 72					Chilhowee Group (basal sandstone)
System or series					Lower Cambrian
Formation top (relative to KB) (ft)					-12,170
Formation top (relative to GL) (ft)					-12,141
Formation top (relative to SL) (ft)					-11,113
Formation 73					Granite and (or) gneiss
System or series					Mesoproterozoic
Formation top (relative to KB) (ft)					-12,248
Formation top (relative to GL) (ft)					-12,219
Formation top (relative to SL) (ft)					-11,191
Formation 74					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	1	2	3	4	5
American Petroleum Institute well number	16–111–24576	16–211–09113	16–005–00000	16–239–21801	16–049–10287
Lease name	No. 1 Dupont Plant Disposal	No. 1 C.J. Morris	No. 1 Ben Bond	No. 1 Dudley Gaines	No. 1 Paul Adams and Clarence Long
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	452	763	760	852	930
Kelly bushing elevation (ft)	462	763	760	859	931
Measured from	KB (10 ft APD)	GL	GL	KB (7 ft APD)	KB (1 ft APD)
Drill depth (ft)	6,011	2,075	2,838	2,812	1,563
KB elevation - GL elevation (ft)	10	0	0	7	1
Formation 75					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 76					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 77					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 78					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					

Appendix 1. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 1–10 in Cross Section /–/.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	6	7	8	9	10
American Petroleum Institute well number	16–049–18142	16–173–11507	16–165–29846	16–175–28019	16–237–30520
Lease name	No. 1 M.W. Miller	No. 16–1 Alvery Potter	No. 1 Campbell	No. 1 C.K. Stacy Heirs	No. 1 Orville Banks
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	940	977	1,118	805	1,028
Kelly bushing elevation (ft)	949	989	1,128	817	1,057
Measured from	KB (9 ft APD)	KB (12 ft APD)	KB (10 ft APD)	KB (12 ft APD)	KB (29 ft APD)
Drill depth (ft)	3,425	4,481	6,787	7,587	12,323
KB elevation - GL elevation (ft)	9	12	10	12	29
Formation 75					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 76					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 77					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					
Formation 78					
System or series					
Formation top (relative to KB) (ft)					
Formation top (relative to GL) (ft)					
Formation top (relative to SL) (ft)					

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section /–/'

Blank cells indicate no formation was encountered in the drill hole.

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section I–I'.

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	11	12	13	14	15
American Petroleum Institute well number	16–025–00745	16–071–27524	16–195–24577	16–195–18969	45–051–20238
Lease name	No. 8613T S.W. (B.) Williams	No. 1 Hall	No. 1 Stratton	No. 201 Kentland Coal and Coke Company	No. 20321–T Mullins Heirs
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	762	676.5	1,177	1,352.42	1,519
Kelly bushing elevation (ft)	774	700	1,199	1,360.42	1,536
Measured from	KB (12 ft APD)	KB (23.5 ft APD)	KB (22 ft APD)	KB (8 ft APD)	KB (17 ft APD)
Drill depth (ft)	11,130	13,035	12,471	4,990	9,374
KB elevation - GL elevation (ft)	12	23.5	22	8	17
Formation 1	Hyden Formation of the Breathitt Group	Pikeville Formation of the Breathitt Group	Pikeville Formation of the Breathitt Group	Pikeville Formation of the Breathitt Group	Norton Formation (shale and sandstone)
System or series	Lower Pennsylvanian	Lower Pennsylvanian	Lower Pennsylvanian	Lower Pennsylvanian	Lower Pennsylvanian
Formation top (relative to KB) (ft)	-12	-23.5	-22	-8	-17
Formation top (relative to GL) (ft)	0	0	0	0	0
Formation top (relative to SL) (ft)	762	676.5	1,177	1,352.42	1,519
Formation 2	Pikeville Formation of the Breathitt Group	Corbin Sandstone Member of the Grundy Formation	Corbin Sandstone Member of the Grundy Formation	Corbin Sandstone Member of the Grundy Formation (equivalent to Gladeville Sandstone)	Norton Formation (unnamed sandstone)
System or series	Lower Pennsylvanian	Lower Pennsylvanian	Lower Pennsylvanian	Lower Pennsylvanian	Lower Pennsylvanian
Formation top (relative to KB) (ft)	-100	-26	-421	-100	-180
Formation top (relative to GL) (ft)	-88	-2.5	-399	-92	-163
Formation top (relative to SL) (ft)	674	674	778	1,260.42	1,356
Formation 3	Corbin Sandstone Member of the Grundy Formation	Grundy Formation of the Breathitt Group (coal-bearing lower part)	Grundy Formation of the Breathitt Group (coal-bearing lower part)	Grundy Formation of the Breathitt Group (coal-bearing shale)	Norton Formation (shale and sandstone)
System or series	Lower Pennsylvanian	Lower Pennsylvanian	Lower Pennsylvanian	Lower Pennsylvanian	Lower Pennsylvanian
Formation top (relative to KB) (ft)	-383	-220	-664	-275	-294
Formation top (relative to GL) (ft)	-371	-196.5	-642	-267	-277
Formation top (relative to SL) (ft)	391	480	535	1,085.42	1,242

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section /–/’.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	16	17	18	19
American Petroleum Institute well number	45–027–20147	45–027–04032	45–167–20256	45–169–19690
Lease name	No. 9781–T Pittston Company	No. 9722–T John W. Pobst and others	No. 1 N.R. Price	No. 1 E.D. Smith
Permanent datum	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	1,567.97	1,670.86	2,205	1,456.30
Kelly bushing elevation (ft)	1,579.97	1,682.86	2,238	1,467.50
Measured from	KB (12 ft APD)	KB (12 ft APD)	KB (33 ft APD)	KB (11.2 ft APD)
Drill depth (ft)	6,798	7,299	17,000	7,222
KB elevation - GL elevation (ft)	12	12	33	11.2
Formation 1	Norton Formation (shale and sandstone)	Norton Formation (shale and sandstone)	Copper Ridge Dolomite of the Knox Group	Gasper Limestone of the Greenbrier Group
System or series	Lower Pennsylvanian	Lower Pennsylvanian	Upper Cambrian	Upper Mississippian
Formation top (relative to KB) (ft)	-12	-12	-33	-11.2
Formation top (relative to GL) (ft)	0	0	0	0
Formation top (relative to SL) (ft)	1,567.97	1,670.86	2,205	1,456.30
Formation 2	Norton Formation (unnamed sandstone)	Norton Formation (McClure Sandstone Member) (equivalent to Bee Rock Sandstone)	Maynardville Limestone	Gasper Limestone of the Greenbrier Group (equivalent to Taggard Shale?)
System or series	Lower Pennsylvanian	Lower Pennsylvanian	Upper Cambrian	Upper Mississippian
Formation top (relative to KB) (ft)	-120	-235	-160	-815
Formation top (relative to GL) (ft)	-108	-223	-127	-803.8
Formation top (relative to SL) (ft)	1,459.97	1,447.86	2,078	652.5
Formation 3	Norton Formation (shale and sandstone)	Norton Formation (shale and sandstone)	Nolichucky Shale	Ste. Genevieve Limestone of the Greenbrier Group (middle sandstone and siltstone)
System or series	Lower Pennsylvanian	Lower Pennsylvanian	Upper Cambrian	Middle and Upper Mississippian
Formation top (relative to KB) (ft)	-196	-372	-390	-1,030
Formation top (relative to GL) (ft)	-184	-360	-357	-1,019
Formation top (relative to SL) (ft)	1,383.97	1,310.86	1,848	437.5

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	11	12	13	14	15
American Petroleum Institute well number	16–025–00745	16–071–27524	16–195–24577	16–195–18969	45–051–20238
Lease name	No. 8613T S.W. (B.) Williams	No. 1 Hall	No. 1 Stratton	No. 201 Kentland Coal and Coke Company	No. 20321–T Mullins Heirs
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	762	676.5	1,177	1,352.42	1,519
Kelly bushing elevation (ft)	774	700	1,199	1,360.42	1,536
Measured from	KB (12 ft APD)	KB (23.5 ft APD)	KB (22 ft APD)	KB (8 ft APD)	KB (17 ft APD)
Drill depth (ft)	11,130	13,035	12,471	4,990	9,374
KB elevation - GL elevation (ft)	12	23.5	22	8	17
Formation 4	Grundy Formation of the Breathitt Group (coal-bearing lower part)	Bee Rock Sandstone of the Breathitt Group	Bee Rock Sandstone of the Breathitt Group	Grundy Formation of the Breathitt Group (equivalent to unnamed sandstone of Norton Formation?) (Hazel Patch sandstone?) (unnamed sandstone)	Bee Rock Member of Lee Formation (upper quartzarenite member of Mitchell, 1982)
System or series	Lower Pennsylvanian	Lower Pennsylvanian	Lower Pennsylvanian	Lower Pennsylvanian	Lower Pennsylvanian
Formation top (relative to KB) (ft)	-525	-485	-830	-425	-398
Formation top (relative to GL) (ft)	-513	-461.5	-808	-417	-381
Formation top (relative to SL) (ft)	249	215	369	935.42	1,138
Formation 5	Bee Rock Sandstone of the Breathitt Group	Alvy Creek Formation of the Breathitt Group	Alvy Creek Formation of the Breathitt Group	Grundy Formation of the Breathitt Group (coal-bearing shale and sandstone)	Hensley Member of Lee Formation (shale and sandstone)
System or series	Lower Pennsylvanian	Lower Pennsylvanian	Lower Pennsylvanian	Lower Pennsylvanian	Lower Pennsylvanian
Formation top (relative to KB) (ft)	-670	-650	-1,110	-620	-684
Formation top (relative to GL) (ft)	-658	-626.5	-1,088	-612	-667
Formation top (relative to SL) (ft)	104	50	89	740.42	852

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section /–/'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	16	17	18	19
American Petroleum Institute well number	45–027–20147	45–027–04032	45–167–20256	45–169–19690
Lease name	No. 9781–T Pittston Company	No. 9722–T John W. Pobst and others	No. 1 N.R. Price	No. 1 E.D. Smith
Permanent datum	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	1,567.97	1,670.86	2,205	1,456.30
Kelly bushing elevation (ft)	1,579.97	1,682.86	2,238	1,467.50
Measured from	KB (12 ft APD)	KB (12 ft APD)	KB (33 ft APD)	KB (11.2 ft APD)
Drill depth (ft)	6,798	7,299	17,000	7,222
KB elevation - GL elevation (ft)	12	12	33	11.2
Formation 4	Bee Rock Member of Lee Formation (upper quartzarenite member of Mitchell, 1982)	Middlesboro Member of Lee Formation (equivalent to Sewanee Sandstone) (middle quartzarenite member of Mitchell (1982) and upper quartzarenite of Nolde (1994)) (upper sandstone)	Honaker Dolomite (probable thrust fault near 1,200 ft)	Ste. Genevieve Limestone of the Greenbrier Group (limestone)
System or series	Lower Pennsylvanian	Lower Pennsylvanian	Middle and Upper Cambrian	Middle and Upper Mississippian
Formation top (relative to KB) (ft)	-360	-800	-870	-1,670
Formation top (relative to GL) (ft)	-348	-788	-837	-1,658.8
Formation top (relative to SL) (ft)	1,219.97	882.86	1,368	-202.5
Formation 5	Hensley Member of Lee Formation (shale and sandstone)	Middlesboro Member of Lee Formation (equivalent to Bottom Creek Formation) (sandstone and shale)	Rome Formation (probable thrust fault near 2,250 ft below GL)	Hillsdale Limestone of the Greenbrier Group
System or series	Lower Pennsylvanian	Lower Pennsylvanian	Lower(?) and Middle Cambrian	Upper Mississippian
Formation top (relative to KB) (ft)	-608	-1,013	-1,950	-2,327
Formation top (relative to GL) (ft)	-596	-1,001	-1,917	-2,315.8
Formation top (relative to SL) (ft)	971.97	669.86	288	-859.5

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	11	12	13	14	15
American Petroleum Institute well number	16–025–00745	16–071–27524	16–195–24577	16–195–18969	45–051–20238
Lease name	No. 8613T S.W. (B.) Williams	No. 1 Hall	No. 1 Stratton	No. 201 Kentland Coal and Coke Company	No. 20321–T Mullins Heirs
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	762	676.5	1,177	1,352.42	1,519
Kelly bushing elevation (ft)	774	700	1,199	1,360.42	1,536
Measured from	KB (12 ft APD)	KB (23.5 ft APD)	KB (22 ft APD)	KB (8 ft APD)	KB (17 ft APD)
Drill depth (ft)	11,130	13,035	12,471	4,990	9,374
KB elevation - GL elevation (ft)	12	23.5	22	8	17
Formation 6	Pennington Formation	Sewanee Sandstone of the Breathitt Group	Sewanee Sandstone of the Breathitt Group	Bee Rock Sandstone of the Breathitt Group	Middlesboro Member of Lee Formation (equivalent to Sewanee Sandstone) (middle quartzarenite member of Mitchell (1982) and upper quartzarenite of Nolde (1994)) (upper sandstone)
System or series	Upper Mississippian	Lower Pennsylvanian	Lower Pennsylvanian	Lower Pennsylvanian	Lower Pennsylvanian
Formation top (relative to KB) (ft)	-860	-790	-1,170	-741	-908
Formation top (relative to GL) (ft)	-848	-766.5	-1,148	-733	-891
Formation top (relative to SL) (ft)	-86	-90	29	619.42	628
Formation 7	Newman Limestone (upper part) (equivalent to Bluefield Formation)	Pennington Formation (equivalent to Pride Shale Member of the Bluestone Formation) (black shale)	Pennington Formation (equivalent to Pride Shale Member of the Bluestone Formation) (gray shale)	Alvy Creek Formation of the Breathitt Group	Middlesboro Member of Lee Formation (equivalent to Bottom Creek Formation) (sandstone and shale)
System or series	Upper Mississippian	Upper Mississippian	Upper Mississippian	Lower Pennsylvanian	Lower Pennsylvanian
Formation top (relative to KB) (ft)	-1,032	-860	-1,470	-960	-1,350
Formation top (relative to GL) (ft)	-1,020	-836.5	-1,448	-952	-1,333
Formation top (relative to SL) (ft)	-258	-160	-271	400.42	186

