

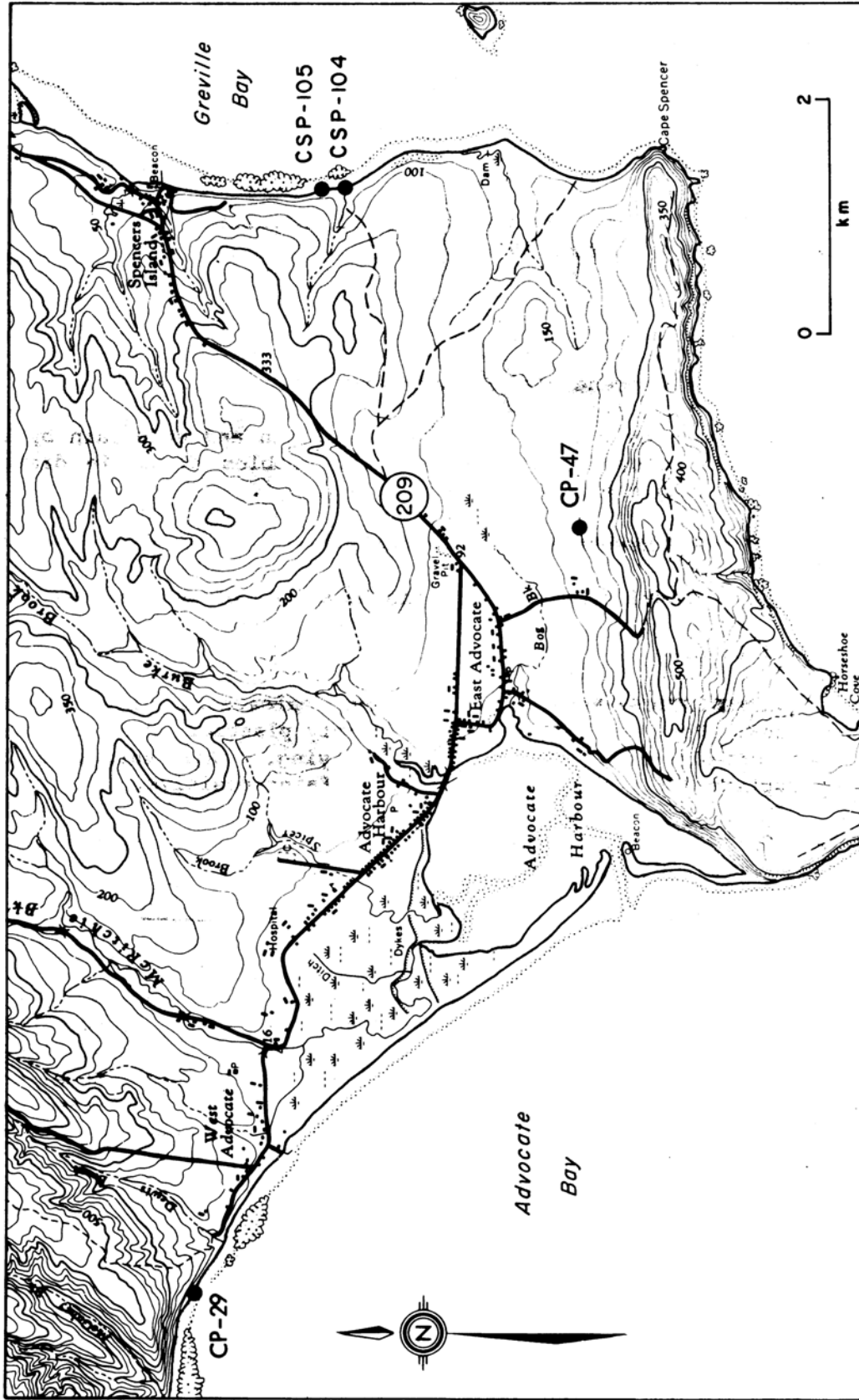
CUMBERLAND COUNTY**Sample Number**

CP-29

TOPOGRAPHICAL SHEET: 21H/07**LOCATION:** West Advocate, on the shore of Advocate Bay about 565 m northwest of Dewis Brook (Fig. 19).**UTM:** 356350 E
5023460 N**GEOLOGICAL UNIT:** Pleistocene clay, Quaternary age**DESCRIPTION:** Medium grey clay, 10 cm thick overlain and underlain by light greenish-grey muddy clay containing grit and pebbles <1 cm in diameter. The clay extends along the shore for about 14 m.**ATTITUDE OF BEDDING:** Essentially horizontal**SAMPLE INTERVAL:** Channel sample across the 10 cm bed of medium grey clay**TYPE OF MATERIAL:** Clay**UNFIRED CHARACTERISTICS:** Medium bluish-grey, calcareous clay containing numerous stones. Very good workability. Highly plastic. Poor extrudability. Water of plasticity 12.4%. Safe drying. Air shrinkage 2.2%. Modulus of rupture 178 p.s.i. Benzidine test faint positive.**P.C.E.:** 6+ (some bloating at cone 05)**FIRED CHARACTERISTICS:**

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
05	3.08	7.05	Pale reddish brown	Very hard to steel hard
04	4.12	2.51	Moderate reddish brown	Steel hard
02	5.57	1.23	Moderate reddish brown	Steel hard

POTENTIAL USES: Earthenware and artware



Ref. Map 21-H-7
Figure 19. Location map for samples CP-29, 47; CSP-104, 105 (East Advocate)

CUMBERLAND COUNTY

Sample Number
CP-47

TOPOGRAPHICAL SHEET: 21H/07

LOCATION: Exposure on the southern bank of a small pond approximately 480 m east of the road going to Cape d'Or from East Advocate (Fig. 19).

UTM: 362930 E
5020000 N

GEOLOGICAL UNIT: Clay, Quaternary age

DESCRIPTION: Brownish-red clay containing organic material. The extent and thickness of the clay could not be determined, however clay was once quarried here.

SAMPLE INTERVAL: Grab sample

TYPE OF MATERIAL: Clay

UNFIRED CHARACTERISTICS: Pale reddish-brown, noncalcareous clay. Very good workability. Very plastic. Water of plasticity 26.0%. Safe drying. Air shrinkage 6.6% Modulus of rupture 243 p.s.i. Benzidine test negative.

P.C.E.: 4-

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	4.28	8.52	Moderate reddish brown	Hard
04	5.52	7.12	Moderate reddish brown	Hard
02	9.66	2.09	Dark moderate reddish brown	Steel hard

POTENTIAL USES: Artware, common brick, face brick, hollow tile, conduit and sewer pipe.

CUMBERLAND COUNTY

Sample Number

CSP-8

TOPOGRAPHICAL SHEET: 21H/16E

LOCATION: South of the highway from Salem to Port Howe, in a quarry 2.4 km east of Salem (Fig. 20).

UTM: 415880 E
5068810 N

GEOLOGICAL UNIT: Pictou Group, Pennsylvanian age

DESCRIPTION: Brownish coloured shale

SAMPLE INTERVAL: Grab sample

TYPE OF MATERIAL: Shale

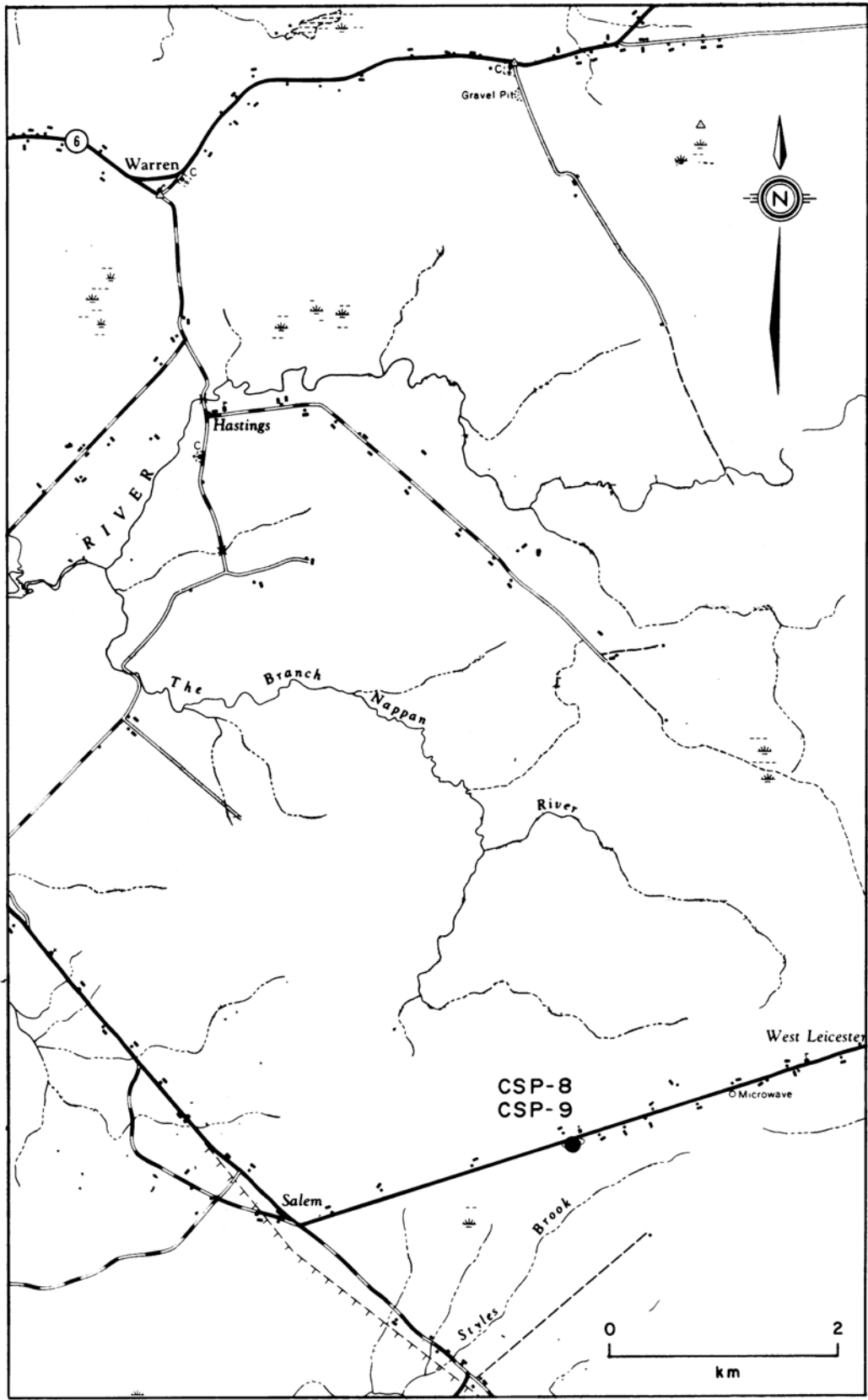
UNFIRED CHARACTERISTICS: Fair workability. Fair plasticity. Water of plasticity 20.0%. Safe drying. Air shrinkage 6.3%.

P.C.E.: 3 (started to bend at cone 1)

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	2.86	7.45	Light reddish brown	Very hard
04	4.61	2.45	Moderate reddish brown	Steel hard

POTENTIAL USES: Common and face brick.



Ref. Map 21-H-16E

Figure 20. Location map for samples CSP-8, 9 (Salem)

CUMBERLAND COUNTY**Sample Number**

CSP-9

TOPOGRAPHICAL SHEET: 21H/16E**LOCATION:** In a quarry 2.4 km east of Salem on the southern side of the highway from Salem to Port Howe (Fig. 20).**UTM:** 415880 E
5068810 N**GEOLOGICAL UNIT:** Pictou Group, Pennsylvanian age**DESCRIPTION:** Reddish-brown shale and siltstone**ATTITUDE OF BEDDING:** 075°/46° SE**SAMPLE INTERVAL:** 3 m channel sample**TYPE OF MATERIAL:** Shale and siltstone**UNFIRED CHARACTERISTICS:** Highly calcareous. Fair plasticity. Water of plasticity 21.2%. Safe drying. Air shrinkage 3.8%.**P.C.E.:** 3-4**FIRED CHARACTERISTICS:**

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	1.38	17.09	Reddish brown	Fairly hard
04	1.05	15.60	Pale red	Hard
02	0.00	10.37	Reddish brown	Very hard

POTENTIAL USES: None

CUMBERLAND COUNTY

Sample Number

CSP-10

TOPOGRAPHICAL SHEET: 21H/09

LOCATION: About 400 m northwest of Chignecto, in the surface dump of an old coal mine (Fig. 21).

UTM: 405220 E
5065690 N

GEOLOGICAL UNIT: Cumberland Group, Pennsylvanian age

DESCRIPTION: Blue-grey clay which occurs between coal beds

SAMPLE INTERVAL: Grab sample

TYPE OF MATERIAL: Clay

UNFIRED CHARACTERISTICS: Moderate plasticity. Water of plasticity 30.0%. Safe drying. Air shrinkage 8.0%.

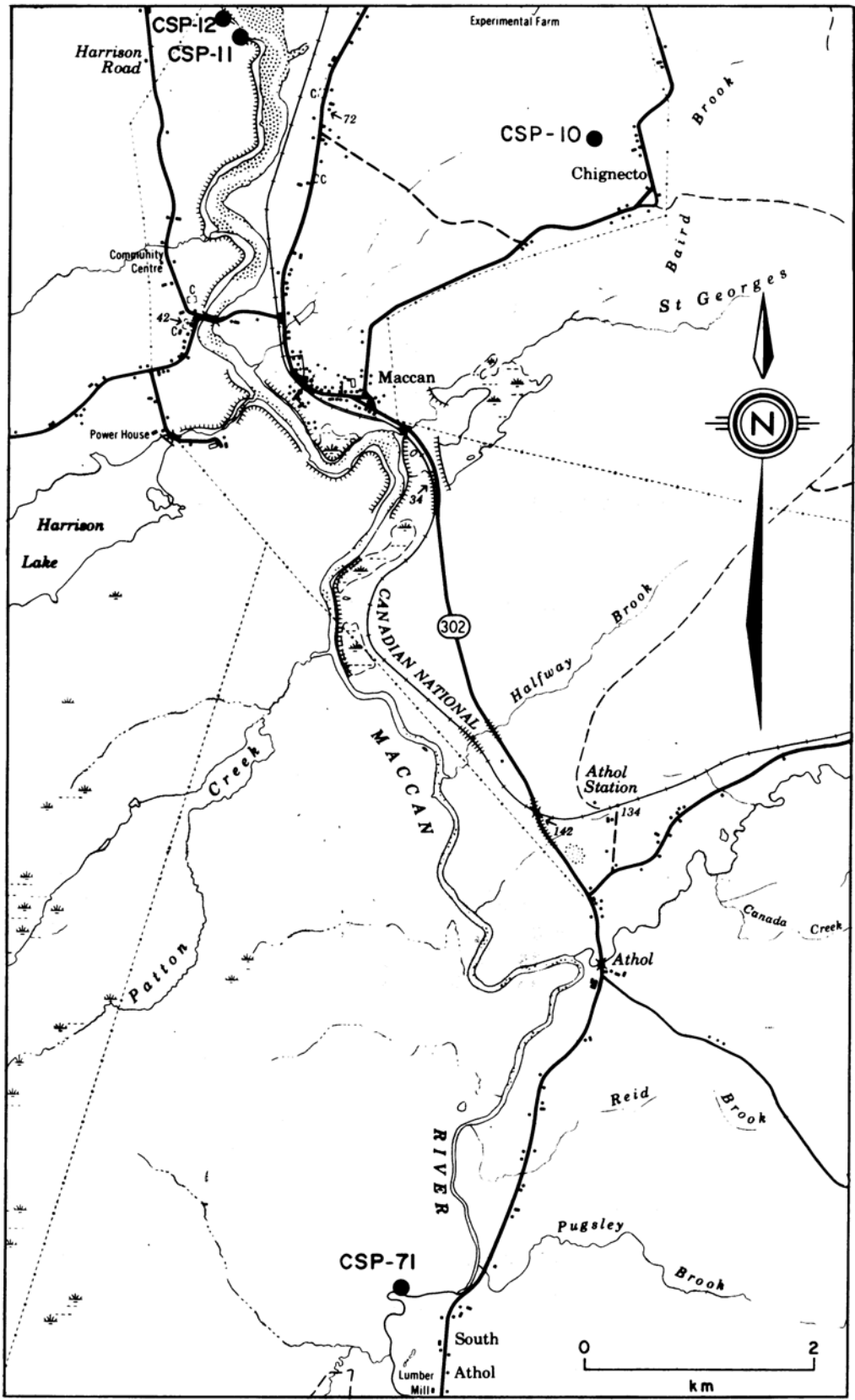
P.C.E.: 15

FIRED CHARACTERISTICS:

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1825	4.01	13.4	Light salmon	Very hard
1885	3.18	9.0	Light salmon	Very hard
1935	8.97	5.0	Light salmon	Steel hard
1980	10.63	0.79	Buff	Steel hard
2025	11.02	0.22	Buff	Steel hard
2065	10.99	0.82	Brown	Steel hard
2105	9.74	1.12	Brown	Steel hard
2140	8.31	1.29	Brown	Steel hard
2175	3.92	2.28	Greenish brown	Steel hard
2200	+0.32	4.21	Greenish brown	Steel hard
2225	+0.23	5.98	Greenish brown	Steel hard
2240	+2.89	6.75	Greenish brown	Steel hard

REMARKS: Sample contained pyrite which gave dark specks after firing. From 2200°F the sample bloated. Differential thermal analysis indicates 15% kaolinite in sample. Firing range too narrow.

POTENTIAL USES: None



Ref. Map 21-H-9

Figure 21. Location map for samples CSP-10-12, 71 (Maccan River)

CUMBERLAND COUNTY

Sample Number
CSP-11

TOPOGRAPHICAL SHEET: 21H/09

LOCATION: Exposure of clay along the Maccan River, east of Harrison Road (Fig. 21).

UTM: 402230 E
5066600 N

GEOLOGICAL UNIT: Windsor Group, Mississippian age

DESCRIPTION: Reddish-brown clay, about 12 m thick, in contact with laminated shale and fine grained sandstone. Exposed for a length of 490 m.

ATTITUDE OF BEDDING: 130°/25° SW

SAMPLE INTERVAL: Grab sample

TYPE OF MATERIAL: Clay

UNFIRED CHARACTERISTICS: Noncalcareous. Good workability. Good plasticity. Water of plasticity 30.9%. Safe drying. Air shrinkage 8.3%

P.C.E.: 3

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	0.36	13.64	Pinkish brown	Fairly hard
04	0.73	10.85	Pinkish brown	Hard
02	10.51	0.76	Pinkish brown	Steel hard

REMARKS: A lot of scumming on firing. Warped on firing.

POTENTIAL USES: None

CUMBERLAND COUNTY

Sample Number

CSP-12

TOPOGRAPHICAL SHEET: 21H/09

LOCATION: Exposure of siltstone along the Maccan River, east of Harrison Road (Fig. 21).

UTM: 402090 E
5066750 N

GEOLOGICAL UNIT: Windsor Group, Mississippian age

DESCRIPTION: Hard, reddish-brown siltstone

SAMPLE INTERVAL: Grab sample

TYPE OF MATERIAL: Siltsone

UNFIRED CHARACTERISTICS: Highly calcareous. Fair workability. Poorly plastic. Water of plasticity 20.8%. Safe drying. Air shrinkage 4.3%.

P.C.E.: 3-4

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	1.38	16.23	Reddish brown	Fairly hard
04	0.35	15.19	Pale red	Hard
02	1.05	10.56	Pale reddish brown	Hard

POTENTIAL USES: None

CUMBERLAND COUNTY**Sample Number**

CSP-13

TOPOGRAPHICAL SHEET: 21H/16W**LOCATION:** Exposure of clay on the western side of the Maccan River, near the Village of Harrison Road (Fig. 22).**UTM:** 402000 E
5066900 N**GEOLOGICAL UNIT:** Windsor Group, Mississippian age**DESCRIPTION:** Brownish-red clay**SAMPLE INTERVAL:** Grab sample**TYPE OF MATERIAL:** Clay**UNFIRED CHARACTERISTICS:** Highly calcareous. Good workability. Good plasticity. Water of plasticity 20.0%. Cracks with rapid drying. Air shrinkage 7.5%**FIRED CHARACTERISTICS:**

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	0.73	10.74	Light brown	Hard
04	1.79	5.10	Light reddish brown	Very hard

POTENTIAL USES: Not enough sample to complete firing tests

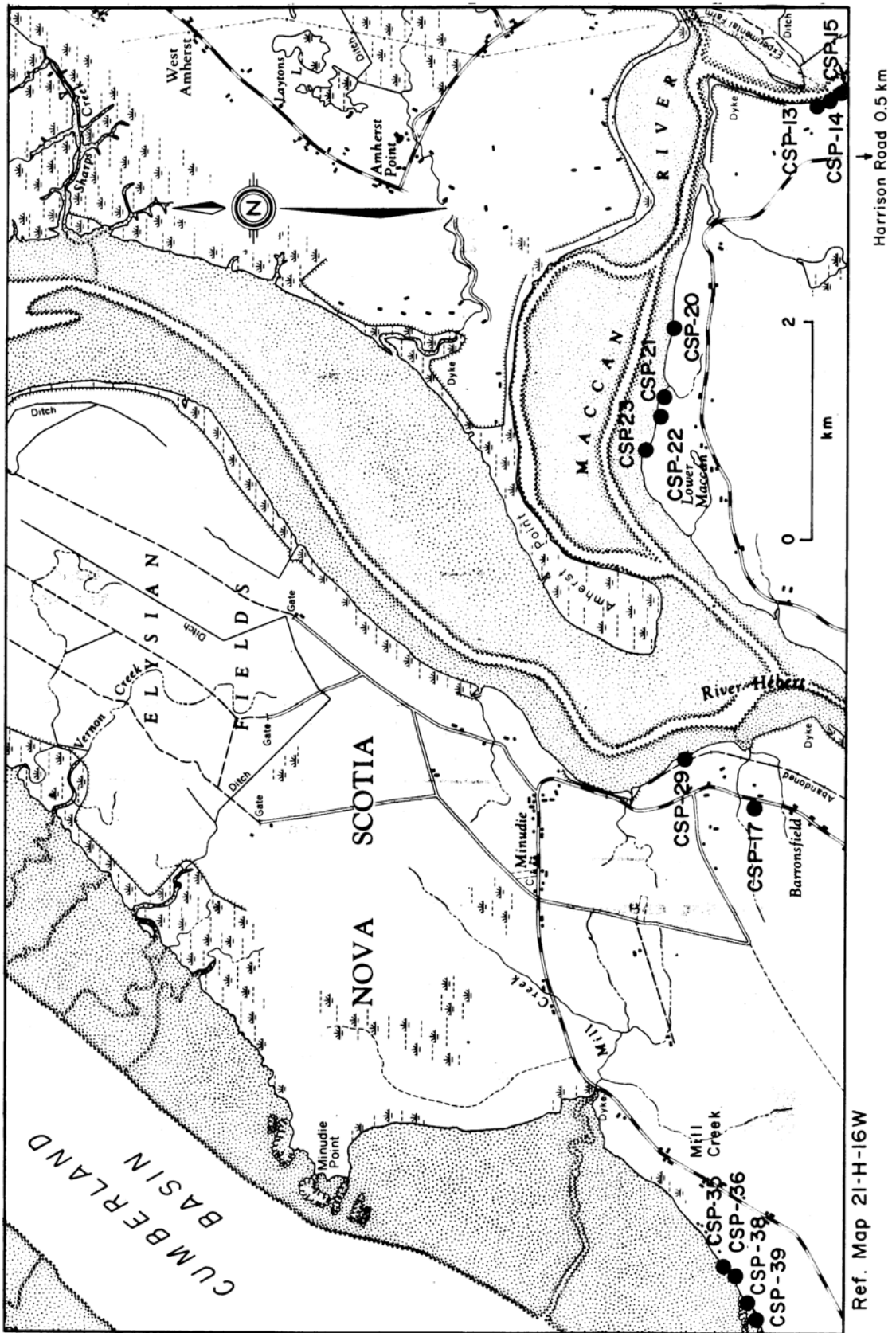


Figure 22. Location map for samples CSP-13-15, 17, 20-23, 29, 35, 36, 38, 39 (Cumberland Basin)

CUMBERLAND COUNTY

Sample Number
CSP-14

TOPOGRAPHICAL SHEET: 21H/16W

LOCATION: On the western bank of the Maccan River, east of the Village of Harrison Road {Fig. 22}.

UTM: 401960 E
5066980 N

GEOLOGICAL UNIT: Windsor Group, Mississippian age

DESCRIPTION: Reddish-brown, hard siltstone

SAMPLE INTERVAL: Grab sample

TYPE OF MATERIAL: Siltstone

UNFIRED CHARACTERISTICS: Good workability. Good plasticity. Water of plasticity 21.0%. Cracks with rapid drying. Safe drying at 85°C. Air shrinkage 6.2%

P.C.E.: 3 {started to bend at cone 1)

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	4.27	5.06	Reddish brown	Steel hard
04	6.79	0.62	Reddish brown	Steel hard
02	6.36	0.31	Dark reddish brown	Steel hard

REMARKS: Some scumming on firing

POTENTIAL USES: Suitable for low quality clay products such as brick.