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section /–/’.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	16	17	18	19
American Petroleum Institute well number	45–027–20147	45–027–04032	45–167–20256	45–169–19690
Lease name	No. 9781–T Pittston Company	No. 9722–T John W. Pobst and others	No. 1 N.R. Price	No. 1 E.D. Smith
Permanent datum	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	1,567.97	1,670.86	2,205	1,456.30
Kelly bushing elevation (ft)	1,579.97	1,682.86	2,238	1,467.50
Measured from	KB (12 ft APD)	KB (12 ft APD)	KB (33 ft APD)	KB (11.2 ft APD)
Drill depth (ft)	6,798	7,299	17,000	7,222
KB elevation - GL elevation (ft)	12	12	33	11.2
Formation 6	Middlesboro Member of Lee Formation (equivalent to Sewanee Sandstone) (middle quartzarenite member of Mitchell (1982) and upper quartzarenite of Nolde (1994)) (upper sandstone)	Middlesboro Member of Lee Formation (equivalent to Warren Point Sandstone) (lower quartzarenite member of Mitchell (1982) and lower quartzarenite of Nolde (1994)) (lower sandstone)	Copper Ridge Dolomite of the Knox Group (St. Paul (Hunter Valley) thrust fault at top)	Little Valley Limestone of the Greenbrier Group (limestone and shale)
System or series	Lower Pennsylvanian	Lower Pennsylvanian	Upper Cambrian	Middle Mississippian
Formation top (relative to KB) (ft)	-890	-1,552	-2,720	-2,593
Formation top (relative to GL) (ft)	-878	-1,540	-2,687	-2,581.8
Formation top (relative to SL) (ft)	689.97	130.86	-482	-1,125.5
Formation 7	Middlesboro Member of Lee Formation (equivalent to Bottom Creek Formation) (sandstone and shale)	Pocahontas Formation	Maynardville Limestone	Little Valley Limestone of the Greenbrier Group (siltstone)
System or series	Lower Pennsylvanian	Lower Pennsylvanian	Upper Cambrian	Middle Mississippian
Formation top (relative to KB) (ft)	-1,237	-1,750	-3,590	-3,210
Formation top (relative to GL) (ft)	-1,225	-1,738	-3,557	-3,198.8
Formation top (relative to SL) (ft)	342.97	-67.14	-1,352	-1,742.5

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	11	12	13	14	15
American Petroleum Institute well number	16–025–00745	16–071–27524	16–195–24577	16–195–18969	45–051–20238
Lease name	No. 8613T S.W. (B.) Williams	No. 1 Hall	No. 1 Stratton	No. 201 Kentland Coal and Coke Company	No. 20321–T Mullins Heirs
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	762	676.5	1,177	1,352.42	1,519
Kelly bushing elevation (ft)	774	700	1,199	1,360.42	1,536
Measured from	KB (12 ft APD)	KB (23.5 ft APD)	KB (22 ft APD)	KB (8 ft APD)	KB (17 ft APD)
Drill depth (ft)	11,130	13,035	12,471	4,990	9,374
KB elevation - GL elevation (ft)	12	23.5	22	8	17
Formation 8	Newman Limestone (equivalent to Greenbrier Limestone)	Pennington Formation (equivalent to Little Stone Gap Member of the Hinton Formation)	Pennington Formation (equivalent to Pride Shale Member of the Bluestone Formation) (black shale)	Sewanee Sandstone of the Breathitt Group	Middlesboro Member of Lee Formation (equivalent to Warren Point Sandstone) (lower quartzarenite member of Mitchell (1982) and lower quartzarenite of Nolde (1994)) (lower sandstone)
System or series	Middle and Upper Mississippian	Upper Mississippian	Upper Mississippian	Lower Pennsylvanian	Lower Pennsylvanian
Formation top (relative to KB) (ft)	-1,060	-930	-1,620	-1,143	-1,500
Formation top (relative to GL) (ft)	-1,048	-906.5	-1,598	-1,135	-1,483
Formation top (relative to SL) (ft)	-286	-230	-421	217.42	36
Formation 9	Borden Formation (siltstone)	Pennington Formation (equivalent to middle red member of the Hinton Formation)	Pennington Formation (equivalent to Tallery Sandstone Member of the Hinton Formation)	Bottom Creek Formation of the Breathitt Group	Pocahontas Formation
System or series	Lower and Middle Mississippian	Upper Mississippian	Upper Mississippian	Lower Pennsylvanian	Lower Pennsylvanian
Formation top (relative to KB) (ft)	-1,204	-970	-1,710	-1,450	-1,770
Formation top (relative to GL) (ft)	-1,192	-946.5	-1,688	-1,442	-1,753
Formation top (relative to SL) (ft)	-430	-270	-511	-89.58	-234

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	16	17	18	19
American Petroleum Institute well number	45–027–20147	45–027–04032	45–167–20256	45–169–19690
Lease name	No. 9781–T Pittston Company	No. 9722–T John W. Pobst and others	No. 1 N.R. Price	No. 1 E.D. Smith
Permanent datum	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	1,567.97	1,670.86	2,205	1,456.30
Kelly bushing elevation (ft)	1,579.97	1,682.86	2,238	1,467.50
Measured from	KB (12 ft APD)	KB (12 ft APD)	KB (33 ft APD)	KB (11.2 ft APD)
Drill depth (ft)	6,798	7,299	17,000	7,222
KB elevation - GL elevation (ft)	12	12	33	11.2
Formation 8	Middlesboro Member of Lee Formation (equivalent to Warren Point Sandstone) (lower quartzarenite member of Mitchell (1982) and lower quartzarenite of Nolde (1994)) (lower sandstone)	Pennington Group (red member of the Bluestone Formation)	Nolichucky Shale	Maccrady Shale
System or series	Lower Pennsylvanian	Upper Mississippian	Upper Cambrian	Middle Mississippian
Formation top (relative to KB) (ft)	-1,526	-2,036	-3,750	-3,489
Formation top (relative to GL) (ft)	-1,514	-2,024	-3,717	-3,477.8
Formation top (relative to SL) (ft)	53.97	-353.14	-1,512	-2,021.5
Formation 9	Pocahontas Formation	Pennington Group (Pride Shale Member of the Bluestone Formation) (black shale)	Honaker Formation (equivalent to Maryville Limestone?) (dolomite)	Price Formation (siltstone)
System or series	Lower Pennsylvanian	Upper Mississippian	Middle and Upper Cambrian	Lower Mississippian
Formation top (relative to KB) (ft)	-1,720	-2,320	-4,044	-3,888
Formation top (relative to GL) (ft)	-1,708	-2,308	-4,011	-3,876.8
Formation top (relative to SL) (ft)	-140.03	-637.14	-1,806	-2,420.5

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	11	12	13	14	15
American Petroleum Institute well number	16–025–00745	16–071–27524	16–195–24577	16–195–18969	45–051–20238
Lease name	No. 8613T S.W. (B.) Williams	No. 1 Hall	No. 1 Stratton	No. 201 Kentland Coal and Coke Company	No. 20321–T Mullins Heirs
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	762	676.5	1,177	1,352.42	1,519
Kelly bushing elevation (ft)	774	700	1,199	1,360.42	1,536
Measured from	KB (12 ft APD)	KB (23.5 ft APD)	KB (22 ft APD)	KB (8 ft APD)	KB (17 ft APD)
Drill depth (ft)	11,130	13,035	12,471	4,990	9,374
KB elevation - GL elevation (ft)	12	23.5	22	8	17
Formation 10	Borden Formation (silty shale)	Pennington Formation (equivalent to Stony Gap Sandstone Member of the Hinton Formation)	Pennington Formation (equivalent to Little Stone Gap Member of the Hinton Formation)	Warren Point Sandstone of the Breathitt Group	Pennington Group (red member of the Bluestone Formation)
System or series	Lower Mississippian	Upper Mississippian	Upper Mississippian	Lower Pennsylvanian	Upper Mississippian
Formation top (relative to KB) (ft)	-1,430	-1,098	-1,722	-1,550	-1,847
Formation top (relative to GL) (ft)	-1,418	-1,074.50	-1,700	-1,542	-1,830
Formation top (relative to SL) (ft)	-656	-398	-523	-189.58	-311
Formation 11	Sunbury Shale	Newman Limestone (equivalent to Bluefield Formation)	Pennington Formation (equivalent to middle red member of the Hinton Formation)	Pennington Formation (equivalent to Pride Shale Member of the Bluestone Formation) (black shale)	Pennington Group (Pride Shale Member of the Bluestone Formation) (black shale)
System or series	Lower Mississippian	Upper Mississippian	Upper Mississippian	Upper Mississippian	Upper Mississippian
Formation top (relative to KB) (ft)	-1,550	-1,230	-1,773	-1,976	-1,974
Formation top (relative to GL) (ft)	-1,538	-1,206.5	-1,751	-1,968	-1,957
Formation top (relative to SL) (ft)	-776	-530	-574	-615.58	-438
Formation 12	Berea Sandstone	Newman Limestone (equivalent to Greenbrier Limestone)	Pennington Formation (equivalent to Stony Gap Sandstone Member of the Hinton Formation)	Pennington Formation (equivalent to Tallery Sandstone Member of the Hinton Formation)	Pennington Group (Tallery Sandstone Member of the Hinton Formation)
System or series	Upper Devonian	Middle and Upper Mississippian	Upper Mississippian	Upper Mississippian	Upper Mississippian
Formation top (relative to KB) (ft)	-1,560	-1,330	-1,906	-2,115	-2,243
Formation top (relative to GL) (ft)	-1,548	-1,306.5	-1,884	-2,107	-2,226
Formation top (relative to SL) (ft)	-786	-630	-707	-754.58	-707

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section /–/’.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	16	17	18	19
American Petroleum Institute well number	45–027–20147	45–027–04032	45–167–20256	45–169–19690
Lease name	No. 9781–T Pittston Company	No. 9722–T John W. Pobst and others	No. 1 N.R. Price	No. 1 E.D. Smith
Permanent datum	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	1,567.97	1,670.86	2,205	1,456.30
Kelly bushing elevation (ft)	1,579.97	1,682.86	2,238	1,467.50
Measured from	KB (12 ft APD)	KB (12 ft APD)	KB (33 ft APD)	KB (11.2 ft APD)
Drill depth (ft)	6,798	7,299	17,000	7,222
KB elevation - GL elevation (ft)	12	12	33	11.2
Formation 10	Pennington Group (red member of the Bluestone Formation)	Pennington Group (Tallery Sandstone Member of the Hinton Formation)	Honaker Formation (limestone and shale)	Price Formation (silty shale)
System or series	Upper Mississippian	Upper Mississippian	Middle and Upper Cambrian	Lower and Middle Mississippian
Formation top (relative to KB) (ft)	-1,790	-2,572	-4,410	-4,525
Formation top (relative to GL) (ft)	-1,778	-2,560	-4,377	-4,513.8
Formation top (relative to SL) (ft)	-210.03	-889.14	-2,172	-3,057.5
Formation 11	Pennington Group (Pride Shale Member of the Bluestone Formation) (black shale)	Hinton Formation of the Pennington Group (shale)	Rome Formation (repeated by thrust faults at about 5,297, 6,157, and 6,377 ft relative to GL)	Big Stone Gap Shale (equivalent to Sunbury Shale)
System or series	Upper Mississippian	Upper Mississippian	Lower(?) and Middle Cambrian	Lower Mississippian
Formation top (relative to KB) (ft)	-1,978	-2,650	-4,620	-4,796
Formation top (relative to GL) (ft)	-1,966	-2,638	-4,587	-4,784.8
Formation top (relative to SL) (ft)	-398.03	-967.14	-2,382	-3,328.5
Formation 12	Pennington Group (Tallery Sandstone Member of the Hinton Formation)	Pennington Group (Little Stone Gap Member of the Hinton Formation)	Shady Dolomite (thrust fault at about 7,062 ft relative to GL)	Berea Sandstone
System or series	Upper Mississippian	Upper Mississippian	Lower Cambrian	Upper Devonian
Formation top (relative to KB) (ft)	-2,250	-2,672	-6,825	-4,807
Formation top (relative to GL) (ft)	-2,238	-2,660	-6,792	-4,795.8
Formation top (relative to SL) (ft)	-670.03	-989.14	-4,587	-3,339.5

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	11	12	13	14	15
American Petroleum Institute well number	16–025–00745	16–071–27524	16–195–24577	16–195–18969	45–051–20238
Lease name	No. 8613T S.W. (B.) Williams	No. 1 Hall	No. 1 Stratton	No. 201 Kentland Coal and Coke Company	No. 20321–T Mullins Heirs
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	762	676.5	1,177	1,352.42	1,519
Kelly bushing elevation (ft)	774	700	1,199	1,360.42	1,536
Measured from	KB (12 ft APD)	KB (23.5 ft APD)	KB (22 ft APD)	KB (8 ft APD)	KB (17 ft APD)
Drill depth (ft)	11,130	13,035	12,471	4,990	9,374
KB elevation - GL elevation (ft)	12	23.5	22	8	17
Formation 13	Bedford Shale and unnamed sandstone and siltstone	Borden Formation (equivalent to Maccrady Shale) (red shale)	Newman Limestone (equivalent to Bluefield Formation)	Pennington Formation (equivalent to middle red member of the Hinton Formation)	Pennington Group (Little Stone Gap Member of the Hinton Formation)
System or series	Upper Devonian	Middle Mississippian	Upper Mississippian	Upper Mississippian	Upper Mississippian
Formation top (relative to KB) (ft)	-1,593	-1,460	-2,040	-2,200	-2,346
Formation top (relative to GL) (ft)	-1,581	-1,436.5	-2,018	-2,192	-2,329
Formation top (relative to SL) (ft)	-819	-760	-841	-839.58	-810
Formation 14	Cleveland Member of the Ohio Shale	Borden Formation (equivalent to Price Formation) (siltstone)	Newman Limestone (equivalent to Greenbrier Limestone)	Pennington Formation (equivalent to Stony Gap Sandstone Member of the Hinton Formation)	Pennington Group (middle red member of the Hinton Formation)
System or series	Upper Devonian	Lower and Middle Mississippian	Middle and Upper Mississippian	Upper Mississippian	Upper Mississippian
Formation top (relative to KB) (ft)	-1,650	-1,506	-2,190	-2,533	-2,375
Formation top (relative to GL) (ft)	-1,638	-1,482.5	-2,168	-2,525	-2,358
Formation top (relative to SL) (ft)	-876	-806	-991	-1,172.58	-839
Formation 15	Three Lick Bed	Sunbury Shale	Borden Formation (equivalent to Maccrady Shale) (red shale)	Newman Limestone (equivalent to Bluefield Formation)	Pennington Group (Stony Gap Sandstone Member of the Hinton Formation)
System or series	Upper Devonian	Lower Mississippian	Middle Mississippian	Upper Mississippian	Upper Mississippian
Formation top (relative to KB) (ft)	-1,670	-1,740	-2,423	-2,663	-2,610
Formation top (relative to GL) (ft)	-1,658	-1,716.5	-2,401	-2,655	-2,593
Formation top (relative to SL) (ft)	-896	-1,040	-1,224	-1,302.58	-1,074