CUMBERLAND COUNTY

Sample Number

CSP-15

TOPOGRAPHICAL SHEET: 21H/16W

LOCATION: Exposure of red siltstone and shale east of the Maccan River and north of the Village of Harrison Road (Fig. 22).

UTM: 401960 E
5067090 N

GEOLOGICAL UNIT: Windsor Group, Mississippian age

DESCRIPTION: Red slate and siltstone

SAMPLE INTERVAL: Grab sample

TYPE OF MATERIAL: Slate and siltstone

UNFIRED CHARACTERISTICS: Slightly calcareous. Good workability and plasticity. Water of plasticity 21.8%. Safe drying. Air shrinkage 6.4%

P.C.E.: 3

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	0.36	11.11	Pale reddish brown	Hard
04	1.07	10.43	Moderate reddish brown	Very hard
02	3.92	3.61	Moderate reddish brown	Steel hard

POTENTIAL USES: Common brick

CUMBERLAND COUNTY

Sample Number

CSP-17

TOPOGRAPHICAL SHEET: 21H/16W

LOCATION: Exposure along the Minudie Highway at Barronsfield (Fig. 22).

UTM: 395560 E

5067750 N

GEOLOGICAL UNIT: Canso Group, Upper Mississippian age

DESCRIPTION: Dark reddish shale exposed along the roadside.

SAMPLE INTERVAL: Grab sample along exposure

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Poor workability. Poorly plastic. Water of plasticity 25.0%. Safe drying. Air shrinkage 3.9%.

P.C.E.: 9 (started to bend at cone 7)

FIRED CHARACTERISTICS:

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1840	+0.28	21.2	Light brown	Soft
1910	0.23	20.8	Light brown	Soft
1950	0.58	19.4	Reddish brown	Hard
2005	1.04	17.71	Reddish brown	Hard
2045	2.46	16.45	Reddish brown	Hard
2080	2.38	14.37	Reddish brown	Hard
2115	4.30	12.48	Dark greyish brown	Very hard
2145	4.90	10.1	Dark greyish brown	Very hard
2165	5.80	7.92	Dark greyish brown	Very hard
2185	4.60	8.37	Dark greyish brown	Very hare
2200	6.32	6.45	Dark greyish brown	Very hard
2215	6.12	6.50	Dark greyish brown	Very hard

POTENTIAL USES: Possibly common brick, face brick, tile and decorative - brick.

CUMBERLAND COUNTY

Sample Number

CSP-18

TOPOGRAPHICAL SHEET: 21H/09

LOCATION: On the bank of River Hebert, at a point of land slightly north-east of the race track in River Hebert (Fig. 23).

UTM: 393310 E
5062080 N

GEOLOGICAL UNIT: Clay, Quaternary age

DESCRIPTION: Grey clay containing plant remains.

SAMPLE INTERVAL: Grab sample

TYPE OF MATERIAL: Clay

UNFIRED CHARACTERISTICS: Good workability and plasticity. Water of plasticity 38.6%. Cracks with rapid drying. Air shrinkage 9.9%

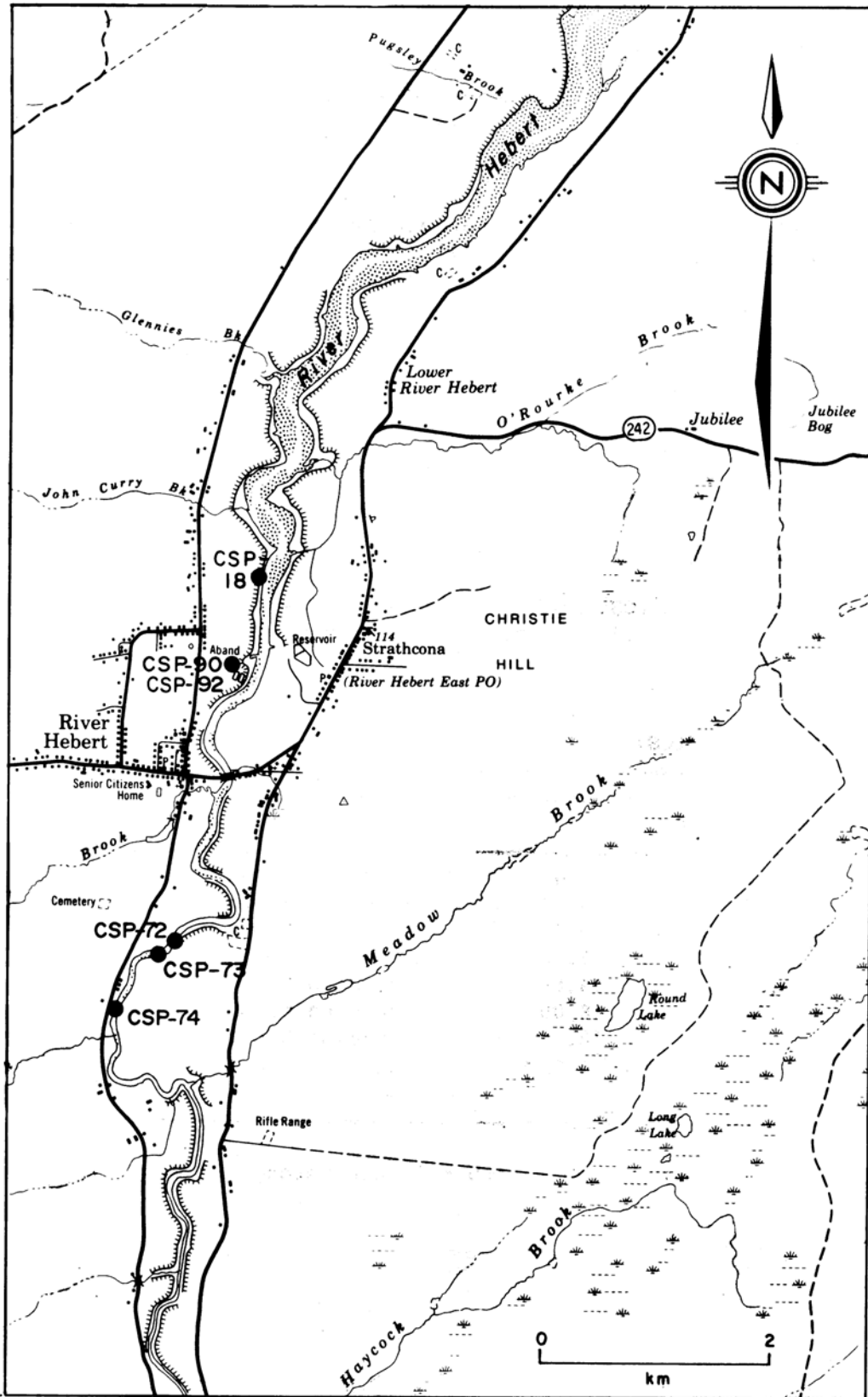
P.C.E.: 3

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	+1.12	14.68	Light brown	Hard
04	1.49	9.43	Reddish brown	Hard
02	6.62	3.70	Reddish brown	Steel hard

REMARKS: Warped on firing. High air shrinkage. Short firing range. Some scumming on firing.

POTENTIAL USES: None



Ref. Map 21-H-9

Figure 23. Location map for samples CSP-18, 72-74, 90, 92 (River Hebert)

CUMBERLAND COUNTY

Sample Number
CSP-20

TOPOGRAPHICAL SHEET: 21H/16W**LOCATION:** Along the southern shore, at the mouth of the Maccan River, at the Village of Lower Maccan (Fig. 22).**UTM:** 399920 E
5068430 N**GEOLOGICAL UNIT:** Recent clay**DESCRIPTION:** Reddish-brown clay**SAMPLE INTERVAL:** Grab sample**TYPE OF MATERIAL:** Clay**UNFIRED CHARACTERISTICS:** Highly calcareous clay. Good workability and plasticity. Water of plasticity 23.0%. Safe drying. Air shrinkage 6%.**P.C.E.:** 3**FIRED CHARACTERISTICS:**

Temp °F.	Fired Shrinkage %	Absorption %	Colour	Hardness
1785	0.52	18.05	Reddish brown	Soft
1825	0.55	18.30	Reddish brown	Soft
1865	0.63	18.55	Reddish brown	Soft
1905	0.75	18.33	Reddish brown	Fairly hard
1935	0.83	19.60	Reddish brown	Fairly hard
1965	1.24	18.00	Reddish brown	Fairly hard
1980	1.06	18.10	Reddish brown	Fairly hard
2010	1.39	16.55	Reddish brown	Fairly hard
2025	1.51	17.90	Reddish brown	Fairly hard

REMARKS: White specks which absorb moisture throughout sample after firing.**POTENTIAL USES:** None

CUMBERLAND COUNTY

Sample Number

CSP-21

TOPOGRAPHICAL SHEET: 21H/16W

LOCATION: On the southern shore of the Maccan River, 1.6 km northeast of the Village of Lower Maccan (Fig. 22).

UTM: 399250 E
5068570 N

GEOLOGICAL UNIT: Recent clay

DESCRIPTION: Grey clay

SAMPLE INTERVAL: Grab sample

TYPE OF MATERIAL: Clay

UNFIRED CHARACTERISTICS: Highly calcareous. Fair workability. Fair plasticity. Water of plasticity 20.9%. Safe drying at 85°C. 'Sample warped on air drying. Air shrinkage 4.4%

P.C.E.: 3

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	+1.04	13.55	Pinkish cream	Hard
04	0.35	8.86	Pinkish cream	Hard
02	1.57	8.70	Pale red	Very hard

REMARKS: Scumming on firing.

POTENTIAL USES: None

CUMBERLAND COUNTY

Sample Number

CSP-22

TOPOGRAPHICAL SHEET: 21H/16W

LOCATION: On the southern shore of the Maccan River, 137 m west of sample CSP-21 (Fig. 22).

UTM: 399150 E
5068600 N

GEOLOGICAL UNIT: Recent clay

DESCRIPTION: Light grey, sandy clay containing organic material.

SAMPLE INTERVAL: Grab sample

TYPE OF MATERIAL: Clay

UNFIRED CHARACTERISTICS: Fair workability and plasticity. Water of plasticity 20.0%. Safe drying. Air shrinkage 5.5%

P.C.E.: 4

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	+0.70	13.95	Pinkish brown	Hard
04	0.71	12.42	Reddish brown	Hard

REMARKS: Scumming on firing

POTENTIAL USES: None

CUMBERLAND COUNTY

Sample Number

CSP-23

TOPOGRAPHICAL SHEET: 21H/16W

LOCATION: On the southern shore of the Maccan River, 275 m west of sample CSP-22, in the area of Lower Maccan (Fig. 22).

UTM: 398790 E
5068700 N

GEOLOGICAL UNIT: Windsor Group, Mississippian age

DESCRIPTION: Reddish to brownish shale interbedded with limestone and mudstone.

SAMPLE INTERVAL: 6 m channel sample

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Slightly calcareous. Fair workability and plasticity. Water of plasticity 21.0% Cracks with rapid drying. Air shrinkage 5.4%.

P.C.E.: 3

FIRED CHARACTERISTICS:

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1835	2.76	10.10	Reddish brown	Very hard
1875	3.53	8.33	Reddish brown	Very hard
1910	4.70	6.98	Reddish brown	Very hard
1945	5.85	5.29	Reddish brown	Steel hard
1975	7.23	2.94	Reddish brown	Steel hard
2030	7.75	0.49	Dark red	Steel hard
2045	8.48	0.43	Dark red	Steel hard
2060	8.52	0.34	Dark red	Steel hard

POTENTIAL USES: None

CUMBERLAND COUNTY**Sample Number**

CSP-29

TOPOGRAPHICAL SHEET: 21H/16W**LOCATION:** Along the bank of River Hebert, north of Barronsfield, and approximately 915 m south of Minudie wharf (Fig. 22).**UTM:** 396010 E
5068370 N**GEOLOGICAL UNIT:** Canso Group, Upper Mississippian age**DESCRIPTION:** Arenaceous shale interbedded with thin beds of sandstone.**SAMPLE INTERVAL:** Grab sample**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Moderately calcareous. Good workability. Good plasticity. Water of plasticity 19.0%. Safe drying. Air shrinkage 4.8%.**P.C.E.:** 3-4**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1810	0.34	14.30	Light reddish brown	Fairly hard
1860	0.36	14.26	Light reddish brown	Fairly hard
1900	0.13	13.86	Reddish brown	Hard
1940	0.19	12.68	Reddish brown	Hard
1975	2.02	11.79	Reddish brown	Hard
2005	2.47	9.14	Reddish brown	Very hard
2935	4.01	6.59	Reddish brown	Very hard
2055	4.59	4.30	Dark reddish brown	Very hard
2075	6.05	3.06	Dark reddish brown	Steel hard
2090	6.19	2.09	Dark reddish brown	Steel hard
2100	7.30	2.03	Dark reddish brown	Steel hard

REMARKS: White specks throughout sample after firing.**POTENTIAL USES:** None

CUMBERLAND COUNTY**Sample Number**

CSP-35

TOPOGRAPHICAL SHEET: 21H/16W**LOCATION:** Along Cumberland Basin, between Mill Creek and Lower Cove (Fig. 22).**UTM:** 391430 E
5068140 N**GEOLOGICAL UNIT:** Windsor Group, Mississippian age**DESCRIPTION:** Horizon consists of shale and sandstone**ATTITUDE OF BEDDING:** 265°/35° SE**SAMPLE INTERVAL:** Chip sample across 3.7 m**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Moderately calcareous. Fair workability. Fairly lastic. Water of plasticity 21.0%. Cracks with rapid drying at 85°C. Air shrinkage 4.6%.**P.C.E.:** 3-4**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1820	0.55	16.32	Light brown	Fairly hard
1870	0.68	16.42	Light brown	Fairly hard
1910	0.49	16.26	Light brown	Fairly hard
1950	0.14	15.70	Light brown	Hard
1990	0.40	14.76	Light brown	hard
2020	1.61	12.32	Medium brown	Hard
2050	3.20	9.20	Medium brown	Very hard
2070	4.91	6.17	Dark brown	Very hard
2085	6.25	3.80	Dark brown	Steel hard

REMARKS: Sample has short firing range**POTENTIAL USES:** None

CUMBERLAND COUNTY**Sample Number**

CSP-36

TOPOGRAPHICAL SHEET: 21H/16W**LOCATION:** Along Cumberland Basin between Mill Creek and Lower Cove (Fig. 22).**UTM:** 391320 E
5068010 N**GEOLOGICAL UNIT:** windsor Group, Mississippian age**DESCRIPTION:** Reddish-brown shale**SAMPLE INTERVAL:** Grab sample**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Moderately calcareous. Fair workability. Water of plasticity 20.4%. Cracks with rapid drying at 85°C. Air shrinkage 4.5%.**P.C.E.:** 3-4**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1820	0.63	17.20	Orange brown	Fairly hard
1865	0.55	17.52	Orange brown	Hard
1910	0.37	17.17	Light brown	Hard
1955	0.06	16.30	Light brown	Hard
1985	0.42	15.20	Light brown	Hard
2015	1.98	12.38	Medium brown	Very hard
2040	3.56	9.54	Medium brown	Very hard
2065	5.13	5.34	Medium brown	Very hard
2000	6.48	2.19	Dark brown	Steel hard
2095	7.48	1.53	Dark brown	Steel hard

REMARKS: Sample has short firing range**POTENTIAL USES:** None

CUMBERLAND COUNTY**Sample Number**

CSP-38

TOPOGRAPHICAL SHEET: 21H/16W**LOCATION:** Between Mill Creek and Lower Cove, along the Cumberland Basin (Fig. 22).**UTM:** 391040 E
5067860 N**GEOLOGICAL UNIT:** Windsor Group, Mississippian age**DESCRIPTION:** Reddish-brown siltstone**SAMPLE INTERVAL:** Grab sample**TYPE OF MATERIAL:** Siltstone**UNFIRED CHARACTERISTICS:** Highly calcareous. Fair workability. Fairly plastic. Water of plasticity 20.0%. Cracks with rapid drying. Air shrinkage 4.5%.**P.C.E.:** 3-4**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1820	0.55	17.69	Orange brown	Fairly hard
1870	0.54	17.50	Light brown	Fairly hard
1915	0.25	16.70	Light brown	Fairly hard
1950	0.18	16.09	Light brown	Fairly hard
1990	0.51	15.05	Light brown	Hard
2020	1.80	12.50	Light brown	Hard
2045	4.03	7.92	Medium brown	Very hard
2065	6.18	4.11	Medium brown	Very hard
2080	7.98	1.27	Dark brown	Steel hard

REMARKS: Sample has short firing range**POTENTIAL USES:** None

CUMBERLAND COUNTY

Sample Number
CSP-39

TOPOGRAPHICAL SHEET: 21H/16W**LOCATION:** Along the Cumberland Basin, 91 m west of sample CSP-38 (Fig. 22).**UTM:** 390910 E
5067780 N**GEOLOGICAL UNIT:** Windsor Group, Mississippian age**DESCRIPTION:** Reddish-brown siltstone or shale.**ATTITUDE OF BEDDING:** Flat lying**SAMPLE INTERVAL:** Grab sample**TYPE OF MATERIAL:** Siltstone and shale**UNFIRED CHARACTERISTICS:** Slightly calcareous. Good workability. Good plasticity. Water of plasticity 21.0%. Cracks with rapid drying. Air shrinkage 5.4%.**P.C.E.:** 2 (started to bend at cone 1)**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1780	2.67	11.62	Salmon	Hard
1830	3.54	9.23	Salmon	Very hard
1875	4.84	7.95	Orange brown	Steel hard
1910	5.98	6.07	Orange brown	Steel hard
1945	6.98	4.36	Reddish brown	Steel hard
1972	8.12	3.68	Reddish brown	Steel hard
2000	8.63	1.44	Reddish brown	Steel hard
2025	9.15	0.31	Reddish brown	Steel hard
2045	8.66	0.57	Reddish brown	Steel hard
2065	8.08	0.73	Reddish brown	Steel hard

POTENTIAL USES: None

CUMBERLAND COUNTY

Sample Number
CSP-43

TOPOGRAPHICAL SHEET: 21H/09

LOCATION: Exposure at Boss Cove, along the Cumberland Basin (Fig. 24).

UTM: 388470 E
5066530 N

GEOLOGICAL UNIT: Riversdale Group, Pennsylvanian age

DESCRIPTION: Greyish to greenish shale, bed 7.5 m thick

ATTITUDE OF BEDDING: 262° /34° SE

SAMPLE INTERVAL: Chip sample across 7.5 m

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Slightly calcareous. Fair workability. Water of plasticity 20.1%. Safe drying. Air shrinkage 5.4%.

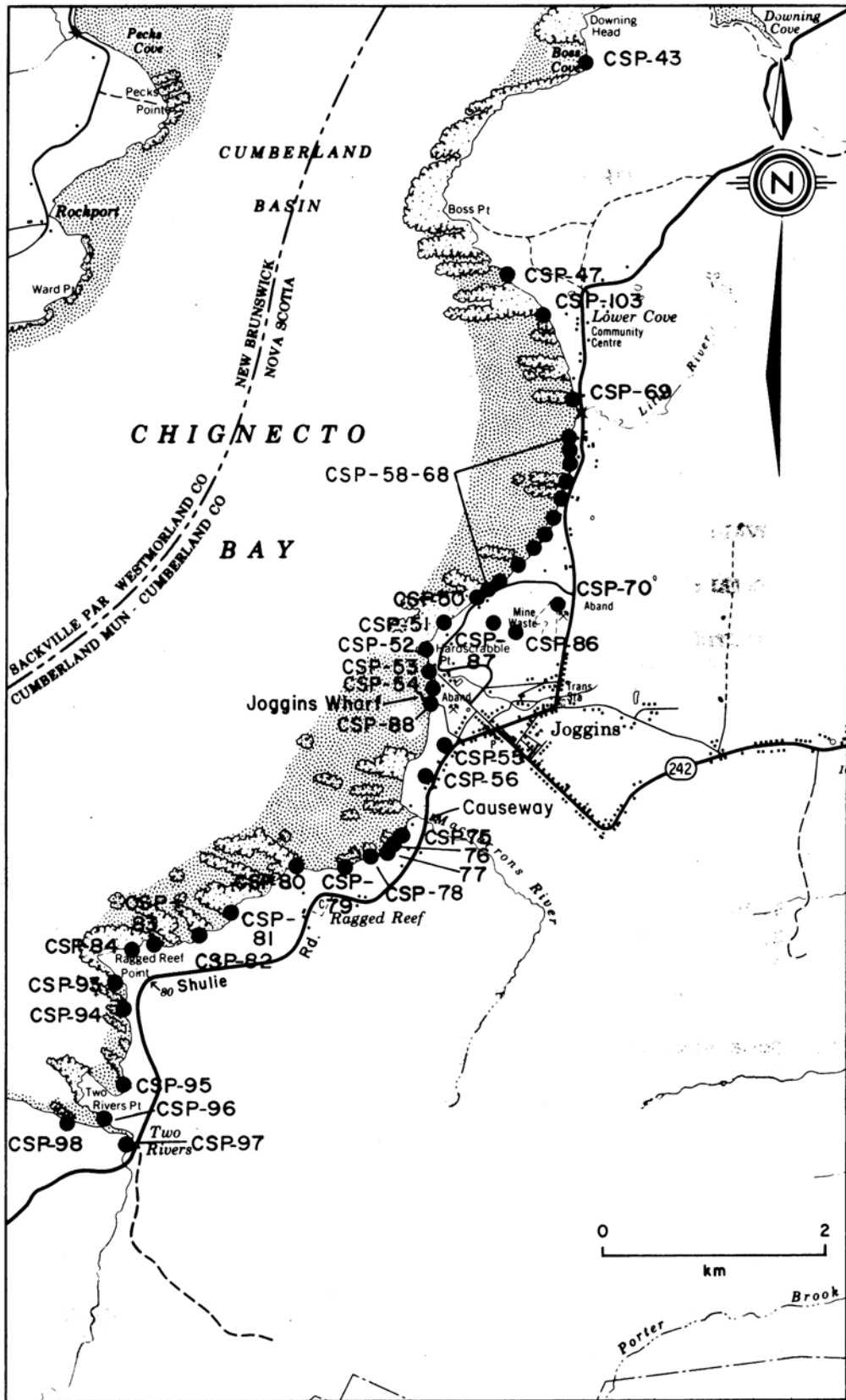
P.C.E.: 3-4

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	1.05	11.18	Reddish orange	Hard
04	2.30	8.60	Reddish brown	Very hard
02	4.95	4.23	Reddish brown	Steel hard

REMARKS Some scumming

POTENTIAL USES: Common brick



Ref. Map 21-H-9

Figure 24. Location map for samples CSP-43, 47, 50-56, 58-70, 75-84, 86-88, 93-98, 103 (Joggins)

CUMBERLAND COUNTY**Sample Number**

CSP-47

TOPOGRAPHICAL SHEET: 21H/09**LOCATION:** At Lower Cove, approximately 800 m northwest of grindstone quarry (Fig. 24).**UTM:** 387730 E
5064680 N**GEOLOGICAL UNIT:** Riversdale Group, Pennsylvanian age**DESCRIPTION:** Dark red shale interbedded with much narrower beds of siltstone. The exposure is 38 m thick.**ATTITUDE OF BEDDING:** 272°/30° SW**SAMPLE INTERVAL:** Chip sample across 15 m**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Highly calcareous. Poor workability. Poorly plastic. Water of plasticity 20.0%. Cracks with rapid drying. Air shrinkage 4.8%.**P.C.E.:** 3-4**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1780	0.77	15.80	Orange brown	Fairly hard
1830	0.84	15.61	Orange brown	Fairly hard
1875	0.44	15.66	Orange brown	Fairly hard
1920	0.17	15.30	Light brown	Fairly hard
1955	0.18	14.45	Light brown	Fairly hard
1990	1.09	12.35	Light brown	Hard
2025	2.70	9.66	Light brown	Hard
2050	3.94	5.66	Medium brown	Very hard
2075	5.10	2.57	Dark brown	Steel hard
2090	4.84	1.82	Dark brown	Steel hard

POTENTIAL USES: None

CUMBERLAND COUNTY**Sample Number**

CSP-50

TOPOGRAPHICAL SHEET: 21H/09**LOCATION:** Along the shore of Cumberland Basin, north of the wharf at Joggins (Fig. 24).**UTM:** 387410 E
5061800 N**GEOLOGICAL UNIT:** Cumberland Group, Pennsylvanian age**DESCRIPTION:** Light grey shale, 6 m in thickness.**ATTITUDE OF BEDDING:** 265° /23° SE**SAMPLE INTERVAL:** Grab sample**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Very good workability and plasticity. Water of plasticity 24.4%. Safe drying. Air shrinkage 4.65%.**P.C.E.:** 5**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1880	9.58	6.97	Light orange brown	Steel hard
1915	10.97	4.02	Light reddish brown	Steel hard
1955	11.15	2.08	Light reddish brown	Steel hard
1980	10.23	1.32	Light reddish brown	Steel hard
2010	10.19	0.85	Medium reddish brown	Steel hard
2035	9.68	1.03	Medium reddish brown	Steel hard
2060	9.17	0.71	Medium reddish brown	Steel hard
2080	10.82	0.75	Medium reddish brown	Steel hard