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section /–/'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number American Petroleum Institute well number	16 45–027–20147	17 45–027–04032	18 45–167–20256	19 45–169–19690
Lease name	No. 9781–T Pittston Company	No. 9722–T John W. Pobst and others	No. 1 N.R. Price	No. 1 E.D. Smith
Permanent datum	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	1,567.97	1,670.86	2,205	1,456.30
Kelly bushing elevation (ft)	1,579.97	1,682.86	2,238	1,467.50
Measured from	KB (12 ft APD)	KB (12 ft APD)	KB (33 ft APD)	KB (11.2 ft APD)
Drill depth (ft)	6,798	7,299	17,000	7,222
KB elevation - GL elevation (ft)	12	12	33	11.2
Formation 13	Pennington Group (Little Stone Gap Member of the Hinton Formation)	Pennington Group (middle red member of the Hinton Formation)	Copper Ridge Dolomite of the Knox Group (thrust fault at top)	Upper Devonian (undivided)
System or series	Upper Mississippian	Upper Mississippian	Upper Cambrian	Upper Devonian
Formation top (relative to KB) (ft)	-2,356	-2,726	-7,490	-4,815
Formation top (relative to GL) (ft)	-2,344	-2,714	-7,457	-4,803.8
Formation top (relative to SL) (ft)	-776.03	-1,043.14	-5,252	-3,347.5
Formation 14	Pennington Group (middle red member of the Hinton Formation)	Pennington Group (Stony Gap Sandstone Member of the Hinton Formation)	Maynardville Limestone (Pine Mountain thrust fault at bottom)	Huron Member of the Ohio Shale (lower part)
System or series	Upper Mississippian	Upper Mississippian	Upper Cambrian	Upper Devonian
Formation top (relative to KB) (ft)	-2,410	-3,080	-7,680	-5,908
Formation top (relative to GL) (ft)	-2,398	-3,068	-7,647	-5,896.8
Formation top (relative to SL) (ft)	-830.03	-1,397.14	-5,442	-4,440.5
Formation 15	Pennington Group (Stony Gap Sandstone Member of the Hinton Formation)	Bluefield Formation (gray shale and sandstone)	Complex fault zone (horse block?) (Marcellus Shale in bottom 10 ft)	Java Formation
System or series	Upper Mississippian	Upper Mississippian	Devonian	Upper Devonian
Formation top (relative to KB) (ft)	-2,640	-3,240	-7,897	-6,182
Formation top (relative to GL) (ft)	-2,628	-3,228	-7,864	-6,170.8
Formation top (relative to SL) (ft)	-1,060.03	-1,557.14	-5,659	-4,714.5

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	11	12	13	14	15
American Petroleum Institute well number	16–025–00745	16–071–27524	16–195–24577	16–195–18969	45–051–20238
Lease name	No. 8613T S.W. (B.) Williams	No. 1 Hall	No. 1 Stratton	No. 201 Kentland Coal and Coke Company	No. 20321–T Mullins Heirs
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	762	676.5	1,177	1,352.42	1,519
Kelly bushing elevation (ft)	774	700	1,199	1,360.42	1,536
Measured from	KB (12 ft APD)	KB (23.5 ft APD)	KB (22 ft APD)	KB (8 ft APD)	KB (17 ft APD)
Drill depth (ft)	11,130	13,035	12,471	4,990	9,374
KB elevation - GL elevation (ft)	12	23.5	22	8	17
Formation 16	Huron Member of the Ohio Shale (upper part)	Berea Sandstone	Borden Formation (equivalent to Price Formation) (siltstone)	Newman Limestone (equivalent to Greenbrier Limestone)	Bluefield Formation (limestone and black shale)
System or series	Upper Devonian	Upper Devonian	Lower and Middle Mississippian	Middle and Upper Mississippian	Upper Mississippian
Formation top (relative to KB) (ft)	-1,702	-1,819	-2,470	-2,829	-2,866
Formation top (relative to GL) (ft)	-1,690	-1,795.5	-2,448	-2,821	-2,849
Formation top (relative to SL) (ft)	-928	-1,119	-1,271	-1,468.58	-1,330
Formation 17	Chagrin Shale tongue	Bedford Shale and unnamed sandstone and siltstone	Borden Formation (equivalent to Price Formation) (silty shale)	Borden Formation (equivalent to Maccrady Shale) (red shale)	Greenbrier Limestone
System or series	Upper Devonian	Upper Devonian	Lower Mississippian	Middle Mississippian	Middle and Upper Mississippian
Formation top (relative to KB) (ft)	-1,730	-1,830	-2,710	-3,080	-3,000
Formation top (relative to GL) (ft)	-1,718	-1,806.5	-2,688	-3,072	-2,983
Formation top (relative to SL) (ft)	-956	-1,130	-1,511	-1,719.58	-1,464
Formation 18	Huron Member of the Ohio Shale (lower part)	Cleveland Member of the Ohio Shale	Sunbury Shale	Borden Formation (equivalent to Price Formation) (siltstone)	Maccrady Shale
System or series	Upper Devonian	Upper Devonian	Lower Mississippian	Lower and Middle Mississippian	Middle Mississippian
Formation top (relative to KB) (ft)	-1,823	-1,870	-2,908	-3,124	-3,380
Formation top (relative to GL) (ft)	-1,811	-1,846.5	-2,886	-3,116	-3,363
Formation top (relative to SL) (ft)	-1,049	-1,170	-1,709	-1,763.58	-1,844

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section /–/.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	16	17	18	19
American Petroleum Institute well number	45–027–20147	45–027–04032	45–167–20256	45–169–19690
Lease name	No. 9781–T Pittston Company	No. 9722–T John W. Pobst and others	No. 1 N.R. Price	No. 1 E.D. Smith
Permanent datum	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	1,567.97	1,670.86	2,205	1,456.30
Kelly bushing elevation (ft)	1,579.97	1,682.86	2,238	1,467.50
Measured from	KB (12 ft APD)	KB (12 ft APD)	KB (33 ft APD)	KB (11.2 ft APD)
Drill depth (ft)	6,798	7,299	17,000	7,222
KB elevation - GL elevation (ft)	12	12	33	11.2
Formation 16	Bluefield Formation (gray shale and sandstone)	Bluefield Formation (limestone and black shale)	Huntersville Chert	Angola Shale Member of the West Falls Formation
System or series	Upper Mississippian	Upper Mississippian	Middle Devonian	Upper Devonian
Formation top (relative to KB) (ft)	-2,900	-3,467	-8,008	-6,308
Formation top (relative to GL) (ft)	-2,888	-3,455	-7,975	-6,296.8
Formation top (relative to SL) (ft)	-1,320.03	-1,787.14	-5,770	-4,840.5
Formation 17	Bluefield Formation (limestone and black shale)	Greenbrier Limestone	Wildcat Valley Sandstone	Rhinestreet Shale Member of the West Falls Formation
System or series	Upper Mississippian	Middle and Upper Mississippian	Lower and Middle? Devonian	Upper Devonian
Formation top (relative to KB) (ft)	-3,087	-3,770	-8,121	-6,520
Formation top (relative to GL) (ft)	-3,075	-3,758	-8,088	-6,508.8
Formation top (relative to SL) (ft)	1,507.03	-2,087.14	-5,883	-5,052.5
Formation 18	Greenbrier Limestone	Maccrady Shale	Helderberg Group	Millboro Shale (equivalent to Marcellus Shale; possibly equivalent to Genesee Formation at top)
System or series	Middle and Upper Mississippian	Middle Mississippian	upper Silurian to Lower Devonian	Middle Devonian
Formation top (relative to KB) (ft)	-3,285	-4,169	-8,178	-6,686
Formation top (relative to GL) (ft)	-3,273	-4,157	-8,145	-6,674.8
Formation top (relative to SL) (ft)	-1,705.03	-2,486.14	-5,940	-5,218.5

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	11	12	13	14	15
American Petroleum Institute well number	16–025–00745	16–071–27524	16–195–24577	16–195–18969	45–051–20238
Lease name	No. 8613T S.W. (B.) Williams	No. 1 Hall	No. 1 Stratton	No. 201 Kentland Coal and Coke Company	No. 20321–T Mullins Heirs
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	762	676.5	1,177	1,352.42	1,519
Kelly bushing elevation (ft)	774	700	1,199	1,360.42	1,536
Measured from	KB (12 ft APD)	KB (23.5 ft APD)	KB (22 ft APD)	KB (8 ft APD)	KB (17 ft APD)
Drill depth (ft)	11,130	13,035	12,471	4,990	9,374
KB elevation - GL elevation (ft)	12	23.5	22	8	17
Formation 19	Java Formation	Three Lick Bed	Berea Sandstone	Borden Formation (equivalent to Price Formation) (silty shale)	Price Formation (siltstone)
System or series	Upper Devonian	Upper Devonian	Upper Devonian	Lower Mississippian	Lower and Middle Mississippian
Formation top (relative to KB) (ft)	-1,892	-2,002	-2,944	-3,350	-3,437
Formation top (relative to GL) (ft)	-1,880	-1,978.5	-2,922	-3,342	-3,420
Formation top (relative to SL) (ft)	-1,118	-1,302	-1,745	-1,989.58	-1,901
Formation 20	Salina Formation	Huron Member of the Ohio Shale (upper part)	Bedford Shale and unnamed sandstone and siltstone	Sunbury Shale	Price Formation (silty shale)
System or series	upper Silurian	Upper Devonian	Upper Devonian	Lower Mississippian	Lower Mississippian
Formation top (relative to KB) (ft)	-1,920	-2,040	-2,950	-3,608	-3,650
Formation top (relative to GL) (ft)	-1,908	-2,016.5	-2,928	-3,600	-3,633
Formation top (relative to SL) (ft)	-1,146	-1,340	-1,751	-2,247.58	-2,114
Formation 21	Lockport Dolomite	Chagrin Shale tongue (upper)	Cleveland Member of the Ohio Shale	Berea Sandstone	Sunbury Shale
System or series	lower and upper Silurian	Upper Devonian	Upper Devonian	Upper Devonian	Lower Mississippian
Formation top (relative to KB) (ft)	-2,036	-2,170	-3,052	-3,660	-3,930
Formation top (relative to GL) (ft)	-2,024	-2,146.5	-3,030	-3,652	-3,913
Formation top (relative to SL) (ft)	-1,262	-1,470	-1,853	-2,299.58	-2,394
Formation 22	Keefer (Big Six) Sandstone	Huron Member of the Ohio Shale (middle part)	Three Lick Bed	Bedford Shale and unnamed sandstone	Berea Sandstone
System or series	lower Silurian	Upper Devonian	Upper Devonian	Upper Devonian	Upper Devonian
Formation top (relative to KB) (ft)	-2,118	-2,200	-3,073	-3,732	-3,996
Formation top (relative to GL) (ft)	-2,106	-2,176.5	-3,051	-3,724	-3,979
Formation top (relative to SL) (ft)	-1,344	-1,500	-1,874	-2,371.58	-2,460

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section /–/'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	16	17	18	19
American Petroleum Institute well number	45–027–20147	45–027–04032	45–167–20256	45–169–19690
Lease name	No. 9781–T Pittston Company	No. 9722–T John W. Pobst and others	No. 1 N.R. Price	No. 1 E.D. Smith
Permanent datum	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	1,567.97	1,670.86	2,205	1,456.30
Kelly bushing elevation (ft)	1,579.97	1,682.86	2,238	1,467.50
Measured from	KB (12 ft APD)	KB (12 ft APD)	KB (33 ft APD)	KB (11.2 ft APD)
Drill depth (ft)	6,798	7,299	17,000	7,222
KB elevation - GL elevation (ft)	12	12	33	11.2
Formation 19	Maccrady Shale	Price Formation (siltstone)	Tonoloway Limestone	Huntersville Chert and Wildcat Valley Sandstone
System or series	Middle Mississippian	Lower and Middle Mississippian	upper Silurian	Lower and Middle Devonian
Formation top (relative to KB) (ft)	-3,675	-4,200	-8,240	-6,695
Formation top (relative to GL) (ft)	-3,663	-4,188	-8,207	-6,683.8
Formation top (relative to SL) (ft)	-2,095.03	-2,517.14	-6,002	-5,227.5
Formation 20	Price Formation (siltstone)	Price Formation (silty shale)	Wills Creek Formation	Keefer (Big Six) Sandstone
System or series	Lower and Middle Mississippian	Lower Mississippian	upper Silurian	lower Silurian
Formation top (relative to KB) (ft)	-3,718	-4,520	-8,370	-6,718
Formation top (relative to GL) (ft)	-3,706	-4,508	-8,337	-6,706.8
Formation top (relative to SL) (ft)	-2,138.03	-2,837.14	-6,132	-5,250.5
Formation 21	Price Formation (silty shale)	Sunbury Shale	Keefer (Big Six) Sandstone	Rose Hill Formation
System or series	Lower Mississippian	Lower Mississippian	lower Silurian	lower Silurian
Formation top (relative to KB) (ft)	-4,020	-4,807	-8,408	-6,745
Formation top (relative to GL) (ft)	-4,008	-4,795	-8,375	-6,733.8
Formation top (relative to SL) (ft)	-2,440.03	-3,124.14	-6,170	-5,277.5
Formation 22	Sunbury Shale	Berea Sandstone	Rose Hill Formation	Clinch Sandstone
System or series	Lower Mississippian	Upper Devonian	lower Silurian	lower Silurian
Formation top (relative to KB) (ft)	-4,331	-4,863	-8,444	-6,905
Formation top (relative to GL) (ft)	-4,319	-4,851	-8,411	-6,893.8
Formation top (relative to SL) (ft)	-2,751.03	-3,180.14	-6,206	-5,437.5