POTENTIAL USES: Possibly artware

CUMBERLAND COUNTY**Sample Number**

CSP-51

TOPOGRAPHICAL SHEET: 21H/09**LOCATION:** North of the wharf at Joggins, along the coast of Cumberland Basin (Fig. 24).**UTM:** 387100 E
5061590 N**GEOLOGICAL UNIT:** Cumberland Group, Pennsylvanian age**DESCRIPTION:** Grey clay and shale, approximately 3.7 m thick, underlain and overlain by coal seams.**ATTITUDE OF BEDDING:** 267° /19° SE**SAMPLE INTERVAL:** Grab sample**TYPE OF MATERIAL:** Clay and shale**UNFIRED CHARACTERISTICS:** Good plasticity and workability. Water of plasticity 30.0%. Cracks with rapid drying. Air shrinkage 6.0%.**P.C.E.:** 4**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1740	1.83	14.50	Light orange brown	Very hard
1795	4.64	12.40	Light orange brown	Very hard
1845	6.76	7.36	Light orange brown	Very hard
1890	8.20	4.59	Light orange brown	Steel hard
1925	9.66	4.64	Light reddish brown	Steel hard
1960	10.96	3.13	Light reddish brown	Steel hard
1985	11.04	2.45	Light reddish brown	Steel hard
2010	10.62	1.74	Medium reddish brown	Steel hard
2035	11.20	1.50	Medium reddish brown	Steel hard
2055	11.09	1.23	Medium reddish brown	Steel hard
2075	11.63	0.85	Medium reddish brown	Steel hard

POTENTIAL USES: None, high fired shrinkage

CUMBERLAND COUNTY

Sample Number

CSP-52

TOPOGRAPHICAL SHEET: 21H/09

LOCATION: Along the shore of Cumberland Basin, north of the wharf at Joggins (Fig. 24).

UTM: 386960 E
5061320 N

GEOLOGICAL UNIT: Cumberland Group, Pennsylvanian age

DESCRIPTION: Greyish and greenish shale and siltstone with narrow beds of sandstone.

ATTITUDE OF BEDDING: 267° /20° SE

SAMPLE INTERVAL: Grab sample from 4.6 m section

TYPE OF MATERIAL: Shale and siltstone

UNFIRED CHARACTERISTICS: Slightly calcareous, hard, sandy, light grey shale. Good workability. Fair plasticity. Water of plasticity 20.9%. Cracks with rapid drying. Air shrinkage 4.4%.

P.C.E.: 3-4

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	0.27	14.38	Reddish brown	Hard
04	0.52	12.81	Pale brown	Hard
02	2.07	9.04	Reddish brown	Hard

REMARKS: Some scumming on firing

POTENTIAL USES: None

CUMBERLAND COUNTY

Sample Number

CSP-53

TOPOGRAPHICAL SHEET: 21H/09

LOCATION: Along the coast of Chignecto Bay, north of the wharf at Joggins (Fig. 24).

UTM: 387000 E
5061120 N

GEOLOGICAL UNIT: Cumberland Group, Pennsylvanian age

DESCRIPTION: Exposure of shale, siltstone and minor sandstone. Bed is 6 m thick.

SAMPLE INTERVAL: Chip sample across 7.6 m

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Calcareous, hard, sandy, light grey shale. Good workability and plasticity. Water of plasticity 22.7%. Safe drying. Air shrinkage 5.5%

P.C.E.: 3-4

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	0.32	13.37	Reddish brown	Hard
04	1.25	11.31	Pale reddish brown	Hard
02	3.53	7.74	Reddish brown	Very hard

REMARKS: Scumming on firing.

POTENTIAL USES: None

CUMBERLAND COUNTY

Sample Number

CSP-54

TOPOGRAPHICAL SHEET: 21 H/09

LOCATION: Along the coast of Chignecto Bay, north of the wharf at Joggins (Fig. 24).

UTM: 387010 E
5060980 N

GEOLOGICAL UNIT: Cumberland Group, Pennsylvanian age

DESCRIPTION: Brownish-red, friable shale, 6 m thick.

SAMPLE INTERVAL: Chip sample across 7.6 m

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Calcareous, hard, sandy, brownish-grey shale. Good workability and plasticity. Water of plasticity 20.4%. Cracks with rapid drying. Air shrinkage 4.1%.

P.C.E.: 3

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	0.00	16.46	Pale reddish brown	Hard
04	0.53	14.80	Pale red	Hard
02	2.93	10.06	Brown	Very hard

REMARKS: Some scumming on firing.

POTENTIAL USES: None

CUMBERLAND COUNTY

Sample Number
CSP-55

TOPOGRAPHICAL SHEET: 21H/09**LOCATION:** Point of land along Cumberland Basin between Joggins wharf and the Causeway, along Shulie Road (Fig. 24).**UTM:** 387150 E
5060460 N**GEOLOGICAL UNIT:** Cumberland Group, Pennsylvanian age**DESCRIPTION:** Light brown shale and siltstone.**ATTITUDE OF BEDDING:** 270°/17° S**SAMPLE INTERVAL:** Chip sample across 6 m**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Very slightly calcareous, hard, sandy, light brown shale. Good workability and plasticity. Water of plasticity 21.6%. Safe drying. Air shrinkage 5.1%**P.C.E.:** 4**FIRED CHARACTERISTICS:**

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	1.86	10.94	Reddish orange	Very hard
04	4.21	6.01	Reddish brown	Very hard
02	7.01	2.40	Reddish brown	Steel hard

POTENTIAL USES: Common brick

CUMBERLAND COUNTY

Sample Number

CSP-56

TOPOGRAPHICAL SHEET: 21H/09

LOCATION: Between Joggins wharf and the causeway, along Shulie Road (Fig. 24).

UTM: 387030 E
5060240 N

GEOLOGICAL UNIT: Cumberland Group, Pennsylvanian age

DESCRIPTION: Light greenish.-brown shale and siltstone

SAMPLE INTERVAL: Chip sample across 9 m of shale

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Highly calcareous, hard and silty. Fair workability and plasticity. Water of plasticity 19.5%. Cracks with rapid drying. Air shrinkage 4.3%.

P.C.E.: 4

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	0.35	12.01	Moderate reddish orange	Hard
04	1.31	9.89	Pale reddish brown	Hard
02	3.47	7.60	Moderate reddish brown	Hard

REMARKS: Some scumming on firing

POTENTIAL USES: None

CUMBERLAND COUNTY

Sample Number

CSP-58

TOPOGRAPHICAL SHEET: 21H/09

LOCATION: At the southern part of Lower Cove, north of Joggins (Fig. 24)

UTM: 388290 E
5063200 N

GEOLOGICAL UNIT: Cumberland Group, Pennsylvanian age

DESCRIPTION: Greyish-brown shale

ATTITUDE OF BEDDING: 240°/24° SW

SAMPLE INTERVAL: 9 m chip sample

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Moderately calcareous. Good workability and plasticity. Water of plasticity 23.6%. Cracks with rapid drying at 85°C. Air shrinkage 5.9%.

P.C.E.: 4

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	4.24	7.73	Moderate reddish orange	Steel hard
04	6.47	2.97	Moderate reddish orange	Steel hard
02	7.80	1.67	Moderate reddish orange	Steel hard

REMARKS: Scumming on firing

POTENTIAL USES: None

CUMBERLAND COUNTY

Sample Number
CSP-59

TOPOGRAPHICAL SHEET: 21H/09

LOCATION: At the southern part of Lower Cove, north of Joggins (Fig. 24).

UTM: 388290 E
5063100 N

GEOLOGICAL UNIT: Cumberland Group, Pennsylvanian age

DESCRIPTION: Medium grey shale occurring along a cliff at Lower Cove.

ATTITUDE OF BEDDING: 254°/24° SW

SAMPLE INTERVAL: 9 m chip sample

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Slightly calcareous. Good workability and plasticity. Water of plasticity 23.8%. Cracks with rapid drying. Air shrinkage 5.4% 1

P.C.E.: 3

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	2.20	8.71	Reddish brown	Steel hard
04	6.53	4.52	Reddish brown	Steel hard
02	8.54	1.63	Dark reddish brown	Steel hard

REMARKS: Scumming on firing

POTENTIAL USES: None

CUMBERLAND COUNTY

Sample Number

CSP-60

TOPOGRAPHICAL SHEET: 21H/09

LOCATION: North of Joggins, at the southern part of Lower Cove (Fig. 24).

UTM: 388290 E
5062970 N

GEOLOGICAL UNIT: Cumberland Group, Pennsylvanian age

DESCRIPTION: Very light brown shale interbedded with siltstone and some sandstone.

ATTITUDE OF BEDDING: 254° /20° SW

SAMPLE INTERVAL: 12 m section, chip sample

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Highly calcareous. Good workability and plasticity. Water of plasticity 22.8%. Safe drying. Air shrinkage 4.8%.

P.C.E.: 3-4

FIRED CHARACTERISTICS:

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1840	0.87	18.23	Light orange brown	Hard
1890	1.04	17.72	Light orange brown	Hard
1930	1.14	17.29	Reddish brown	Hard
1970	1.23	16.99	Reddish brown	Hard
2000	1.72	16.76	Reddish brown	Hard
2020	2.57	15.01	Reddish brown	Very hard
2055	3.63	11.16	Reddish brown	Very hard
2075	6.07	6.87	Medium reddish brown	Steel hard
2095	8.05	4.43	Medium reddish brown	Steel hard

REMARKS: Short firing range. Grey and yellow specks throughout after firing.

POTENTIAL USES: None

CUMBERLAND COUNTY**Sample Number**

CSP-61

TOPOGRAPHICAL SHEET: 21H/09**LOCATION:** Exposure along the shore at Lower Cove, north of Joggins (Fig. 24).**UTM:** 388240 E
5062820 N**GEOLOGICAL UNIT:** Cumberland Group, Pennsylvanian age**DESCRIPTION:** Light grey shale**SAMPLE INTERVAL:** Grab sample from 3 m section**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Good workability and plasticity. Water of plasticity 25.6%. Cracks with rapid drying. Air shrinkage 5.1%.**P.C.E.:** 4**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1780	4.24	9.68	Orange brown	Very hard
1830	5.50	7.91	Orange brown	Steel hard
1875	4.47	5.49	Medium brown	Steel hard
1915	7.51	3.61	Medium brown	Steel hard
1950	9.14	1.78	Medium brown	Steel hard
1980	8.09	0.95	Medium brown	Steel hard
2005	8.65	0.87	Medium brown	Steel hard
2035	7.98	0.74	Medium brown	Steel hard
2055	5.89	1.34	Medium reddish brown	Steel hard

POTENTIAL USES: Possibly suitable for drain tile, whiteware and stoneware.

CUMBERLAND COUNTY

Sample Number

CSP-62

TOPOGRAPHICAL SHEET: 21H/09

LOCATION: Along a cliff at Lower Cove, north of Joggins (Fig. 24).

UTM: 388170 E
5062680 N

GEOLOGICAL UNIT: Cumberland Group, Pennsylvanian age

DESCRIPTION: Pale rose-grey shale

SAMPLE INTERVAL: 12 m chip sample

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Slightly calcareous. Good workability. Good plasticity. Water of plasticity 22.6%. Cracks with rapid drying. Air shrinkage 5.1%.

P.C.E.: 3

FIRED CHARACTERISTICS:

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1820	4.07	8.35	Orange brown	Steel hard
1865	5.33	5.91	Light reddish brown	Steel hard
1905	6.43	4.66	Light reddish brown	Steel hard
1940	7.24	3.20	Light reddish brown	Steel hard
1975	7.83	1.79	Light reddish brown	Steel hard
2000	8.16	0.79	Medium reddish brown	Steel hard
2030	7.93	1.15	Medium reddish brown	Steel hard
2055	7.66	0.72	Reddish brown	Steel hard
2075	7.20	0.77	Reddish brown	Steel hard

REMARKS: 100°F firing range

POTENTIAL USES: Possible use as common brick, sewer pipe and stoneware.