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	11	12	13	14	15
American Petroleum Institute well number	16–025–00745	16–071–27524	16–195–24577	16–195–18969	45–051–20238
Lease name	No. 8613T S.W. (B.) Williams	No. 1 Hall	No. 1 Stratton	No. 201 Kentland Coal and Coke Company	No. 20321–T Mullins Heirs
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	762	676.5	1,177	1,352.42	1,519
Kelly bushing elevation (ft)	774	700	1,199	1,360.42	1,536
Measured from	KB (12 ft APD)	KB (23.5 ft APD)	KB (22 ft APD)	KB (8 ft APD)	KB (17 ft APD)
Drill depth (ft)	11,130	13,035	12,471	4,990	9,374
KB elevation - GL elevation (ft)	12	23.5	22	8	17
Formation 23	Estill Shale Member of the Alger Shale	Chagrin Shale tongue (lower)	Huron Member of the Ohio Shale (upper part)	Cleveland Member of the Ohio Shale	Bedford Shale and unnamed sandstone and shale
System or series	lower Silurian	Upper Devonian	Upper Devonian	Upper Devonian	Upper Devonian
Formation top (relative to KB) (ft)	-2,165	-2,255	-3,263	-3,770	-4,050
Formation top (relative to GL) (ft)	-2,153	-2,231.5	-3,241	-3,762	-4,033
Formation top (relative to SL) (ft)	-1,391	-1,555	-2,064	-2,409.58	-2,514
Formation 24	Waco Member of the Alger Shale	Huron Member of the Ohio Shale (lower part)	Chagrin Shale tongue (upper)	Three Lick Bed	Cleveland Member of the Ohio Shale
System or series	lower Silurian	Upper Devonian	Upper Devonian	Upper Devonian	Upper Devonian
Formation top (relative to KB) (ft)	-2,373	-2,273	-3,362	-3,893	-4,085
Formation top (relative to GL) (ft)	-2,361	-2,249.5	-3,340	-3,885	-4,068
Formation top (relative to SL) (ft)	-1,599	-1,573	-2,163	-2,532.58	-2,549
Formation 25	Lulbegrud Shale Member of the Alger Shale	Java Formation	Huron Member of the Ohio Shale (middle part)	Huron Member of the Ohio Shale (upper part)	Upper Devonian undivided
System or series	lower Silurian	Upper Devonian	Upper Devonian	Upper Devonian	Upper Devonian
Formation top (relative to KB) (ft)	-2,380	-2,400	-3,520	-4,020	-4,158
Formation top (relative to GL) (ft)	-2,368	-2,376.5	-3,498	-4,012	-4,141
Formation top (relative to SL) (ft)	-1,606	-1,700	-2,321	-2,659.58	-2,622
Formation 26	Oldham Member of the Drowning Creek Formation	Angola Shale Member of the West Falls Formation	Chagrin Shale tongue (lower)	Chagrin Shale tongue	Huron Member of the Ohio Shale (lower part)
System or series	lower Silurian	Upper Devonian	Upper Devonian	Upper Devonian	Upper Devonian
Formation top (relative to KB) (ft)	-2,390	-2,477	-3,586	-4,110	-4,808
Formation top (relative to GL) (ft)	-2,378	-2,453.5	-3,564	-4,102	-4,791
Formation top (relative to SL) (ft)	-1,616	-1,777	-2,387	-2,749.58	-3,272

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	16	17	18	19
American Petroleum Institute well number	45–027–20147	45–027–04032	45–167–20256	45–169–19690
Lease name	No. 9781–T Pittston Company	No. 9722–T John W. Pobst and others	No. 1 N.R. Price	No. 1 E.D. Smith
Permanent datum	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	1,567.97	1,670.86	2,205	1,456.30
Kelly bushing elevation (ft)	1,579.97	1,682.86	2,238	1,467.50
Measured from	KB (12 ft APD)	KB (12 ft APD)	KB (33 ft APD)	KB (11.2 ft APD)
Drill depth (ft)	6,798	7,299	17,000	7,222
KB elevation - GL elevation (ft)	12	12	33	11.2
Formation 23	Berea Sandstone	Upper Devonian undivided	Cacapon Sandstone Member of the Rose Hill Formation	Juniata Formation
System or series	Upper Devonian	Upper Devonian	lower Silurian	Upper Ordovician
Formation top (relative to KB) (ft)	-4,380	-4,870	-8,636	-7,185
Formation top (relative to GL) (ft)	-4,368	-4,858	-8,603	-7,173.8
Formation top (relative to SL) (ft)	-2,800.03	-3,187.14	-6,398	-5,717.5
Formation 24	Bedford Shale and unnamed sandstone and shale	Huron Member of the Ohio Shale (lower part)	Clinch Sandstone (Poor Valley Ridge Member)	
System or series	Upper Devonian	Upper Devonian	lower Silurian	
Formation top (relative to KB) (ft)	-4,400	-5,770	-8,725	
Formation top (relative to GL) (ft)	-4,388	-5,758	-8,692	
Formation top (relative to SL) (ft)	-2,820.03	-4,087.14	-6,487	
Formation 25	Cleveland Member of the Ohio Shale	Java Formation	Hagan Shale Member of the Clinch Sandstone	
System or series	Upper Devonian	Upper Devonian	lower Silurian	
Formation top (relative to KB) (ft)	-4,470	-6,022	-8,840	
Formation top (relative to GL) (ft)	-4,458	-6,010	-8,807	
Formation top (relative to SL) (ft)	-2,890.03	-4,339.14	-6,602	
Formation 26	Upper Devonian undivided	Angola Shale Member of the West Falls Formation	Juniata Formation	
System or series	Upper Devonian	Upper Devonian	Upper Ordovician	
Formation top (relative to KB) (ft)	-4,580	-6,135	-8,894	
Formation top (relative to GL) (ft)	-4,568	-6,123	-8,861	
Formation top (relative to SL) (ft)	-3,000.03	-4,452.14	-6,656	

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	11	12	13	14	15
American Petroleum Institute well number	16–025–00745	16–071–27524	16–195–24577	16–195–18969	45–051–20238
Lease name	No. 8613T S.W. (B.) Williams	No. 1 Hall	No. 1 Stratton	No. 201 Kentland Coal and Coke Company	No. 20321–T Mullins Heirs
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	762	676.5	1,177	1,352.42	1,519
Kelly bushing elevation (ft)	774	700	1,199	1,360.42	1,536
Measured from	KB (12 ft APD)	KB (23.5 ft APD)	KB (22 ft APD)	KB (8 ft APD)	KB (17 ft APD)
Drill depth (ft)	11,130	13,035	12,471	4,990	9,374
KB elevation - GL elevation (ft)	12	23.5	22	8	17
Formation 27	Plum Creek Shale Member of the Drowning Creek Formation	Rhinestreet Shale Member of the West Falls Formation	Huron Member of the Ohio Shale (lower part)	Huron Member of the Ohio Shale (lower part)	Java Formation
System or series	lower Silurian	Upper Devonian	Upper Devonian	Upper Devonian	Upper Devonian
Formation top (relative to KB) (ft)	-2,416	-2,573	-3,616	-4,452	-5,055
Formation top (relative to GL) (ft)	-2,404	-2,549.5	-3,594	-4,444	-5,038
Formation top (relative to SL) (ft)	-1,642	-1,873	-2,417	-3,091.58	-3,519
Formation 28	Brassfield Member of the Drowning Creek Formation	Onondaga Limestone	Java Formation	Java Formation	Angola Shale Member of the West Falls Formation
System or series	lower Silurian	Middle Devonian	Upper Devonian	Upper Devonian	Upper Devonian
Formation top (relative to KB) (ft)	-2,460	-2,604	-3,777	-4,620	-5,166
Formation top (relative to GL) (ft)	-2,448	-2,580.5	-3,755	-4,612	-5,149
Formation top (relative to SL) (ft)	-1,686	-1,904	-2,578	-3,259.58	-3,630
Formation 29	Drakes Formation	Helderberg Limestone	Angola Shale Member of the West Falls Formation	Angola Shale Member of the West Falls Formation	Rhinestreet Shale Member of the West Falls Formation
System or series	Upper Ordovician	Lower Devonian	Upper Devonian	Upper Devonian	Upper Devonian
Formation top (relative to KB) (ft)	-2,500	-2,675	-3,875	-4,738	-5,350
Formation top (relative to GL) (ft)	-2,488	-2,651.5	-3,853	-4,730	-5,333
Formation top (relative to SL) (ft)	-1,726	-1,975	-2,676	-3,377.58	-3,814
Formation 30	Ashlock Formation	Salina Formation	Rhinestreet Shale Member of the West Falls Formation	Rhinestreet Shale Member of the West Falls Formation	Marcellus Shale
System or series	Upper Ordovician	upper Silurian	Upper Devonian	Upper Devonian	Middle Devonian
Formation top (relative to KB) (ft)	-2,670	-2,722	-3,994	-4,894	-5,554
Formation top (relative to GL) (ft)	-2,658	-2,698.5	-3,972	-4,886	-5,537
Formation top (relative to SL) (ft)	-1,896	-2,022	-2,795	-3,533.58	-4,018

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section /–/’.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	16	17	18	19
American Petroleum Institute well number	45–027–20147	45–027–04032	45–167–20256	45–169–19690
Lease name	No. 9781–T Pittston Company	No. 9722–T John W. Pobst and others	No. 1 N.R. Price	No. 1 E.D. Smith
Permanent datum	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	1,567.97	1,670.86	2,205	1,456.30
Kelly bushing elevation (ft)	1,579.97	1,682.86	2,238	1,467.50
Measured from	KB (12 ft APD)	KB (12 ft APD)	KB (33 ft APD)	KB (11.2 ft APD)
Drill depth (ft)	6,798	7,299	17,000	7,222
KB elevation - GL elevation (ft)	12	12	33	11.2
Formation 27	Huron Member of the Ohio Shale (lower part)	Rhinestreet Shale Member of the West Falls Formation	Reedsville Shale	
System or series	Upper Devonian	Upper Devonian	Upper Ordovician	
Formation top (relative to KB) (ft)	-5,260	-6,294	-9,132	
Formation top (relative to GL) (ft)	-5,248	-6,282	-9,099	
Formation top (relative to SL) (ft)	-3,680.03	-4,611.14	-6,894	
Formation 28	Java Formation	Marcellus Shale	Trenton Limestone	
System or series	Upper Devonian	Middle Devonian	Upper Ordovician	
Formation top (relative to KB) (ft)	-5,483	-6,400	-9,698	
Formation top (relative to GL) (ft)	-5,471	-6,388	-9,665	
Formation top (relative to SL) (ft)	-3,903.03	-4,717.14	-7,460	
Formation 29	Angola Shale Member of the West Falls Formation	Onondaga Limestone	Dickeyville Bentonite Bed	
System or series	Upper Devonian	Middle Devonian	Upper Ordovician	
Formation top (relative to KB) (ft)	-5,580	-6,410	-10,244	
Formation top (relative to GL) (ft)	-5,568	-6,398	-10,211	
Formation top (relative to SL) (ft)	-4,000.03	-4,727.14	-8,006	
Formation 30	Rhinestreet Shale Member of the West Falls Formation	Wildcat Valley Sandstone	“Elkport” Bentonite Bed	
System or series	Upper Devonian	Lower and Middle(?) Devonian	Upper Ordovician	
Formation top (relative to KB) (ft)	-5,750	-6,460	-10,305	
Formation top (relative to GL) (ft)	-5,738	-6,448	-10,272	
Formation top (relative to SL) (ft)	-4,170.03	-4,777.14	-8,067	

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	11	12	13	14	15
American Petroleum Institute well number	16–025–00745	16–071–27524	16–195–24577	16–195–18969	45–051–20238
Lease name	No. 8613T S.W. (B.) Williams	No. 1 Hall	No. 1 Stratton	No. 201 Kentland Coal and Coke Company	No. 20321–T Mullins Heirs
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	762	676.5	1,177	1,352.42	1,519
Kelly bushing elevation (ft)	774	700	1,199	1,360.42	1,536
Measured from	KB (12 ft APD)	KB (23.5 ft APD)	KB (22 ft APD)	KB (8 ft APD)	KB (17 ft APD)
Drill depth (ft)	11,130	13,035	12,471	4,990	9,374
KB elevation - GL elevation (ft)	12	23.5	22	8	17
Formation 31	Calloway Creek Limestone	Lockport Dolomite	Onondaga Limestone	Marcellus Shale	Onondaga Limestone
System or series	Upper Ordovician	lower and upper Silurian	Middle Devonian	Middle Devonian	Middle Devonian
Formation top (relative to KB) (ft)	-2,770	-2,900	-4,066	-4,970	-5,560
Formation top (relative to GL) (ft)	-2,758	-2,876.5	-4,044	-4,962	-5,543
Formation top (relative to SL) (ft)	-1,996	-2,200	-2,867	-3,609.58	-4,024
Formation 32	Garrard Siltstone	Keefer (Big Six) Sandstone	Oriskany Sandstone	Onondaga Limestone	Wildcat Valley Sandstone
System or series	Upper Ordovician	lower Silurian	Lower Devonian	Middle Devonian	Lower and Middle(?) Devonian
Formation top (relative to KB) (ft)	-2,868	-3,060	-4,100	-4,979	-5,608
Formation top (relative to GL) (ft)	-2,856	-3,036.5	-4,078	-4,971	-5,591
Formation top (relative to SL) (ft)	-2,094	-2,360	-2,901	-3,618.58	-4,072
Formation 33	Clays Ferry Formation	Rose Hill Formation	Helderberg Limestone		Helderberg Group
System or series	Upper Ordovician	lower Silurian	Lower Devonian		upper Silurian to Lower Devonian
Formation top (relative to KB) (ft)	-2,910	-3,135	-4,130		-5,642
Formation top (relative to GL) (ft)	-2,898	-3,111.5	-4,108		-5,625
Formation top (relative to SL) (ft)	-2,136	-2,435	-2,931		-4,106
Formation 34	Lexington Limestone	“Clinton” sandstone	Salina Formation		Tonoloway Limestone (equivalent to Salina Formation)
System or series	Upper Ordovician	lower Silurian	upper Silurian		upper Silurian
Formation top (relative to KB) (ft)	-3,115	-3,485	-4,150		-5,702
Formation top (relative to GL) (ft)	-3,103	-3,461.5	-4,128		-5,685
Formation top (relative to SL) (ft)	-2,341	-2,785	-2,951		-4,166

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section /–/.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	16	17	18	19
American Petroleum Institute well number	45–027–20147	45–027–04032	45–167–20256	45–169–19690
Lease name	No. 9781–T Pittston Company	No. 9722–T John W. Pobst and others	No. 1 N.R. Price	No. 1 E.D. Smith
Permanent datum	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	1,567.97	1,670.86	2,205	1,456.30
Kelly bushing elevation (ft)	1,579.97	1,682.86	2,238	1,467.50
Measured from	KB (12 ft APD)	KB (12 ft APD)	KB (33 ft APD)	KB (11.2 ft APD)
Drill depth (ft)	6,798	7,299	17,000	7,222
KB elevation - GL elevation (ft)	12	12	33	11.2
Formation 31	Marcellus Shale	Helderberg Group	Eggleston Limestone and Millbrig Bentonite Bed	
System or series	Middle Devonian	upper Silurian to Lower Devonian	Upper Ordovician	
Formation top (relative to KB) (ft)	-5,855	-6,500	-10,361	
Formation top (relative to GL) (ft)	-5,843	-6,488	-10,328	
Formation top (relative to SL) (ft)	-4,275.03	-4,817.14	-8,123	
Formation 32	Onondaga Limestone	Tonoloway Limestone (equivalent to Salina Formation)	Deicke Bentonite Bed	
System or series	Middle Devonian	upper Silurian	Upper Ordovician	
Formation top (relative to KB) (ft)	-5,876	-6,517	-10,420	
Formation top (relative to GL) (ft)	-5,864	-6,505	-10,387	
Formation top (relative to SL) (ft)	-4,296.03	-4,834.14	-8,182	
Formation 33	Wildcat Valley Sandstone	Lockport Dolomite equivalent	Witten Limestone	
System or series	Lower and Middle(?) Devonian	lower and upper Silurian	Upper Ordovician	
Formation top (relative to KB) (ft)	-5,900	-6,720	-10,531	
Formation top (relative to GL) (ft)	-5,888	-6,708	-10,498	
Formation top (relative to SL) (ft)	-4,320.03	-5,037.14	-8,293	
Formation 34	Helderberg Group	Keefer (Big Six) Sandstone	Hockett Bentonite Bed	
System or series	upper Silurian to Lower Devonian	lower Silurian	Upper Ordovician	
Formation top (relative to KB) (ft)	-5,965	-6,835	-10,560	
Formation top (relative to GL) (ft)	-5,953	-6,823	-10,527	
Formation top (relative to SL) (ft)	-4,385.03	-5,152.14	-8,322	