CUMBERLAND COUNTY**Sample Number**

CSP-63

TOPOGRAPHICAL SHEET: 21H/09**LOCATION:** Along the cliff at Lower Cove north of Joggins (Fig. 24).**UTM:** 388110 E
5062510 N**GEOLOGICAL UNIT:** Cumberland Group, Pennsylvanian age**DESCRIPTION:** Light greyish-brown shale and siltstone**SAMPLE INTERVAL:** Grab sample from 7.6 m section**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Highly calcareous. Plasticity and workability good. Water of plasticity 21.2%. Cracks with rapid drying. Air shrinkage 4.7%.**P.C.E.:** 3**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1795	2.12	13.49	Light reddish brown	Fairly hard
1845	2.85	12.20	Light reddish brown	Hard
1885	3.13	12.67	Light reddish brown	Hard
1925	3.88	10.76	Light reddish brown	Hard
1955	4.42	9.38	Medium reddish brown	Hard
1990	4.48	8.39	Medium reddish brown	Hard
2015	5.13	7.15	Medium reddish brown	Very hard
2035	5.79	5.01	Dark reddish brown	Very hard
2065	6.05	3.67	Dark reddish brown	Very hard
2080	5.83	3.61	Dark reddish brown	Very hard

POTENTIAL USES: Common brick and possibly drain tile.

CUMBERLAND COUNTY

Sample Number

CSP-64

TOPOGRAPHICAL SHEET: 21H/09

LOCATION: Along the cliff at Lower Cove north of Joggins (Fig. 24).

UTM: 388070 E
5062340 N

GEOLOGICAL UNIT: Cumberland Group, Pennsylvanian age

DESCRIPTION: Light brownish coloured shale

SAMPLE INTERVAL: Chip sample across 23 m of shale

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Moderately calcareous. Fair plasticity. Good workability. Water of plasticity 22.4%. Safe drying at 85°C. Air shrinkage 5.5%.

P.C.E.: 3

FIRED CHARACTERISTICS:

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1790	3.01	10.63	Medium orange brown	Hard
1835	3.91	9.04	Medium orange brown	Very hard
1885	5.53	7.10	Medium orange brown	Steel hard
1925	6.55	5.10	Light reddish brown	Steel hard
1955	7.46	3.39	Light reddish brown	Steel hard
1980	7.86	2.53	Light reddish brown	Steel hard
2010	8.23	1.54	Medium reddish brown	Steel hard
2035	9.55	1.02	Medium reddish brown	Steel hard
2060	7.35	1.58	Medium reddish brown	Steel hard
2075	5.11	1.13	Medium reddish brown	Steel hard

POTENTIAL USES: Possibly as raw material for common brick.

CUMBERLAND COUNTY

Sample Number
CSP-65

TOPOGRAPHICAL SHEET: 21H/09

LOCATION: Along the cliff at Lower Cove north of Joggins (Fig. 24).

UTM: 387970 E
5062210 N

GEOLOGICAL UNIT: Cumberland Group, Pennsylvanian age

DESCRIPTION: Light grey, fossiliferous shale.

SAMPLE INTERVAL: 5 m chip sample

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Slightly calcareous. Good workability .Good plasticity. Water of plasticity 24.4. Cracks with rapid drying. Air shrinkage 6.0%.

P.C.E.: 4

FIRED CHARACTERISTICS:

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1170	3.56	11.75	Light orange brown	Very hard
1840	5.08	10.33	Light orange brown	Very hard
1885	6.52	8.23	Medium reddish brown	Steel hard
1925	7.73	4.89	Medium reddish brown	Steel hard
1960	8.30	3.27	Medium reddish brown	Steel hard
1995	8.66	2.61	Medium reddish brown	Steel hard
2025	7.91	2.26	Medium reddish brown	Steel hard
2050	5.76	2.53	Medium reddish brown	Steel hard

POTENTIAL USES: Common brick and drain tile.

CUMBERLAND COUNTY

Sample Number

CSP-66

TOPOGRAPHICAL SHEET: 21H/09

LOCATION: Along the cliff south of Lower Cove and north of Joggins (Fig 24).

UTM: 387850 E
5062110 N

GEOLOGICAL UNIT: Cumberland Group, Pennsylvanian age

DESCRIPTION: Light grey shale with redbeds

SAMPLE INTERVAL: Chip sample from 12 m section of shale

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Good workability and plasticity. Water of plasticity 24.1%. Cracks with rapid drying. Air shrinkage 5.3%.

P.C.E.: 4

FIRED CHARACTERISTICS:

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1190	3.04	11.69	Orange brown	Hard
1840	4.17	9.37	Orange brown	Very hard
1880	5.32	7.90	Orange brown	Very hard
1915	6.57	5.34	Orange brown	Steel hard
1950	7.71	3.43	Light reddish brown	Steel hard
1980	7.85	2.22	Light reddish brown	Steel hard
2005	9.20	1.35	Light reddish brown	Steel hard
2030	9.32	0.35	Medium reddish brown	Steel hard
2055	9.44	0.47	Medium reddish brown	Steel hard
2075	9.10	0.44	Medium reddish brown	Steel hard

POTENTIAL USES: None

CUMBERLAND COUNTY

Sample Number

CSP-67

TOPOGRAPHICAL SHEET: 21H/09

LOCATION: On the shore of Cumberland Basin, south of Lower Cove, north of Joggins (Fig. 24).

UTM: 387680 E
5061940 N

GEOLOGICAL UNIT: Cumberland Group, Pennsylvanian age

DESCRIPTION: Medium brownish coloured shale

SAMPLE INTERVAL: 6 m chip sample

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Slightly calcareous. Good workability. Fair plasticity. Water of plasticity 24.0%. Cracks with rapid drying. Air shrinkage 5.2%.

P.C.E.: 3

FIRED CHARACTERISTICS:

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1790	3.54	10.23	Light orange brown	Very hard
1835	4.40	8.53	Light orange brown	Steel hard
1880	5.90	6.47	Medium reddish brown	Steel hard
1920	7.14	4.34	Medium reddish brown	Steel hard
1955	8.08	2.59	Medium reddish brown	Steel hard
1985	8.73	1.56	Medium reddish brown	Steel hard
2010	9.09	1.19	Medium reddish brown	Steel hard
2035	8.18	0.92	Medium reddish brown	Steel hard
2055	5.86	1.40	Medium reddish brown	Steel hard

POTENTIAL USES: Face brick, common brick and tile.

CUMBERLAND COUNTY**Sample Number**

CSP-68

TOPOGRAPHICAL SHEET: 21H/09**LOCATION:** Exposure along cliff at Lower Cove (Fig. 24).**UTM:** 387480 E
5061830 N**GEOLOGICAL UNIT:** Cumberland Group, Pennsylvanian age**DESCRIPTION:** Light greyish to brownish shale**SAMPLE INTERVAL:** 4.6 m chip sample**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Slightly calcareous. Good workability and plasticity. Water of plasticity 22%. Safe drying at 85°C. Air shrinkage 4.7%.**P.C.E.:** 3-4**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1835	3.98	9.43	Light orange brown	Steel hard
1875	5.21	7.78	Light orange brown	Steel hard
1915	6.15	6.0	Light orange brown	Steel hard
1950	7.23	4.04	Light orange brown	Steel hard
1985	8.17	2.88	Medium reddish brown	Steel hard
2010	8.50	2.42	Medium reddish brown	Steel hard
2030	8.68	2.04	Medium reddish brown	Steel hard
2050	8.58	1.42	Medium reddish brown	Steel hard

POTENTIAL USES: Face brick, common brick and tile.

CUMBERLAND COUNTY**Sample Number**

CSP-69

TOPOGRAPHICAL SHEET: 21H/09**LOCATION:** Lower Cove, along the shore of the Cumberland Basin, in the vicinity of Joggins (Fig. 24).**UTM:** 388330 E
5063510 N**GEOLOGICAL UNIT:** Cumberland Group, Pennsylvanian age**DESCRIPTION:** Dark brown, fine grained shale.**SAMPLE INTERVAL:** 21 m chip sample**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Slightly calcareous. Good workability and plasticity. Water of plasticity 24.8%. Cracks with rapid drying. Air shrinkage 5.4%.**P.C.E.:** 3 (started to bend at Cone 1)**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1755	2.61	12.20	Orange brown	Very hard
1805	3.52	10.72	Orange brown	Very hard
1855	4.55	8.87	Orange brown	Steel hard
1895	4.61	6.70	Orange brown	Steel hard
1930	6.62	4.69	Orange brown	Steel hard
1965	7.72	3.08	Reddish brown	Steel hard
1990	8.03	1.68	Reddish brown	Steel hard
2015	8.94	0.92	Reddish brown	Steel hard
2035	9.38	0.48	Reddish brown	Steel hard
2050	8.39	1.05	Reddish brown	Steel hard

POTENTIAL USES: Face brick, common brick and tile.

CUMBERLAND COUNTY

Sample Number

CSP-70

TOPOGRAPHICAL SHEET: 21H/09

LOCATION: Along the old coal mine road, northwest of the Town of Joggins (Fig. 24).

UTM: 388150 E
5061740 N

GEOLOGICAL UNIT: Cumberland Group, Pennsylvanian age

DESCRIPTION: Grey to bluish clay containing a few fossils, from a pit on the Dinty coal seam.

SAMPLE INTERVAL: Chip sample across 1 m bed of clay

TYPE OF MATERIAL: Clay

UNFIRED CHARACTERISTICS: Fair workability and plasticity. Water of plasticity 32.0%. Cracks with rapid drying. Air shrinkage 7.0%.

P.C.E.: 6

FIRED CHARACTERISTICS:

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1795	5.51	24.07	Orange buff	Hard
1845	6.99	20.45	Orange buff	Hard
1885	8.62	17.64	Orange buff	Very hard
1925	10.49	13.53	Medium brown	Very hard
1955	11.49	10.81	Medium brown	Steel hard
1985	13.63	7.35	Medium brown	Steel hard
2015	14.54	5.18	Medium brown	Steel hard
2045	14.38	4.81	Medium brown	Steel hard
2070	14.36	2.61	Medium brown	Steel hard
2085	13.12	2.10	Medium brown	Steel hard

POTENTIAL USES: None due to the high firing shrinkage.

CUMBERLAND COUNTY

Sample Number

CSP-71

TOPOGRAPHICAL SHEET: 21H/09

LOCATION: Along the Maccan River, approximately 1 km northwest of South Athol (Fig. 21).

UTM: 403450 E
5055780 N

GEOLOGICAL UNIT: Cumberland Group, Pennsylvanian age

DESCRIPTION: Dark pinkish-brown shale with minor siltstone. The bed is approximately 12 m thick.

ATTITUDE OF BEDDING: Strike: 230°
Dip: Not determined

SAMPLE INTERVAL: 12 m chip sample

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Slightly calcareous. Good workability and plasticity. Water of plasticity 20.8%. Cracks with rapid drying. Air shrinkage 5.3%.

P.C.E.: 3-4

FIRED CHARACTERISTICS:

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1865	2.42	9.29	Medium orange brown	Very hard
1900	2.81	8.01	Medium orange brown	Steel hard
1935	3.94	6.67	Medium orange brown	Steel hard
1975	4.55	5.39	Reddish brown	Steel hard
2000	4.85	3.96	Reddish brown	Steel hard
2025	5.19	3.14	Reddish brown	Steel hard
2045	5.71	2.50	Reddish brown	Steel hard
2065	6.31	2.07	Reddish brown	Steel hard

POTENTIAL USES: Face brick, tile and possibly earthenware and artware.

CUMBERLAND COUNTY**Sample Number**

CSP-72

TOPOGRAPHICAL SHEET: 21H/09**LOCATION:** Along the bank of River Hebert, approximately 2.4 km south of the highway bridge (Fig. 23).**UTM:** 392530 E
5058850 N**GEOLOGICAL UNIT:** Cumberland Group, Pennsylvanian age**DESCRIPTION:** Greyish coloured shale**ATTITUDE OF BEDDING:** 240° /16° SE**SAMPLE INTERVAL:** 3 m channel sample**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Noncalcareous. Good workability and plasticity. Water of plasticity 20.8%. Cracks with rapid drying. Air shrinkage 5.2%.**P.C.E.:** 4**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1840	3.16	9.78	Medium orange brown	Very hard
1855	4.22	8.16	Medium orange brown	Very hard
1915	4.35	6.23	Medium orange brown	Steel hard
1950	4.55	5.25	Medium orange brown	Steel hard
1975	6.23	4.10	Medium orange brown	Steel hard
2005	6.78	3.05	Medium orange brown	Steel hard
2025	7.12	2.46	Medium orange brown	Steel hard
2045	9.57	2.06	Medium orange brown	Steel hard

POTENTIAL USES: Common brick, face brick, tile and sewer pipe.

CUMBERLAND COUNTY

Sample Number

CSP-73

TOPOGRAPHICAL SHEET: 21H/09

LOCATION: 2.4 km south of the highway bridge, along the bank of River Hebert (Fig. 23).

UTM: 392420 E
5058770 N

GEOLOGICAL UNIT: Cumberland Group, Pennsylvanian age

DESCRIPTION: Grey shale

ATTITUDE OF BEDDING: 225°/16° SE

SAMPLE INTERVAL: 8 m channel sample

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Good workability. Very plastic. Water of plasticity 22.8%. Cracks with rapid drying. Air shrinkage 5.2%.