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	11	12	13	14	15
American Petroleum Institute well number	16–025–00745	16–071–27524	16–195–24577	16–195–18969	45–051–20238
Lease name	No. 8613T S.W. (B.) Williams	No. 1 Hall	No. 1 Stratton	No. 201 Kentland Coal and Coke Company	No. 20321–T Mullins Heirs
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	762	676.5	1,177	1,352.42	1,519
Kelly bushing elevation (ft)	774	700	1,199	1,360.42	1,536
Measured from	KB (12 ft APD)	KB (23.5 ft APD)	KB (22 ft APD)	KB (8 ft APD)	KB (17 ft APD)
Drill depth (ft)	11,130	13,035	12,471	4,990	9,374
KB elevation - GL elevation (ft)	12	23.5	22	8	17
Formation 35	Dickeyville Bentonite Bed	Drakes Formation	Lockport Dolomite		Lockport Dolomite
System or series	Upper Ordovician	Upper Ordovician	lower and upper Silurian		lower and upper Silurian
Formation top (relative to KB) (ft)	-3,490	-3,574	-4,380		-5,862
Formation top (relative to GL) (ft)	-3,478	-3,550.5	-4,358		-5,845
Formation top (relative to SL) (ft)	-2,716	-2,874	-3,181		-4,326
Formation 36	“Elkport” Bentonite Bed	Ashlock Formation	Keefer (Big Six) Sandstone		Keefer (Big Six) Sandstone
System or series	Upper Ordovician	Upper Ordovician	lower Silurian		lower Silurian
Formation top (relative to KB) (ft)	-3,524	-3,815	-4,486		-5,987
Formation top (relative to GL) (ft)	-3,512	-3,791.5	-4,464		-5,970
Formation top (relative to SL) (ft)	-2,750	-3,115	-3,287		-4,451
Formation 37	High Bridge Group (Tyrone Limestone) and Millbrig Bentonite Bed	Calloway Creek Limestone	Rose Hill Formation		Rose Hill Formation
System or series	Upper Ordovician	Upper Ordovician	lower Silurian		lower Silurian
Formation top (relative to KB) (ft)	-3,552	-3,890	-4,557		-6,020
Formation top (relative to GL) (ft)	-3,540	-3,866.5	-4,535		-6,003
Formation top (relative to SL) (ft)	-2,778	-3,190	-3,358		-4,484

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section /–/.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	16	17	18	19
American Petroleum Institute well number	45–027–20147	45–027–04032	45–167–20256	45–169–19690
Lease name	No. 9781–T Pittston Company	No. 9722–T John W. Pobst and others	No. 1 N.R. Price	No. 1 E.D. Smith
Permanent datum	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	1,567.97	1,670.86	2,205	1,456.30
Kelly bushing elevation (ft)	1,579.97	1,682.86	2,238	1,467.50
Measured from	KB (12 ft APD)	KB (12 ft APD)	KB (33 ft APD)	KB (11.2 ft APD)
Drill depth (ft)	6,798	7,299	17,000	7,222
KB elevation - GL elevation (ft)	12	12	33	11.2
Formation 35	Tonoloway Limestone (equivalent to Salina Formation)	Rose Hill Formation	Bowen Formation	
System or series	upper Silurian	lower Silurian	Upper Ordovician	
Formation top (relative to KB) (ft)	-5,990	-6,860	-10,695	
Formation top (relative to GL) (ft)	-5,978	-6,848	-10,662	
Formation top (relative to SL) (ft)	-4,410.03	-5,177.14	-8,457	
Formation 36	Lockport Dolomite	Cacapon Sandstone Member of the Rose Hill Formation	Wardell Formation	
System or series	lower and upper Silurian	lower Silurian	Upper Ordovician	
Formation top (relative to KB) (ft)	-6,180	-7,110	-10,750	
Formation top (relative to GL) (ft)	-6,168	-7,098	-10,717	
Formation top (relative to SL) (ft)	-4,600.03	-5,427.14	-8,512	
Formation 37	Keefer (Big Six) Sandstone	Clinch Sandstone (Poor Valley Ridge Member)	Benbolt Limestone	
System or series	lower Silurian	lower Silurian	Upper Ordovician	
Formation top (relative to KB) (ft)	-6,293	-7,168	-10,845	
Formation top (relative to GL) (ft)	-6,281	-7,156	-10,812	
Formation top (relative to SL) (ft)	-4,713.03	-5,485.14	-8,607	

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	11	12	13	14	15
American Petroleum Institute well number	16–025–00745	16–071–27524	16–195–24577	16–195–18969	45–051–20238
Lease name	No. 8613T S.W. (B.) Williams	No. 1 Hall	No. 1 Stratton	No. 201 Kentland Coal and Coke Company	No. 20321–T Mullins Heirs
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	762	676.5	1,177	1,352.42	1,519
Kelly bushing elevation (ft)	774	700	1,199	1,360.42	1,536
Measured from	KB (12 ft APD)	KB (23.5 ft APD)	KB (22 ft APD)	KB (8 ft APD)	KB (17 ft APD)
Drill depth (ft)	11,130	13,035	12,471	4,990	9,374
KB elevation - GL elevation (ft)	12	23.5	22	8	17
Formation 38	Deicke Bentonite Bed	Garrard Siltstone	Cacapon Sandstone Member of the Rose Hill Formation		Cacapon Sandstone Member of the Rose Hill Formation
System or series	Upper Ordovician	Upper Ordovician	lower Silurian		lower Silurian
Formation top (relative to KB) (ft)	-3,580	-4,020	-4,812		-6,253
Formation top (relative to GL) (ft)	-3,568	-3,996.5	-4,790		-6,236
Formation top (relative to SL) (ft)	-2,806	-3,320	-3,613		-4,717
Formation 39	High Bridge Group (upper member of Camp Nelson Limestone and Oregon Formation (undivided)) and Hockett Bentonite Bed	Clays Ferry Formation	“Clinton” sandstone		Clinch Sandstone (Poor Valley Ridge Member)
System or series	Upper Ordovician	Upper Ordovician	lower Silurian		lower Silurian
Formation top (relative to KB) (ft)	-3,676	-4,068	-4,847		-6,332
Formation top (relative to GL) (ft)	-3,664	-4,044.5	-4,825		-6,315
Formation top (relative to SL) (ft)	-2,902	-3,368	-3,648		-4,796
Formation 40	High Bridge Group (marker A)	Lexington Limestone	Drakes Formation		Hagan Shale Member of the Clinch Sandstone
System or series	Upper Ordovician	Upper Ordovician	Upper Ordovician		lower Silurian
Formation top (relative to KB) (ft)	-3,970	-4,304	-5,006		-6,438
Formation top (relative to GL) (ft)	-3,958	-4,280.5	-4,984		-6,421
Formation top (relative to SL) (ft)	-3,196	-3,604	-3,807		-4,902

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section /–/.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	16	17	18	19
American Petroleum Institute well number	45–027–20147	45–027–04032	45–167–20256	45–169–19690
Lease name	No. 9781–T Pittston Company	No. 9722–T John W. Pobst and others	No. 1 N.R. Price	No. 1 E.D. Smith
Permanent datum	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	1,567.97	1,670.86	2,205	1,456.30
Kelly bushing elevation (ft)	1,579.97	1,682.86	2,238	1,467.50
Measured from	KB (12 ft APD)	KB (12 ft APD)	KB (33 ft APD)	KB (11.2 ft APD)
Drill depth (ft)	6,798	7,299	17,000	7,222
KB elevation - GL elevation (ft)	12	12	33	11.2
Formation 38	Rose Hill Formation	Hagan Shale Member of the Clinch Sandstone	Benbolt Limestone (marker A)	
System or series	lower Silurian	lower Silurian	Upper Ordovician	
Formation top (relative to KB) (ft)	-6,347	-7,265	-11,025	
Formation top (relative to GL) (ft)	-6,335	-7,253	-10,992	
Formation top (relative to SL) (ft)	-4,767.03	-5,582.14	-8,787	
Formation 39	Cacapon Sandstone Member of the Rose Hill Formation		Benbolt Limestone (equivalent to Pecatonica Member of Camp Nelson Limestone) (marker B)	
System or series	lower Silurian		Upper Ordovician	
Formation top (relative to KB) (ft)	-6,570		-11,146	
Formation top (relative to GL) (ft)	-6,558		-11,113	
Formation top (relative to SL) (ft)	-4,990.03		-8,908	
Formation 40	Clinch Sandstone (Poor Valley Ridge Member)		Rockdell Limestone (argillaceous limestone)	
System or series	lower Silurian		Middle and Upper Ordovician	
Formation top (relative to KB) (ft)	-6,638		-11,232	
Formation top (relative to GL) (ft)	-6,626		-11,199	
Formation top (relative to SL) (ft)	-5,058.03		-8,994	

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	11	12	13	14	15
American Petroleum Institute well number	16–025–00745	16–071–27524	16–195–24577	16–195–18969	45–051–20238
Lease name	No. 8613T S.W. (B.) Williams	No. 1 Hall	No. 1 Stratton	No. 201 Kentland Coal and Coke Company	No. 20321–T Mullins Heirs
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	762	676.5	1,177	1,352.42	1,519
Kelly bushing elevation (ft)	774	700	1,199	1,360.42	1,536
Measured from	KB (12 ft APD)	KB (23.5 ft APD)	KB (22 ft APD)	KB (8 ft APD)	KB (17 ft APD)
Drill depth (ft)	11,130	13,035	12,471	4,990	9,374
KB elevation - GL elevation (ft)	12	23.5	22	8	17
Formation 41	High Bridge Group (Pecatonica Member of Camp Nelson Limestone) (marker B)	Dickeyville Bentonite Bed	Ashlock Formation		Juniata Formation
System or series	Upper Ordovician	Upper Ordovician	Upper Ordovician		Upper Ordovician
Formation top (relative to KB) (ft)	-4,080	-4,750	-5,235		-6,474
Formation top (relative to GL) (ft)	-4,068	-4,726.5	-5,213		-6,457
Formation top (relative to SL) (ft)	-3,306	-4,050	-4,036		-4,938
Formation 42	High Bridge Group (lower member of Camp Nelson Limestone)	“Elkport” Bentonite Bed	Calloway Creek Limestone		Reedsville Shale
System or series	Middle and Upper Ordovician	Upper Ordovician	Upper Ordovician		Upper Ordovician
Formation top (relative to KB) (ft)	-4,175	-4,793	-5,322		-6,670
Formation top (relative to GL) (ft)	-4,163	-4,769.5	-5,300		-6,653
Formation top (relative to SL) (ft)	-3,401	-4,093	-4,123		-5,134
Formation 43	High Bridge Group (lower member of Camp Nelson Limestone) (marker C)	High Bridge Group (Tyrone Limestone) and Millbrig Bentonite Bed	Garrard Siltstone		Trenton Limestone
System or series	Middle and Upper Ordovician	Upper Ordovician	Upper Ordovician		Upper Ordovician
Formation top (relative to KB) (ft)	-4,248	-4,837	-5,420		-7,220
Formation top (relative to GL) (ft)	-4,236	-4,813.5	-5,398		-7,203
Formation top (relative to SL) (ft)	-3,474	-4,137	-4,221		-5,684

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section /–/'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	16	17	18	19
American Petroleum Institute well number	45–027–20147	45–027–04032	45–167–20256	45–169–19690
Lease name	No. 9781–T Pittston Company	No. 9722–T John W. Pobst and others	No. 1 N.R. Price	No. 1 E.D. Smith
Permanent datum	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	1,567.97	1,670.86	2,205	1,456.30
Kelly bushing elevation (ft)	1,579.97	1,682.86	2,238	1,467.50
Measured from	KB (12 ft APD)	KB (12 ft APD)	KB (33 ft APD)	KB (11.2 ft APD)
Drill depth (ft)	6,798	7,299	17,000	7,222
KB elevation - GL elevation (ft)	12	12	33	11.2
Formation 41	Hagan Shale Member of the Clinch Sandstone		Rockdell Limestone (marker C)	
System or series	lower Silurian		Middle and Upper Ordovician	
Formation top (relative to KB) (ft)	-6,730		-11,304	
Formation top (relative to GL) (ft)	-6,718		-11,271	
Formation top (relative to SL) (ft)	-5,150.03		-9,066	
Formation 42	Juniata Formation		Rockdell Limestone (marker D)	
System or series	Upper Ordovician		Middle and Upper Ordovician	
Formation top (relative to KB) (ft)	-6,763		-11,398	
Formation top (relative to GL) (ft)	-6,751		-11,365	
Formation top (relative to SL) (ft)	-5,183.03		-9,160	
Formation 43			Elway Limestone, Five Oaks Limestone, and Lincolnshire Limestone	
System or series			Middle Ordovician	
Formation top (relative to KB) (ft)			-11,460	
Formation top (relative to GL) (ft)			-11,427	
Formation top (relative to SL) (ft)			-9,222	

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	11	12	13	14	15
American Petroleum Institute well number	16–025–00745	16–071–27524	16–195–24577	16–195–18969	45–051–20238
Lease name	No. 8613T S.W. (B.) Williams	No. 1 Hall	No. 1 Stratton	No. 201 Kentland Coal and Coke Company	No. 20321–T Mullins Heirs
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	762	676.5	1,177	1,352.42	1,519
Kelly bushing elevation (ft)	774	700	1,199	1,360.42	1,536
Measured from	KB (12 ft APD)	KB (23.5 ft APD)	KB (22 ft APD)	KB (8 ft APD)	KB (17 ft APD)
Drill depth (ft)	11,130	13,035	12,471	4,990	9,374
KB elevation - GL elevation (ft)	12	23.5	22	8	17
Formation 44	High Bridge Group (lower member of Camp Nelson Limestone) (marker D)	Deicke Bentonite Bed	Clays Ferry Formation		Dickeyville Bentonite Bed
System or series	Middle and Upper Ordovician	Upper Ordovician	Upper Ordovician		Upper Ordovician
Formation top (relative to KB) (ft)	-4,350	-4,870	-5,466		-7,735
Formation top (relative to GL) (ft)	-4,338	-4,846.5	-5,444		-7,718
Formation top (relative to SL) (ft)	-3,576	-4,170	-4,267		-6,199
Formation 45	Wells Creek dolomite	High Bridge Group (upper member of Camp Nelson Limestone and Oregon Formation (undivided)) and Hockett Bentonite Bed	Lexington Limestone		“Elkport” Bentonite Bed
System or series	Middle and Upper Ordovician	Upper Ordovician	Upper Ordovician		Upper Ordovician
Formation top (relative to KB) (ft)	-4,370	-4,996	-5,760		-7,786
Formation top (relative to GL) (ft)	-4,358	-4,972.5	-5,738		-7,769
Formation top (relative to SL) (ft)	-3,596	-4,296	-4,561		-6,250
Formation 46	St. Peter Sandstone	High Bridge Group (marker A)	Dickeyville Bentonite Bed		Eggleston Limestone and Millbrig Bentonite Bed
System or series	Middle Ordovician	Upper Ordovician	Upper Ordovician		Upper Ordovician
Formation top (relative to KB) (ft)	-4,510	-5,380	-6,186		-7,832
Formation top (relative to GL) (ft)	-4,498	-5,356.5	-6,164		-7,815
Formation top (relative to SL) (ft)	-3,736	-4,680	-4,987		-6,296

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	16	17	18	19
American Petroleum Institute well number	45–027–20147	45–027–04032	45–167–20256	45–169–19690
Lease name	No. 9781–T Pittston Company	No. 9722–T John W. Pobst and others	No. 1 N.R. Price	No. 1 E.D. Smith
Permanent datum	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	1,567.97	1,670.86	2,205	1,456.30
Kelly bushing elevation (ft)	1,579.97	1,682.86	2,238	1,467.50
Measured from	KB (12 ft APD)	KB (12 ft APD)	KB (33 ft APD)	KB (11.2 ft APD)
Drill depth (ft)	6,798	7,299	17,000	7,222
KB elevation - GL elevation (ft)	12	12	33	11.2
Formation 44			Blackford Formation (limestone)	
System or series			Middle Ordovician	
Formation top (relative to KB) (ft)			-11,602	
Formation top (relative to GL) (ft)			-11,569	
Formation top (relative to SL) (ft)			-9,364	
Formation 45			Blackford Formation (sandstone)	
System or series			Middle Ordovician	
Formation top (relative to KB) (ft)			-11,690	
Formation top (relative to GL) (ft)			-11,657	
Formation top (relative to SL) (ft)			-9,452	
Formation 46			Mascot Dolomite of the Knox Group	
System or series			Lower Ordovician	
Formation top (relative to KB) (ft)			-11,720	
Formation top (relative to GL) (ft)			-11,687	
Formation top (relative to SL) (ft)			-9,482	

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	11	12	13	14	15
American Petroleum Institute well number	16–025–00745	16–071–27524	16–195–24577	16–195–18969	45–051–20238
Lease name	No. 8613T S.W. (B.) Williams	No. 1 Hall	No. 1 Stratton	No. 201 Kentland Coal and Coke Company	No. 20321–T Mullins Heirs
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	762	676.5	1,177	1,352.42	1,519
Kelly bushing elevation (ft)	774	700	1,199	1,360.42	1,536
Measured from	KB (12 ft APD)	KB (23.5 ft APD)	KB (22 ft APD)	KB (8 ft APD)	KB (17 ft APD)
Drill depth (ft)	11,130	13,035	12,471	4,990	9,374
KB elevation - GL elevation (ft)	12	23.5	22	8	17
Formation 47	Beekmantown Dolomite	High Bridge Group (Pecatonica Member of Camp Nelson Limestone) (marker B)	“Elkport” Bentonite Bed		Deicke Bentonite Bed
System or series	Lower Ordovician	Upper Ordovician	Upper Ordovician		Upper Ordovician
Formation top (relative to KB) (ft)	-4,548	-5,520	-6,232		-7,880
Formation top (relative to GL) (ft)	-4,536	-5,496.5	-6,210		-7,863
Formation top (relative to SL) (ft)	-3,774	-4,820	-5,033		-6,344
Formation 48	Rose Run Sandstone	High Bridge Group (lower member of Camp Nelson Limestone)	High Bridge Group (Tyrone Limestone) and Millbrig Bentonite Bed		Witten Limestone
System or series	Upper Cambrian	Middle and Upper Ordovician	Upper Ordovician		Upper Ordovician
Formation top (relative to KB) (ft)	-5,250	-5,608	-6,270		-7,984
Formation top (relative to GL) (ft)	-5,238	-5,584.5	-6,248		-7,967
Formation top (relative to SL) (ft)	-4,476	-4,908	-5,071		-6,448
Formation 49	Copper Ridge Dolomite	High Bridge Group (lower member of Camp Nelson Limestone) (marker C)	Deicke Bentonite Bed		Hockett Bentonite Bed
System or series	Upper Cambrian	Middle and Upper Ordovician	Upper Ordovician		Upper Ordovician
Formation top (relative to KB) (ft)	-5,467	-5,678	-6,310		-8,008
Formation top (relative to GL) (ft)	-5,455	-5,654.5	-6,288		-7,991
Formation top (relative to SL) (ft)	-4,693	-4,978	-5,111		-6,472

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section /–/.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	16	17	18	19
American Petroleum Institute well number	45–027–20147	45–027–04032	45–167–20256	45–169–19690
Lease name	No. 9781–T Pittston Company	No. 9722–T John W. Pobst and others	No. 1 N.R. Price	No. 1 E.D. Smith
Permanent datum	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	1,567.97	1,670.86	2,205	1,456.30
Kelly bushing elevation (ft)	1,579.97	1,682.86	2,238	1,467.50
Measured from	KB (12 ft APD)	KB (12 ft APD)	KB (33 ft APD)	KB (11.2 ft APD)
Drill depth (ft)	6,798	7,299	17,000	7,222
KB elevation - GL elevation (ft)	12	12	33	11.2
Formation 47			Kingsport Formation of the Knox Group	
System or series			Lower Ordovician	
Formation top (relative to KB) (ft)			-11,990	
Formation top (relative to GL) (ft)			-11,957	
Formation top (relative to SL) (ft)			-9,752	
Formation 48			Chepultepec Dolomite of the Knox Group	
System or series			Lower Ordovician and Upper Cambrian	
Formation top (relative to KB) (ft)			-12,496	
Formation top (relative to GL) (ft)			-12,463	
Formation top (relative to SL) (ft)			-10,258	
Formation 49			Copper Ridge Dolomite of the Knox Group	
System or series			Upper Cambrian	
Formation top (relative to KB) (ft)			-12,740	
Formation top (relative to GL) (ft)			-12,707	
Formation top (relative to SL) (ft)			-10,502	

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	11	12	13	14	15
American Petroleum Institute well number	16–025–00745	16–071–27524	16–195–24577	16–195–18969	45–051–20238
Lease name	No. 8613T S.W. (B.) Williams	No. 1 Hall	No. 1 Stratton	No. 201 Kentland Coal and Coke Company	No. 20321–T Mullins Heirs
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	762	676.5	1,177	1,352.42	1,519
Kelly bushing elevation (ft)	774	700	1,199	1,360.42	1,536
Measured from	KB (12 ft APD)	KB (23.5 ft APD)	KB (22 ft APD)	KB (8 ft APD)	KB (17 ft APD)
Drill depth (ft)	11,130	13,035	12,471	4,990	9,374
KB elevation - GL elevation (ft)	12	23.5	22	8	17
Formation 50	Copper Ridge Dolomite (equivalent to B zone?) (marker X1)	High Bridge Group (lower member of Camp Nelson Limestone) (marker D)	High Bridge Group (upper member of Camp Nelson Limestone and Oregon Formation (undivided)) and Hockett Bentonite Bed		Bowen Formation
System or series	Upper Cambrian	Middle and Upper Ordovician	Upper Ordovician		Upper Ordovician
Formation top (relative to KB) (ft)	-5,814	-5,794	-6,440		-8,120
Formation top (relative to GL) (ft)	-5,802	-5,770.5	-6,418		-8,103
Formation top (relative to SL) (ft)	-5,040	-5,094	-5,241		-6,584
Formation 51	Copper Ridge Dolomite (marker Y)	High Bridge Group (lower member of Camp Nelson Limestone)	High Bridge Group (marker A)		Wardell Formation
System or series	Upper Cambrian	Middle and Upper Ordovician	Upper Ordovician		Upper Ordovician
Formation top (relative to KB) (ft)	-6,470	-5,833	-6,840		-8,180
Formation top (relative to GL) (ft)	-6,458	-5,809.5	-6,818		-8,163
Formation top (relative to SL) (ft)	-5,696	-5,133	-5,641		-6,644
Formation 52	Maynardville Limestone of the Conasauga Formation	Wells Creek dolomite	High Bridge Group (Pecatonica Member of Camp Nelson Limestone) (marker B)		Benbolt Limestone
System or series	Upper Cambrian	Middle and Upper Ordovician	Upper Ordovician		Upper Ordovician
Formation top (relative to KB) (ft)	-6,672	-5,957	-6,978		-8,258
Formation top (relative to GL) (ft)	-6,660	-5,933.5	-6,956		-8,241
Formation top (relative to SL) (ft)	-5,898	-5,257	-5,779		-6,722

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section /–/’.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	16	17	18	19
American Petroleum Institute well number	45–027–20147	45–027–04032	45–167–20256	45–169–19690
Lease name	No. 9781–T Pittston Company	No. 9722–T John W. Pobst and others	No. 1 N.R. Price	No. 1 E.D. Smith
Permanent datum	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	1,567.97	1,670.86	2,205	1,456.30
Kelly bushing elevation (ft)	1,579.97	1,682.86	2,238	1,467.50
Measured from	KB (12 ft APD)	KB (12 ft APD)	KB (33 ft APD)	KB (11.2 ft APD)
Drill depth (ft)	6,798	7,299	17,000	7,222
KB elevation - GL elevation (ft)	12	12	33	11.2
Formation 50			Maynardville Limestone of the Conasauga Group (marker Y)	
System or series			Upper Cambrian	
Formation top (relative to KB) (ft)			-13,506	
Formation top (relative to GL) (ft)			-13,473	
Formation top (relative to SL) (ft)			-11,268	
Formation 51			Nolichucky Shale of the Conasauga Group	
System or series			Upper Cambrian	
Formation top (relative to KB) (ft)			-13,662	
Formation top (relative to GL) (ft)			-13,629	
Formation top (relative to SL) (ft)			-11,424	
Formation 52			Nolichucky Shale (limestone)	
System or series			Upper Cambrian	
Formation top (relative to KB) (ft)			-13,800	
Formation top (relative to GL) (ft)			-13,767	
Formation top (relative to SL) (ft)			-11,562	

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	11	12	13	14	15
American Petroleum Institute well number	16–025–00745	16–071–27524	16–195–24577	16–195–18969	45–051–20238
Lease name	No. 8613T S.W. (B.) Williams	No. 1 Hall	No. 1 Stratton	No. 201 Kentland Coal and Coke Company	No. 20321–T Mullins Heirs
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	762	676.5	1,177	1,352.42	1,519
Kelly bushing elevation (ft)	774	700	1,199	1,360.42	1,536
Measured from	KB (12 ft APD)	KB (23.5 ft APD)	KB (22 ft APD)	KB (8 ft APD)	KB (17 ft APD)
Drill depth (ft)	11,130	13,035	12,471	4,990	9,374
KB elevation - GL elevation (ft)	12	23.5	22	8	17
Formation 53	Nolichucky Shale of the Conasauga Group	St. Peter Sandstone	High Bridge Group (lower member of Camp Nelson Limestone)		Benbolt Limestone (marker A)
System or series	Upper Cambrian	Middle Ordovician	Middle and Upper Ordovician		Upper Ordovician
Formation top (relative to KB) (ft)	-6,770	-6,018	-7,070		-8,422
Formation top (relative to GL) (ft)	-6,758	-5,994.5	-7,048		-8,405
Formation top (relative to SL) (ft)	-5,996	-5,318	-5,871		-6,886
Formation 54	Nolichucky Shale (limestone)	Beekmantown Dolomite	High Bridge Group (lower member of Camp Nelson Limestone) (marker C)		Benbolt Limestone (equivalent to Pecatonica Member of Camp Nelson Limestone) (marker B)
System or series	Upper Cambrian	Lower Ordovician	Middle and Upper Ordovician		Upper Ordovician
Formation top (relative to KB) (ft)	-6,800	-6,032	-7,135		-8,578
Formation top (relative to GL) (ft)	-6,788	-6,008.5	-7,113		-8,561
Formation top (relative to SL) (ft)	-6,026	-5,332	-5,936		-7,042
Formation 55	Nolichucky Shale (shale)	Rose Run Sandstone	High Bridge Group (lower member of Camp Nelson Limestone) (marker D)		Rockdell Limestone (argillaceous limestone)
System or series	Upper Cambrian	Upper Cambrian	Middle and Upper Ordovician		Middle and Upper Ordovician
Formation top (relative to KB) (ft)	-6,850	-6,515	-7,250		-8,660
Formation top (relative to GL) (ft)	-6,838	-6,491.5	-7,228		-8,643
Formation top (relative to SL) (ft)	-6,076	-5,815	-6,051		-7,124

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section /–/.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	16	17	18	19
American Petroleum Institute well number	45–027–20147	45–027–04032	45–167–20256	45–169–19690
Lease name	No. 9781–T Pittston Company	No. 9722–T John W. Pobst and others	No. 1 N.R. Price	No. 1 E.D. Smith
Permanent datum	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	1,567.97	1,670.86	2,205	1,456.30
Kelly bushing elevation (ft)	1,579.97	1,682.86	2,238	1,467.50
Measured from	KB (12 ft APD)	KB (12 ft APD)	KB (33 ft APD)	KB (11.2 ft APD)
Drill depth (ft)	6,798	7,299	17,000	7,222
KB elevation - GL elevation (ft)	12	12	33	11.2
Formation 53			Nolichucky Shale (shale)	
System or series			Upper Cambrian	
Formation top (relative to KB) (ft)			-13,830	
Formation top (relative to GL) (ft)			-13,797	
Formation top (relative to SL) (ft)			-11,592	
Formation 54			Nolichucky Shale (limestone)	
System or series			Upper Cambrian	
Formation top (relative to KB) (ft)			-13,902	
Formation top (relative to GL) (ft)			-13,869	
Formation top (relative to SL) (ft)			-11,664	
Formation 55			Nolichucky Shale (shale)	
System or series			Upper Cambrian	
Formation top (relative to KB) (ft)			-13,978	
Formation top (relative to GL) (ft)			-13,945	
Formation top (relative to SL) (ft)			-11,740	