P.C.E.: 6

FIRED CHARACTERISTICS:

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1870	4.98	7.72	Orange brown	Steel hard
1910	6.07	6.67	Orange brown	Steel hard
1950	7.05	4.34	Orange brown	Steel hard
1975	7.67	3.07	Orange brown	Steel hard
2010	8.28	1.49	Reddish brown	Steel hard
2035	8.43	1.30	Reddish brown	Steel hard
2055	8.71	1.07	Reddish brown	Steel hard
2075	7.61	1.11	Reddish brown	Steel hard

POTENTIAL USES: Common brick, face brick, tile and sewer pipe.

CUMBERLAND COUNTY**Sample Number**

CSP-74

TOPOGRAPHICAL SHEET: 21H/09**LOCATION:** Along the bank of River Hebert, approximately 2.6 km south of the highway bridge (Fig. 23).**UTM:** 391970 E
5058310 N**GEOLOGICAL UNIT:** Cumberland Group, Pennsylvanian age**DESCRIPTION:** Light brown shale**ATTITUDE OF BEDDING:** 265° /21° SE**SAMPLE INTERVAL:** 10.7 m channel sample**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Good workability and plasticity. Water of plasticity 22.8%. Safe drying at 85°C. Air shrinkage 5.0%.**P.C.E.:** 3-4**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1815	2.17	12.78	Orange brown	Very hard
1860	2.70	11.27	Orange brown	Very hard
1900	3.84	10.09	Orange brown	Very hard
1935	5.02	8.01	Orange brown	Very hard
1965	5.97	5.90	Medium reddish brown	Steel hard
1990	6.78	3.94	Medium reddish brown	Steel hard
2020	9.67	2.13	Medium reddish brown	Steel hard
2040	8.05	1.63	Medium reddish brown	Steel hard
2055	8.23	1.08	Medium reddish brown	Steel hard
2075	8.57	0.77	Medium reddish brown	Steel hard

POTENTIAL USES: Common brick, face brick and tile

CUMBERLAND COUNTY

Sample Number

CSP-75

TOPOGRAPHICAL SHEET: 21H/09

LOCATION: Exposure occurs between McCarrons River and Ragged Reef Point on the shore of Chignecto Bay (Fig. 24).

UTM: 386720 E
5059650 N

GEOLOGICAL UNIT: Cumberland Group, Pennsylvanian age

DESCRIPTION: Grey shale, with associated narrow seams of coal.

ATTITUDE OF BEDDING: 262°/19° SE

SAMPLE INTERVAL: 3.7 m chip sample

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Good workability and plasticity. Water of plasticity 22.8%. Cracks with rapid drying. Air shrinkage 4.3%.

P.C.E.: 3-4

FIRED CHARACTERISTICS:

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1795	3.59	10.75	Orange brown	Very hard
1840	4.75	8.57	Orange brown	Very hard
1885	5.95	6.91	Orange brown	Steel hard
1920	6.44	4.68	Orange brown	Steel hard
1955	7.88	3.24	Orange brown	Steel hard
1985	8.46	1.93	Brown	Steel hard
2010	8.63	1.16	Brown	Steel hard
2030	8.89	0.97	Brown	Steel hard
2050	8.83	0.90	Brown	Steel hard

POTENTIAL USES: Common brick, face brick and tile.

CUMBERLAND COUNTY

Sample Number
CSP-76

TOPOGRAPHICAL SHEET: 21H/09**LOCATION:** On the shore of Chignecto Bay, south of McCarrons River and north of Ragged Reef Point (Fig 24).**UTM:** 386670 E
5059610 N**GEOLOGICAL UNIT:** Cumberland Group, Pennsylvanian age**DESCRIPTION:** Light grey, fossiliferous shale underlying a coal seam.**SAMPLE INTERVAL:** 1 m chip sample**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Good workability. Very plastic. Water of plasticity 32.0%. Safe drying. Air shrinkage 4.8%.**P.C.E.:** 5**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1820	5.81	19.13	Light salmon	Hard
1865	8.31	14.59	Light salmon	Very hard
1900	10.29	8.73	Light salmon	Steel hard
1935	12.28	4.10	Light salmon	Steel hard
1965	13.01	1.66	Reddish brown	Steel hard
1990	13.51	1.48	Reddish brown	Steel hard
2015	13.65	1.69	Reddish brown	Steel hard
2035	11.24	1.70	Reddish brown	Steel hard
2055	9.63	2.86	Reddish brown	Steel hard

POTENTIAL USES: Not suitable for use by itself due to the high fired shrinkage.

CUMBERLAND COUNTY

Sample Number
CSP-77

TOPOGRAPHICAL SHEET: 21H/09**LOCATION:** On the shore of Chignecto Bay, south of McCarrons River, and 61 m south of sample CSP-75 (Fig. 24).**UTM:** 386610 E
5059550 N**GEOLOGICAL UNIT:** Cumberland Group, Pennsylvanian age**DESCRIPTION:** Grey shale**ATTITUDE OF BEDDING:** 262°/19° SE**SAMPLE INTERVAL:** 3.7 m chip sample**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Good workability and plasticity. Water of plasticity 25.2%. Safe drying. ~ir shrinkage 5.3%.**P.C.E.:** 5**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1775	3.75	11.76	Light orange brown	Very hard
1825	4.78	9.80	Light orange brown	Very hard
1865	6.01	7.95	Light orange brown	Steel hard
1905	7.30	6.33	Light orange brown	Steel hard
1945	7.90	3.98	Light orange brown	Steel hard
1975	8.97	2.70	Light orange brown	Steel hard
2005	9.20	2.20	Light orange brown	Steel hard
2035	9.38	2.03	Reddish brown	Steel hard
2055	9.37	1.54	Reddish brown	Steel hard
2075	9.14	1.18	Reddish brown	Steel hard

POTENTIAL USES: Common brick, face brick and tile.

CUMBERLAND COUNTY**Sample Number**

CSP-78

TOPOGRAPHICAL SHEET: 21H/09**LOCATION:** Along the shore of Chignecto Bay, south of McCarrons River, and southwest of sample CSP-77 (Fig. 24).**UTM:** 386430 E
5059460 N**GEOLOGICAL UNIT:** Cumberland Group, Pennsylvanian age**DESCRIPTION:** Reddish and greyish coloured shale.**ATTITUDE OF BEDDING:** 273°/12° SW**SAMPLE INTERVAL:** 6 m chip sample**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Noncalcareous. Fair workability. Good plasticity. Water of plasticity 25.0%. Cracks with rapid drying. Air shrinkage 5.2%.**P.C.E.:** 5**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1790	4.12	11.63	Orange brown	Very hard
1840	5.69	9.34	Orange brown	Very hard
1855	6.69	7.37	Orange brown	Steel hard
1920	8.38	5.41	Orange brown	Steel hard
1955	9.50	3.03	Orange brown	Steel hard
1985	9.78	1.62	Reddish brown	Steel hard
2010	9.80	1.32	Reddish brown	Steel hard
2035	9.56	1.04	Reddish brown	Steel hard
2065	9.53	0.94	Reddish brown	Steel hard
2080	8.60	0.70	Reddish brown	Steel hard

POTENTIAL USES: Common brick.

CUMBERLAND COUNTY**Sample Number**

CSP-79

TOPOGRAPHICAL SHEET: 21H/09**LOCATION:** Along the shore of Chignecto Bay, south of McCarrons River, near Joggins, southwest of CSP-78 (Fig. 24).**UTM:** 386230 E
5059420 N**GEOLOGICAL UNIT:** Cumberland Group, Pennsylvanian age**DESCRIPTION:** Medium grey shale**ATTITUDE OF BEDDING:** 90° /14° S**SAMPLE INTERVAL:** 3.7 m chip sample**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Good workability and plasticity. Water of plasticity 20.0%. Safe drying at 85°C. Air shrinkage 4.2%.**P.C.E.:** 6**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1800	3.16	10.42	Orange brown	Very hard
1855	4.15	8.93	Orange brown	Very hard
1895	5.53	7.05	Orange brown	Steel hard
1935	6.68	5.04	Orange brown	Steel hard
1965	7.44	3.04	Orange brown	Steel hard
2000	7.66	2.10	Orange brown	Steel hard
2035	7.60	1.59	Reddish brown	Steel hard
2070	7.40	1.22	Reddish brown	Steel hard
2095	7.27	1.02	Reddish brown	Steel hard
2115	6.16	1.05	Reddish brown	Steel hard
2135	4.63	0.99	Reddish brown	Steel hard

POTENTIAL USES: Common brick and tile.

CUMBERLAND COUNTY**Sample Number**

CSP-80

TOPOGRAPHICAL SHEET: 21H/09**LOCATION:** Between McCarrons River and Ragged Reef Point, southwest of Joggins (Fig. 24).**UTM:** 305820 E
5059410 N**GEOLOGICAL UNIT:** Cumberland Group, Pennsylvanian age**DESCRIPTION:** Brownish-grey shale**SAMPLE INTERVAL:** 9 m chip sample**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Good workability and plasticity. Water of plasticity 21.6%. Safe drying at 85°C. Air shrinkage 4.7%.**P.C.E.:** 4**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1760	2.45	11.14	Orange brown	Very hard
1805	3.31	9.65	Orange brown	Very hard
1855	4.85	7.75	Orange brown	Steel hard
1895	5.99	6.61	Orange brown	Steel hard
1935	6.69	4.64	Orange brown	Steel hard
1965	7.45	3.26	Orange brown	Steel hard
1995	7.52	2.41	Reddish brown	Steel hard
2020	8.20	1.75	Reddish brown	Steel hard
2045	8.39	1.57	Reddish brown	Steel hard
2060	8.45	1.37	Reddish brown	Steel hard
2075	8.34	0.94	Reddish brown	Steel hard

POTENTIAL USES: Common brick and tile.

CUMBERLAND COUNTY

Sample Number
CSP-81

TOPOGRAPHICAL SHEET: 21H/09

LOCATION: Along the shore, at Ragged Reef Point, southwest of Joggins (Fig. 24).

UTM: 385190 E
5058990 N

GEOLOGICAL UNIT: Cumberland Group, Pennsylvanian age

DESCRIPTION: Red to greenish coloured shale.

ATTITUDE OF BEDDING: 268° /14° SE

SAMPLE INTERVAL: 4.6 m chip sample

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Good workability and plasticity. Water of plasticity 23.6%. Cracks with rapid drying. Air shrinkage 5.2%.

P.C.E.: 5

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	3.87	7.45	Moderate reddish brown	Steel hard
04	6.67	5.19	Moderate reddish brown	Steel hard
02	9.00	0.32	Dark moderate reddish brown	Steel hard

POTENTIAL USES: Face brick, tile and sewer pipe.

CUMBERLAND COUNTY**Sample Number**

CSP-82

TOPOGRAPHICAL SHEET: 21H/09**LOCATION:** Southwest of sample CSP-81 at Ragged Reef Point, southwest of Joggins (Fig. 24).**UTM:** 384910 E
5058820 N**GEOLOGICAL UNIT:** Cumberland Group, Pennsylvanian age**DESCRIPTION:** Greenish to reddish coloured shale**ATTITUDE OF BEDDING:** 330°/18° SW**SAMPLE INTERVAL:** Chip sample across 4.6 m.**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Good workability and plasticity. Water of plasticity 22.4%. Cracks with rapid drying. Air shrinkage 4.2%.**P.C.E.:** 4**FIRED CHARACTERISTICS:**

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	2.79	9.12	Light moderate reddish brown	Very hard
04	4.36	4.13	Light moderate reddish brown	Steel hard
02	7.99	1.75	Reddish brown	Steel hard

POTENTIAL USES: Face brick, tile and sewer pipe.

CUMBERLAND COUNTY

Sample Number

CSP-83

TOPOGRAPHICAL SHEET: 21H/09

LOCATION: Near the tip of Ragged Reef Point, southwest of the Town of Joggins (Fig. 24).

UTM: 384500 E
5058760 N

GEOLOGICAL UNIT: Cumberland Group, Pennsylvanian age

DESCRIPTION: Light brown shale

SAMPLE INTERVAL: 4.6 m chip sample

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Good workability and plasticity. Water of plasticity 24.4%. Cracks with rapid drying at 85°C. Air shrinkage 5.3%.

P.C.E.: 4

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	3.08	7.69	Moderate reddish brown	Very hard
04	5.55	3.49	Moderate reddish brown	Steel hard
02	9.14	0.32	Dark moderate reddish brown	Steel hard

REMARKS: Some scumming on firing.

POTENTIAL USES: Common brick, hollow tile and drain tile.

CUMBERLAND COUNTY

Sample Number

CSP-84

TOPOGRAPHICAL SHEET: 21H/09

LOCATION: East of the tip of Ragged Reef Point, southwest of Joggins (Fig. 24).