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	11	12	13	14	15
American Petroleum Institute well number	16–025–00745	16–071–27524	16–195–24577	16–195–18969	45–051–20238
Lease name	No. 8613T S.W. (B.) Williams	No. 1 Hall	No. 1 Stratton	No. 201 Kentland Coal and Coke Company	No. 20321–T Mullins Heirs
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	762	676.5	1,177	1,352.42	1,519
Kelly bushing elevation (ft)	774	700	1,199	1,360.42	1,536
Measured from	KB (12 ft APD)	KB (23.5 ft APD)	KB (22 ft APD)	KB (8 ft APD)	KB (17 ft APD)
Drill depth (ft)	11,130	13,035	12,471	4,990	9,374
KB elevation - GL elevation (ft)	12	23.5	22	8	17
Formation 56	Nolichucky Shale (limestone)	Copper Ridge Dolomite	Wells Creek dolomite		Rockdell Limestone (marker C)
System or series	Upper Cambrian	Upper Cambrian	Middle and Upper Ordovician		Middle and Upper Ordovician
Formation top (relative to KB) (ft)	-6,977	-6,630	-7,355		-8,730
Formation top (relative to GL) (ft)	-6,965	-6,606.5	-7,333		-8,713
Formation top (relative to SL) (ft)	-6,203	-5,930	-6,156		-7,194
Formation 57	Nolichucky Shale (shale)	Maynardville Limestone of the Conasauga Group (marker Y)	Beekmantown Dolomite		Rockdell Limestone (marker D)
System or series	Upper Cambrian	Upper Cambrian	Lower Ordovician		Middle and Upper Ordovician
Formation top (relative to KB) (ft)	-7,020	-7,700	-7,458		-8,860
Formation top (relative to GL) (ft)	-7,008	-7,676.5	-7,436		-8,843
Formation top (relative to SL) (ft)	-6,246	-7,000	-6,259		-7,324
Formation 58	Maryville Limestone of the Conasauga Group	Nolichucky Shale of the Conasauga Group	Rose Run Sandstone		Elway Limestone, Five Oaks Limestone, and Lincolnshire Limestone (equivalent to Wells Creek dolomite)
System or series	Middle and Upper Cambrian	Upper Cambrian	Upper Cambrian		Middle Ordovician
Formation top (relative to KB) (ft)	-7,587	-7,835	-8,020		-8,920
Formation top (relative to GL) (ft)	-7,575	-7,811.5	-7,998		-8,903
Formation top (relative to SL) (ft)	-6,813	-7,135	-6,821		-7,384

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	16	17	18	19
American Petroleum Institute well number	45–027–20147	45–027–04032	45–167–20256	45–169–19690
Lease name	No. 9781–T Pittston Company	No. 9722–T John W. Pobst and others	No. 1 N.R. Price	No. 1 E.D. Smith
Permanent datum	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	1,567.97	1,670.86	2,205	1,456.30
Kelly bushing elevation (ft)	1,579.97	1,682.86	2,238	1,467.50
Measured from	KB (12 ft APD)	KB (12 ft APD)	KB (33 ft APD)	KB (11.2 ft APD)
Drill depth (ft)	6,798	7,299	17,000	7,222
KB elevation - GL elevation (ft)	12	12	33	11.2
Formation 56			Maryville Limestone of the Conasauga Group	
System or series			Middle and Upper Cambrian	
Formation top (relative to KB) (ft)			-14,112	
Formation top (relative to GL) (ft)			-14,079	
Formation top (relative to SL) (ft)			-11,874	
Formation 57			Rogersville Shale of the Conasauga Group	
System or series			Middle Cambrian	
Formation top (relative to KB) (ft)			-14,657	
Formation top (relative to GL) (ft)			-14,624	
Formation top (relative to SL) (ft)			-12,419	
Formation 58			Rutledge Limestone of the Conasauga Group	
System or series			Middle Cambrian	
Formation top (relative to KB) (ft)			-14,715	
Formation top (relative to GL) (ft)			-14,682	
Formation top (relative to SL) (ft)			-12,477	

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	11	12	13	14	15
American Petroleum Institute well number	16–025–00745	16–071–27524	16–195–24577	16–195–18969	45–051–20238
Lease name	No. 8613T S.W. (B.) Williams	No. 1 Hall	No. 1 Stratton	No. 201 Kentland Coal and Coke Company	No. 20321–T Mullins Heirs
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	762	676.5	1,177	1,352.42	1,519
Kelly bushing elevation (ft)	774	700	1,199	1,360.42	1,536
Measured from	KB (12 ft APD)	KB (23.5 ft APD)	KB (22 ft APD)	KB (8 ft APD)	KB (17 ft APD)
Drill depth (ft)	11,130	13,035	12,471	4,990	9,374
KB elevation - GL elevation (ft)	12	23.5	22	8	17
Formation 59	Maryville Limestone of the Conasauga Group (shale)	Nolichucky Shale (limestone)	Copper Ridge Dolomite		Blackford Formation (equivalent to Wells Creek dolomite)
System or series	Middle and Upper Cambrian	Upper Cambrian	Upper Cambrian		Middle Ordovician
Formation top (relative to KB) (ft)	-7,750	-8,036	-8,224		-9,050
Formation top (relative to GL) (ft)	-7,738	-8,012.5	-8,202		-9,033
Formation top (relative to SL) (ft)	-6,976	-7,336	-7,025		-7,514
Formation 60	Maryville Limestone of the Conasauga Group (limestone)	Nolichucky Shale (shale)	Maynardville Limestone of the Conasauga Group (marker Y)		Blackford Formation (sandstone)
System or series	Middle and Upper Cambrian	Upper Cambrian	Upper Cambrian		Middle Ordovician
Formation top (relative to KB) (ft)	-7,856	-8,050	-9,088		-9,165
Formation top (relative to GL) (ft)	-7,844	-8,026.5	-9,066		-9,148
Formation top (relative to SL) (ft)	-7,082	-7,350	-7,889		-7,629
Formation 61	Maryville Limestone of the Conasauga Group (sandstone)	Nolichucky Shale (limestone)	Nolichucky Shale of the Conasauga Group		Mascot Dolomite of the Knox Group
System or series	Middle and Upper Cambrian	Upper Cambrian	Upper Cambrian		Lower Ordovician
Formation top (relative to KB) (ft)	-8,110	-8,215	-9,230		-9,175
Formation top (relative to GL) (ft)	-8,098	-8,191.5	-9,208		-9,158
Formation top (relative to SL) (ft)	-7,336	-7,515	-8,031		-7,639
Formation 62	Rogersville Shale of the Conasauga Group	Nolichucky Shale (shale)	Nolichucky Shale (limestone)		
System or series	Middle Cambrian	Upper Cambrian	Upper Cambrian		
Formation top (relative to KB) (ft)	-8,240	-8,270	-9,372		
Formation top (relative to GL) (ft)	-8,228	-8,246.5	-9,350		
Formation top (relative to SL) (ft)	-7,466	-7,570	-8,173		

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section /–/’.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	16	17	18	19
American Petroleum Institute well number	45–027–20147	45–027–04032	45–167–20256	45–169–19690
Lease name	No. 9781–T Pittston Company	No. 9722–T John W. Pobst and others	No. 1 N.R. Price	No. 1 E.D. Smith
Permanent datum	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	1,567.97	1,670.86	2,205	1,456.30
Kelly bushing elevation (ft)	1,579.97	1,682.86	2,238	1,467.50
Measured from	KB (12 ft APD)	KB (12 ft APD)	KB (33 ft APD)	KB (11.2 ft APD)
Drill depth (ft)	6,798	7,299	17,000	7,222
KB elevation - GL elevation (ft)	12	12	33	11.2
Formation 59			Pumpkin Valley Shale of the Conasauga Group	
System or series			Middle Cambrian	
Formation top (relative to KB) (ft)			-14,940	
Formation top (relative to GL) (ft)			-14,907	
Formation top (relative to SL) (ft)			-12,702	
Formation 60			Rome Formation (dolomite)	
System or series			Lower(?) and Middle Cambrian	
Formation top (relative to KB) (ft)			-15,008	
Formation top (relative to GL) (ft)			-14,975	
Formation top (relative to SL) (ft)			-12,770	
Formation 61			Rome Formation (shale)	
System or series			Lower(?) and Middle Cambrian	
Formation top (relative to KB) (ft)			-15,222	
Formation top (relative to GL) (ft)			-15,189	
Formation top (relative to SL) (ft)			-12,984	
Formation 62			Rome Formation (dolomite)	
System or series			Lower Cambrian	
Formation top (relative to KB) (ft)			-15,890	
Formation top (relative to GL) (ft)			-15,857	
Formation top (relative to SL) (ft)			-13,652	

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	11	12	13	14	15
American Petroleum Institute well number	16–025–00745	16–071–27524	16–195–24577	16–195–18969	45–051–20238
Lease name	No. 8613T S.W. (B.) Williams	No. 1 Hall	No. 1 Stratton	No. 201 Kentland Coal and Coke Company	No. 20321–T Mullins Heirs
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	762	676.5	1,177	1,352.42	1,519
Kelly bushing elevation (ft)	774	700	1,199	1,360.42	1,536
Measured from	KB (12 ft APD)	KB (23.5 ft APD)	KB (22 ft APD)	KB (8 ft APD)	KB (17 ft APD)
Drill depth (ft)	11,130	13,035	12,471	4,990	9,374
KB elevation - GL elevation (ft)	12	23.5	22	8	17
Formation 63	Rutledge Limestone of the Conasauga Group	Maryville Limestone of the Conasauga Group	Nolichucky Shale (shale)		
System or series	Middle Cambrian	Middle and Upper Cambrian	Upper Cambrian		
Formation top (relative to KB) (ft)	-8,563	-8,440	-9,400		
Formation top (relative to GL) (ft)	-8,551	-8,416.5	-9,378		
Formation top (relative to SL) (ft)	-7,789	-7,740	-8,201		
Formation 64	Pumpkin Valley Shale of the Conasauga Group	Maryville Limestone of the Conasauga Group (shale)	Nolichucky Shale (limestone)		
System or series	Middle Cambrian	Middle and Upper Cambrian	Upper Cambrian		
Formation top (relative to KB) (ft)	-8,898	-9,135	-9,500		
Formation top (relative to GL) (ft)	-8,886	-9,111.5	-9,478		
Formation top (relative to SL) (ft)	-8,124	-8,435	-8,301		
Formation 65	Rome Formation (limestone)	Maryville Limestone of the Conasauga Group (limestone)	Nolichucky Shale (shale)		
System or series	Middle Cambrian	Middle and Upper Cambrian	Upper Cambrian		
Formation top (relative to KB) (ft)	-9,078	-9,230	-9,600		
Formation top (relative to GL) (ft)	-9,066	-9,206.5	-9,578		
Formation top (relative to SL) (ft)	-8,304	-8,530	-8,401		
Formation 66	Rome Formation (shale and sandstone)	Rogersville Shale of the Conasauga Group	Maryville Limestone of the Conasauga Group		
System or series	Lower(?) and Middle Cambrian	Middle Cambrian	Middle and Upper Cambrian		
Formation top (relative to KB) (ft)	-9,400	-9,470	-9,705		
Formation top (relative to GL) (ft)	-9,388	-9,446.5	-9,683		
Formation top (relative to SL) (ft)	-8,626	-8,770	-8,506		

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section /–/.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	16	17	18	19
American Petroleum Institute well number	45–027–20147	45–027–04032	45–167–20256	45–169–19690
Lease name	No. 9781–T Pittston Company	No. 9722–T John W. Pobst and others	No. 1 N.R. Price	No. 1 E.D. Smith
Permanent datum	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	1,567.97	1,670.86	2,205	1,456.30
Kelly bushing elevation (ft)	1,579.97	1,682.86	2,238	1,467.50
Measured from	KB (12 ft APD)	KB (12 ft APD)	KB (33 ft APD)	KB (11.2 ft APD)
Drill depth (ft)	6,798	7,299	17,000	7,222
KB elevation - GL elevation (ft)	12	12	33	11.2
Formation 63			Rome Formation (shale)	
System or series			Lower Cambrian	
Formation top (relative to KB) (ft)			-15,963	
Formation top (relative to GL) (ft)			-15,930	
Formation top (relative to SL) (ft)			-13,725	
Formation 64			Rome Formation (dolomite)	
System or series			Lower Cambrian	
Formation top (relative to KB) (ft)			-16,117	
Formation top (relative to GL) (ft)			-16,084	
Formation top (relative to SL) (ft)			-13,879	
Formation 65			Rome Formation (shale)	
System or series			Lower Cambrian	
Formation top (relative to KB) (ft)			-16,138	
Formation top (relative to GL) (ft)			-16,105	
Formation top (relative to SL) (ft)			-13,900	
Formation 66			Shady Dolomite	
System or series			Lower Cambrian	
Formation top (relative to KB) (ft)			-16,242	
Formation top (relative to GL) (ft)			-16,209	
Formation top (relative to SL) (ft)			-14,004	

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	11	12	13	14	15
American Petroleum Institute well number	16–025–00745	16–071–27524	16–195–24577	16–195–18969	45–051–20238
Lease name	No. 8613T S.W. (B.) Williams	No. 1 Hall	No. 1 Stratton	No. 201 Kentland Coal and Coke Company	No. 20321–T Mullins Heirs
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	762	676.5	1,177	1,352.42	1,519
Kelly bushing elevation (ft)	774	700	1,199	1,360.42	1,536
Measured from	KB (12 ft APD)	KB (23.5 ft APD)	KB (22 ft APD)	KB (8 ft APD)	KB (17 ft APD)
Drill depth (ft)	11,130	13,035	12,471	4,990	9,374
KB elevation - GL elevation (ft)	12	23.5	22	8	17
Formation 67	Rome Formation (sandstone)	Rutledge Limestone of the Conasauga Group	Rogersville Shale of the Conasauga Group		
System or series	Lower(?) and Middle Cambrian	Middle Cambrian	Middle Cambrian		
Formation top (relative to KB) (ft)	-10,000	-9,710	-10,210		
Formation top (relative to GL) (ft)	-9,988	-9,686.5	-10,188		
Formation top (relative to SL) (ft)	-9,226	-9,010	-9,011		
Formation 68	Rome Formation (limestone)	Pumpkin Valley Shale of the Conasauga Group	Rutledge Limestone of the Conasauga Group		
System or series	Lower(?) and Middle Cambrian	Middle Cambrian	Middle Cambrian		
Formation top (relative to KB) (ft)	-10,370	-10,170	-10,420		
Formation top (relative to GL) (ft)	-10,358	-10,146.5	-10,398		
Formation top (relative to SL) (ft)	-9,596	-9,470	-9,221		
Formation 69	Rome Formation (sandstone and shale)	Rome Formation (limestone)	Pumpkin Valley Shale of the Conasauga Group		
System or series	Lower(?) and Middle Cambrian	Middle Cambrian	Middle Cambrian		
Formation top (relative to KB) (ft)	-10,400	-10,360	-10,686		
Formation top (relative to GL) (ft)	-10,388	-10,336.5	-10,664		
Formation top (relative to SL) (ft)	-9,626	-9,660	-9,487		
Formation 70	Rome Formation (limestone)	Rome Formation (shale and limestone)	Rome Formation (limestone)		
System or series	Lower(?) and Middle Cambrian	Lower(?) and Middle Cambrian	Middle Cambrian		
Formation top (relative to KB) (ft)	-10,600	-10,876	-10,800		
Formation top (relative to GL) (ft)	-10,588	-10,852.5	-10,778		
Formation top (relative to SL) (ft)	-9,826	-10,176	-9,601		

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section /–/.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	16	17	18	19
American Petroleum Institute well number	45–027–20147	45–027–04032	45–167–20256	45–169–19690
Lease name	No. 9781–T Pittston Company	No. 9722–T John W. Pobst and others	No. 1 N.R. Price	No. 1 E.D. Smith
Permanent datum	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	1,567.97	1,670.86	2,205	1,456.30
Kelly bushing elevation (ft)	1,579.97	1,682.86	2,238	1,467.50
Measured from	KB (12 ft APD)	KB (12 ft APD)	KB (33 ft APD)	KB (11.2 ft APD)
Drill depth (ft)	6,798	7,299	17,000	7,222
KB elevation - GL elevation (ft)	12	12	33	11.2
Formation 67			Chilhowee Group (basal sandstone)	
System or series			Lower Cambrian	
Formation top (relative to KB) (ft)			-16,490	
Formation top (relative to GL) (ft)			-16,457	
Formation top (relative to SL) (ft)			-14,252	
Formation 68			Granite and (or) gneiss	
System or series			Mesoproterozoic	
Formation top (relative to KB) (ft)			-16,646	
Formation top (relative to GL) (ft)			-16,613	
Formation top (relative to SL) (ft)			-14,408	
Formation 69				
System or series				
Formation top (relative to KB) (ft)				
Formation top (relative to GL) (ft)				
Formation top (relative to SL) (ft)				
Formation 70				
System or series				
Formation top (relative to KB) (ft)				
Formation top (relative to GL) (ft)				
Formation top (relative to SL) (ft)				

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	11	12	13	14	15
American Petroleum Institute well number	16–025–00745	16–071–27524	16–195–24577	16–195–18969	45–051–20238
Lease name	No. 8613T S.W. (B.) Williams	No. 1 Hall	No. 1 Stratton	No. 201 Kentland Coal and Coke Company	No. 20321–T Mullins Heirs
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	762	676.5	1,177	1,352.42	1,519
Kelly bushing elevation (ft)	774	700	1,199	1,360.42	1,536
Measured from	KB (12 ft APD)	KB (23.5 ft APD)	KB (22 ft APD)	KB (8 ft APD)	KB (17 ft APD)
Drill depth (ft)	11,130	13,035	12,471	4,990	9,374
KB elevation - GL elevation (ft)	12	23.5	22	8	17
Formation 71	Rome Formation (sandstone and shale)	Rome Formation (limestone)	Rome Formation (shale and siltstone)		
System or series	Lower(?) and Middle Cambrian	Lower(?) and Middle Cambrian	Lower(?) and Middle Cambrian		
Formation top (relative to KB) (ft)	-10,610	-12,126	-11,150		
Formation top (relative to GL) (ft)	-10,598	-12,102.5	-11,128		
Formation top (relative to SL) (ft)	-9,836	-11,426	-9,951		
Formation 72	Shady Dolomite	Rome Formation (shale and limestone)	Rome Formation (limestone)		
System or series	Lower Cambrian	Lower(?) and Middle Cambrian	Lower(?) and Middle Cambrian		
Formation top (relative to KB) (ft)	-10,706	-12,175	-11,650		
Formation top (relative to GL) (ft)	-10,694	-12,151.5	-11,628		
Formation top (relative to SL) (ft)	-9,932	-11,475	-10,451		
Formation 73	Chilhowee Group (basal sandstone)	Rome Formation (limestone)	Rome Formation (shale and siltstone)		
System or series	Lower Cambrian	Lower(?) and Middle Cambrian	Lower(?) and Middle Cambrian		
Formation top (relative to KB) (ft)	-10,871	-12,300	-11,695		
Formation top (relative to GL) (ft)	-10,859	-12,276.5	-11,673		
Formation top (relative to SL) (ft)	-10,097	-11,600	-10,496		
Formation 74	Granite and chlorite schist	Rome Formation (shale and limestone)	Rome Formation (dolomite)		
System or series	Mesoproterozoic	Lower(?) and Middle Cambrian	Lower(?) and Middle Cambrian		
Formation top (relative to KB) (ft)	-10,970	-12,350	-11,866		
Formation top (relative to GL) (ft)	-10,958	-12,326.5	-11,844		
Formation top (relative to SL) (ft)	-10,196	-11,650	-10,667		

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section /–/’.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	16	17	18	19
American Petroleum Institute well number	45–027–20147	45–027–04032	45–167–20256	45–169–19690
Lease name	No. 9781–T Pittston Company	No. 9722–T John W. Pobst and others	No. 1 N.R. Price	No. 1 E.D. Smith
Permanent datum	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	1,567.97	1,670.86	2,205	1,456.30
Kelly bushing elevation (ft)	1,579.97	1,682.86	2,238	1,467.50
Measured from	KB (12 ft APD)	KB (12 ft APD)	KB (33 ft APD)	KB (11.2 ft APD)
Drill depth (ft)	6,798	7,299	17,000	7,222
KB elevation - GL elevation (ft)	12	12	33	11.2
Formation 71				
System or series				
Formation top (relative to KB) (ft)				
Formation top (relative to GL) (ft)				
Formation top (relative to SL) (ft)				
Formation 72				
System or series				
Formation top (relative to KB) (ft)				
Formation top (relative to GL) (ft)				
Formation top (relative to SL) (ft)				
Formation 73				
System or series				
Formation top (relative to KB) (ft)				
Formation top (relative to GL) (ft)				
Formation top (relative to SL) (ft)				
Formation 74				
System or series				
Formation top (relative to KB) (ft)				
Formation top (relative to GL) (ft)				
Formation top (relative to SL) (ft)				

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section I–I'.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	11	12	13	14	15
American Petroleum Institute well number	16–025–00745	16–071–27524	16–195–24577	16–195–18969	45–051–20238
Lease name	No. 8613T S.W. (B.) Williams	No. 1 Hall	No. 1 Stratton	No. 201 Kentland Coal and Coke Company	No. 20321–T Mullins Heirs
Permanent datum	Ground level	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	762	676.5	1,177	1,352.42	1,519
Kelly bushing elevation (ft)	774	700	1,199	1,360.42	1,536
Measured from	KB (12 ft APD)	KB (23.5 ft APD)	KB (22 ft APD)	KB (8 ft APD)	KB (17 ft APD)
Drill depth (ft)	11,130	13,035	12,471	4,990	9,374
KB elevation - GL elevation (ft)	12	23.5	22	8	17
Formation 75		Shady Dolomite	Rome Formation (shale and siltstone)		
System or series		Lower Cambrian	Lower(?) and Middle Cambrian		
Formation top (relative to KB) (ft)		-12,490	-11,942		
Formation top (relative to GL) (ft)		-12,466.5	-11,920		
Formation top (relative to SL) (ft)		-11,790	-10,743		
Formation 76		Chilhowee Group (basal sandstone)	Shady Dolomite		
System or series		Lower Cambrian	Lower Cambrian		
Formation top (relative to KB) (ft)		-12,666	-12,140		
Formation top (relative to GL) (ft)		-12,642.5	-12,118		
Formation top (relative to SL) (ft)		-11,966	-10,941		
Formation 77		Granite and (or) gneiss	Chilhowee Group (basal sandstone)		
System or series		Mesoproterozoic	Lower Cambrian		
Formation top (relative to KB) (ft)		-12,783	-12,370		
Formation top (relative to GL) (ft)		-12,759.5	-12,348		
Formation top (relative to SL) (ft)		-12,083	-11,171		
Formation 78			Granite and (or) gneiss		
System or series			Mesoproterozoic		
Formation top (relative to KB) (ft)			-12,420		
Formation top (relative to GL) (ft)			-12,398		
Formation top (relative to SL) (ft)			-11,221		

Appendix 2. Table Summarizing Stratigraphic Units and Depths of Stratigraphic Units for Drill Holes 11–19 in Cross Section /–/’.—Continued

[Abbreviations: APD, above permanent datum; ft, feet; GL, ground level; KB, kelly bushing; SL, sea level]

Drill hole number	16	17	18	19
American Petroleum Institute well number	45–027–20147	45–027–04032	45–167–20256	45–169–19690
Lease name	No. 9781–T Pittston Company	No. 9722–T John W. Pobst and others	No. 1 N.R. Price	No. 1 E.D. Smith
Permanent datum	Ground level	Ground level	Ground level	Ground level
Ground level elevation (ft)	1,567.97	1,670.86	2,205	1,456.30
Kelly bushing elevation (ft)	1,579.97	1,682.86	2,238	1,467.50
Measured from	KB (12 ft APD)	KB (12 ft APD)	KB (33 ft APD)	KB (11.2 ft APD)
Drill depth (ft)	6,798	7,299	17,000	7,222
KB elevation - GL elevation (ft)	12	12	33	11.2
Formation 75				
System or series				
Formation top (relative to KB) (ft)				
Formation top (relative to GL) (ft)				
Formation top (relative to SL) (ft)				
Formation 76				
System or series				
Formation top (relative to KB) (ft)				
Formation top (relative to GL) (ft)				
Formation top (relative to SL) (ft)				
Formation 77				
System or series				
Formation top (relative to KB) (ft)				
Formation top (relative to GL) (ft)				
Formation top (relative to SL) (ft)				
Formation 78				
System or series				
Formation top (relative to KB) (ft)				
Formation top (relative to GL) (ft)				
Formation top (relative to SL) (ft)				

Appendix 3. Scale, Units, and Depths for Gamma-Ray Logging Runs

Appendix 3. Scale, units, and depths for gamma-ray logging runs.[Abbreviations: API, American Petroleum Institute; ft, feet; KB, kelly bushing; nd, no data; no., number; TD, total depth; $\mu\text{gm Ra-eq/ton}$, micrograms of radium equivalent per metric ton]

Drill hole no.	Scale and units	Depth of selected logged interval	Casing shoe location	Notes
1	0–200 API units	16 ft below KB to 438 ft	125 ft below KB	The gamma ray values for the overlapping first and second logging runs do not match.
	200–400 API units (backup scale)			
	0–200 API units	430 ft below KB to 5,230 ft	430 ft below KB	
	0–138 API units	5,230 ft below KB to TD (used in cross section); entire logging run from 4,300 ft below KB to TD	nd	
2	nd		nd	
3	nd		nd	
4	0–88 API units	KB to TD	nd	
5	0–120(?) API units	KB to TD	nd	
6	0–200 API units	100 ft below KB to TD	nd	
	200–400 API units (backup scale)			
7	0–200 API units	KB to TD	nd	
	200–400 API units (backup scale)			
8	0–200 API units	20 ft below KB to 865 ft	nd	
	200–400 API units (backup scale)			
	0–250 API units	865 ft below KB to 1,110 ft	nd	
	250–500 API units (backup scale)			
	0–200 API units	1,110 ft below KB to TD	nd	
9	0–200 API units	KB to 2,672 ft	nd	
	200–400 API units (backup scale)	2,672 ft below KB to TD		
10	0–200 API units	60 ft below KB to 940 ft	nd	
	200–400 API units (backup scale)			
	0–200 API units	940 ft below KB to 3,105 ft	nd	
	200–400 API units (backup scale)			
	0–200 API units	2,978 ft below KB to 9,780 ft	nd	
	200–400 API units (backup scale)			
11	0–200 API units	9,780 ft below KB to TD	nd	
	200–400 API units (backup scale)			
	0–10 $\mu\text{gm Ra-eq/ton}$	100 ft below KB to 4,320 ft	nd	
	0–10 $\mu\text{gm Ra-eq/ton}$	4,320 ft below KB to TD	nd	
	10–20 $\mu\text{gm Ra-eq/ton}$ (backup scale)			

Appendix 3. Scale, units, and depths for gamma-ray logging runs.—Continued[Abbreviations: API, American Petroleum Institute; ft, feet; KB, kelly bushing; nd, no data; no., number; TD, total depth; $\mu\text{gm Ra-eq/ton}$, micrograms of radium equivalent per metric ton]

Drill hole no.	Scale and units	Depth of selected logged interval	Casing shoe location	Notes
12	0–200 API units	KB to 7,490 ft below KB	nd	Drilling time log (ft per hour); not shown on cross section <i>I–I'</i> .
	200–400 API units (backup scale)			
	0–200 API units	7,490 ft below KB to 10,490 ft	nd	
	200–400 API units (backup scale)			
	Drilling time log only	10,490 ft below KB to TD	nd	
13	0–200 API units	60 ft below KB to 2,180 ft	nd	
	200–400 API units (backup scale)			
	0–200 API units	2,180 ft below KB to 5,840 ft	nd	
	200–400 API units (backup scale)			
	0–200 API units	5,840 ft below KB to TD	nd	
14	0–200 API units	90 ft below KB to TD	nd	
	200–400 API units (backup scale)			
15	0–250 API units	KB to 5,250 ft	nd	
	250–500 API units (backup scale)			
	0–200 API units	5,250 ft below KB to 5,660 ft	nd	
	200–400 API units (backup scale)			
	0–200 API units	5,660 ft below KB to 8,910 ft	nd	
	200–400 API units (backup scale)			
16	0–200 API units	8,910 ft below KB to TD	nd	
	200–400 API units (backup scale)			
	0–200 API units	90 ft below KB to 5,860 ft	nd	
	200–400 API units (backup scale)			
17	0–200 API units	5,860 ft below KB to TD	nd	
	200–400 API units (backup scale)			
	0–200 API units	100 ft below KB to 6,850 ft	nd	
	200–400 API units (backup scale)			
17	0–200 API units	6,850 ft below KB to TD	nd	
	200–400 API units (backup scale)			

Appendix 3. Scale, units, and depths for gamma-ray logging runs.—Continued

[Abbreviations: API, American Petroleum Institute; ft, feet; KB, kelly bushing; nd, no data; no., number; TD, total depth; μgm Ra-eq/ton, micrograms of radium equivalent per metric ton]

Drill hole no.	Scale and units	Depth of selected logged interval	Casing shoe location	Notes
18	0–200 API units	254 ft below KB to 1,388 ft	nd	
	200–400 API units (backup scale)			
	0–200 API units	1,388 ft below KB to 8,408 ft	nd	
	200–400 API units (backup scale)			
	0–200 API units	8,408 ft below KB to 13,490 ft	nd	
	200–400 API units (backup scale)			
	0–250 API units	13,490 ft below KB to TD	nd	
	250–500 API units (backup scale)			
19	0–200 API units	80 ft below KB to 4,420 ft	nd	
	200–400 API units (backup scale)			
	0–250 API units	4,420 ft below KB to TD	nd	
	250–500 API units (backup scale)			

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