UTM: 384330 E
5058700 N

GEOLOGICAL UNIT: Cumberland Group, Pennsylvanian age

DESCRIPTION: Greyish shale and siltstone

SAMPLE INTERVAL: 3.7 m chip sample

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Hard, silty grey shale. Good workability and plasticity. Water of plasticity 22.8%. Safe drying. Air shrinkage 4.2%.

P.C.E.: 5

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	2.43	10.28	Light moderate reddish brown	Very hard
04	4.87	4.77	Moderate reddish brown	Steel hard
02	8.01	2.40	Moderate reddish brown	Steel hard

REMARKS: Scumming on firing.

POTENTIAL USES: None

CUMBERLAND COUNTY

Sample Number
CSP-86

TOPOGRAPHICAL SHEET: 21H/09**LOCATION:** Joggins area, sample taken from under the 'Dirty Coal seam' (Fig. 24).**UTM:** 387760 E
5061480 N**GEOLOGICAL UNIT:** Cumberland Group, Pennsylvanian age**DESCRIPTION:** Greyish to bluish clay underlying a coal seam. The clay contains some pebbles.**SAMPLE INTERVAL:** 1.2 m channel sample**TYPE OF MATERIAL:** Clay**UNFIRED CHARACTERISTICS:** Very good workability and plasticity. Water of plasticity 24.4%. Safe drying at 85°C. Air shrinkage 5.2%.**P.C.E.:** 5**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1810	2.72	13.09	Light buff	Hard
1855	3.82	10.92	Light buff	Very hard
1905	5.39	8.57	Brownish buff	Very hard
1945	6.82	5.67	Brownish buff	Steel hard
1980	8.48	3.60	Brownish buff	Steel hard
2010	9.27	0.156	Brownish buff	Steel hard
2035	9.14	0.82	Medium brown	Steel hard
2060	8.17	0.59	Medium brown	Steel hard
2080	4.57	1.77	Medium brown	Steel hard

POTENTIAL USES: Common brick, face brick, tile and if oven fired at 2080°F earthenware and artware also.

CUMBERLAND COUNTY

Sample Number
CSP-87

TOPOGRAPHICAL SHEET: 21H/09

LOCATION: Joggins area (Fig. 24).

UTM: 387620 E
5061580 N

GEOLOGICAL UNIT: Cumberland Group, Pennsylvanian age

DESCRIPTION: Unconsolidated, greenish-grey clay

SAMPLE INTERVAL: 1.2 m chip sample

TYPE OF MATERIAL: Clay

UNFIRED CHARACTERISTICS: Very good workability and plasticity. Water of plasticity 23.0%. Cracks with rapid drying. Air shrinkage 6.1%. Sample contains some pebbles.

P.C.E.: 3-4

FIRED CHARACTERISTICS:

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1760	1.27	11.79		Hard
1810	2.08	10.25		
1850	2.48	9.23	Light reddish brown	Very hard
1895	2.98	7.18	Light reddish brown	Very hard
1935	3.88	5.78	Light reddish brown	Very hard
1965	4.36	4.18	Medium reddish brown	Steel hard
1995	5.73	3.17	Medium reddish brown	Steel hard
2025	5.99	2.59	Medium reddish brown	Steel hard
2045	6.11	2.25	Medium reddish brown	Steel hard
2065	6.30	2.26	Medium reddish brown	Steel hard

POTENTIAL USES: Common brick, face brick, tile, sewer pipe, earthenware and artware.

CUMBERLAND COUNTY

Sample Number
CSP-88

TOPOGRAPHICAL SHEET: 21H/09**LOCATION:** Along the shore of Chignecto Bay, approximately 15 m north of the wharf at Joggins (Fig. 24).**UTM:** 387000 E
5060900 N**GEOLOGICAL UNIT:** Cumberland Group, Pennsylvanian age**DESCRIPTION:** Hard, grey, fossiliferous shale and clay, between Joggins and Queen coal seams.**SAMPLE INTERVAL:** 1.2 m chip sample**TYPE OF MATERIAL:** Shale and clay**UNFIRED CHARACTERISTICS:** Good workability. Very plastic. Water of plasticity 27.8%. Safe drying. Air shrinkage 5.9%.**P.C.E.:** 4**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1765	3.47	12.94	Orange brown	Very hard
1815	4.83	10.84	Orange brown	Very hard
1855	6.22	8.43	Orange brown	Steel hard
1895	7.87	6.05	Orange brown	Steel hard
1925	9.23	3.24	Medium reddish brown	Steel hard
1955	9.88	1.53	Medium reddish brown	Steel hard
1985	10.18	0.74	Medium reddish brown	Steel hard
2015	10.22	0.66	Medium reddish brown	Steel hard
2035	9.95	0.63	Medium reddish brown	Steel hard
2055	9.64	0.62	Medium reddish brown	Steel hard

POTENTIAL USES: Common brick and face brick.

CUMBERLAND COUNTY**Sample Number**

CSP-90

TOPOGRAPHICAL SHEET: 21H/09**LOCATION:** Sample from Kimberly coal seam, at River Hebert Coal Company, taken about 152 m down slope (Fig. 23).**UTM:** 393050 E
5061250 N**GEOLOGICAL UNIT:** Cumberland Group, Pennsylvanian age**DESCRIPTION:** Dark grey shale containing coal and pyrite, from a bed within the coal seam.**SAMPLE INTERVAL:** 1 m chip sample**TYPE OF MATERIAL:** Clay**UNFIRED CHARACTERISTICS:** Fair workability and plasticity. Water of plasticity 20.8%. Cracks with rapid drying. Air shrinkage 4.1%**P.C.E.:** 8**FIRED CHARACTERISTICS:**

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	2.60	11.59	Light moderate reddish orange	Hard
04	1.57	7.88	Light pale reddish brown	Very hard
02	1.74	4.60	Light pale reddish brown	Very hard

REMARKS: Some scumming on firing. Cracked on firing.**POTENTIAL USES:** None

CUMBERLAND COUNTY**Sample Number**

CSP-92

TOPOGRAPHICAL SHEET: 21H/09**LOCATION:** River Hebert Coal Company in River Hebert, sample taken approximately 152 m down slope (Fig. 23).**UTM:** 393050 E
5061250 N**GEOLOGICAL UNIT:** Cumberland Group, Pennsylvanian age**DESCRIPTION:** Grey to darkish grey shale and clay.**SAMPLE INTERVAL:** 1.2 m chip sample**TYPE OF MATERIAL:** Shale and clay**UNFIRED CHARACTERISTICS:** Good workability. Very plastic. Water of plasticity 29.8%. Cracked on drying. Air shrinkage 5.5%.**P.C.E.:** 4-5**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1775	2.72	19.38	Salmon	Hard
1825	4.50	15.84	Salmon	Hard
1870	6.30	12.42	Salmon	Very hard
1905	8.13	8.53	Salmon	Steel hard
1935	10.07	5.52	Salmon	Steel hard
1965	11.62	2.42	Reddish brown	Steel hard
1990	11.57	0.87	Reddish brown	Steel hard
2015	11.75	0.91	Reddish brown	Steel hard
2035	11.38	1.04	Reddish brown	Steel hard
2055	10.28	1.59	Reddish brown	Steel hard

POTENTIAL USES: Raw material of no value by itself as clay product due to high fired shrinkage.

CUMBERLAND COUNTY**Sample Number**

CSP-93

TOPOGRAPHICAL SHEET: 21H/09**LOCATION:** Section along shore line of Chignecto Bay, south of Ragged Reef Point and north of Two Rivers (Fig. 24).**UTM:** 384190 E
5058430 N**GEOLOGICAL UNIT:** Cumberland Group, Pennsylvanian age**DESCRIPTION:** Rose-brown shale.**ATTITUDE OF BEDDING:** 285° 124° SW**SAMPLE INTERVAL:** 10.7 m chip sample**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Good workability and plasticity. Water of plasticity 22.4%. Cracks with rapid drying. Air shrinkage 5.1%.**P.C.E.:** 4**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1760	2.03	11.29	Pinkish brown	Very hard
1810	2.73	9.78	Orange brown	Very hard
1855	3.99	8.14	Orange brown	Very hard
1895	5.52	6.80	Orange brown	Steel hard
1935	6.13	5.28	Orange brown	Steel hard
1965	7.37	3.63	Orange brown	Steel hard
1995	8.17	2.16	Medium reddish brown	Steel hard
2015	8.78	1.58	Medium reddish brown	Steel hard
2035	8.81	1.02	Medium reddish brown	Steel hard
2055	8.55	0.79	Medium reddish brown	Steel hard

POTENTIAL USES: Common and face brick.

CUMBERLAND COUNTY**Sample Number**

CSP-94

TOPOGRAPHICAL SHEET: 21H/09**LOCATION:** North of Two Rivers, and south of Ragged Reef Point, along the shore of Chignecto Bay (Fig. 24).**UTM:** 384220 E
5058220 N**GEOLOGICAL UNIT:** Cumberland Group, Pennsylvanian age**DESCRIPTION:** Red to greenish shale.**ATTITUDE OF BEDDING:** 315° /24° S**SAMPLE INTERVAL:** 9 m chip sample**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Good workability and plasticity. Water of plasticity 24.4%. Cracks with rapid drying. Air shrinkage 5.8%.**P.C.E.:** 4-5**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1770	2.32	12.16	Orange brown	Hard
1820	3.34	11.31	Orange brown	Very hard
1865	4.41	9.04	Orange brown	Very hard
1900	5.84	7.04	Orange brown	Steel hard
1935	7.10	5.23	Orange brown	Steel hard
1965	8.23	3.29	Orange brown	Steel hard
1995	8.98	1.55	Light reddish brown	Steel hard
2020	9.38	0.83	Light reddish brown	Steel hard
2040	9.61	0.73	Light reddish brown	Steel hard
2060	9.26	0.57	Light reddish brown	Steel hard

POTENTIAL USES: Common brick, face brick and sewer pipe.

CUMBERLAND COUNTY**Sample Number**

CSP-95

TOPOGRAPHICAL SHEET: 21H/09**LOCATION:** Along the shore of Chignecto Bay, north of Two Rivers (Fig. 24).**UTM:** 384220 E
5057460 N**GEOLOGICAL UNIT:** Cumberland Group, Pennsylvanian age**DESCRIPTION:** Brownish coloured, sandy shale.**SAMPLE INTERVAL:** 9 m chip sample, 4.5 kg.**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Fair workability and plasticity. Water of plasticity 22.6%. Safe drying. Air shrinkage 5.8%.**P.C.E.:** 3-4**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1795	1.55	11.04	Light orange brown	Very hard
1845	2.85	9.87	Light orange brown	Very hard
1885	3.79	8.65	Light orange brown	Steel hard
1925	4.16	7.29	Medium orange brown	Steel hard
1965	5.62	5.75	Medium orange brown	Steel hard
1995	6.17	4.29	Medium reddish brown	Steel hard
2020	6.57	3.50	Medium reddish brown	Steel hard
2045	7.17	2.78	Medium reddish brown	Steel hard
2065	7.96	2.18	Medium reddish brown	Steel hard

POTENTIAL USES: Common and face brick.

CUMBERLAND COUNTY**Sample Number**

CSP-96

TOPOGRAPHICAL SHEET: 21H/09**LOCATION:** South of Two Rivers Point, along Chignecto Bay (Fig. 24).**UTM:** 384050 E
5057230 N**GEOLOGICAL UNIT:** Cumberland Group, Pennsylvanian age**DESCRIPTION:** Brown shale, 4.6 m thick.**SAMPLE INTERVAL:** 4.6 m chip sample**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Good workability and plasticity. Water of plasticity 24.0%. Cracks with rapid drying. Air shrinkage 5.8%.**P.C.E.:** 4**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1795	2.62	10.30	Light orange brown	Very hard
1840	3.42	9.27	Light orange brown	Very hard
1885	4.35	8.14	Light reddish brown	Steel hard
1920	5.26	6.87	Light reddish brown	Steel hard
1955	6.50	5.67	Light reddish brown	Steel hard
1985	7.49	4.34	Reddish brown	Steel hard
2015	8.08	3.06	Reddish brown	Steel hard
2035	8.44	2.29	Reddish brown	Steel hard
2055	8.37	1.83	Reddish brown	Steel hard

POTENTIAL USES: Common and face brick.

CUMBERLAND COUNTY**Sample Number**

CSP-97

TOPOGRAPHICAL SHEET: 21H/09**LOCATION:** At Two Rivers, Chignecto Bay, south of Ragged Reef Point (Fig. 24).**UTM:** 384200 E
5057000 N**GEOLOGICAL UNIT:** Cumberland Group, Pennsylvanian age**DESCRIPTION:** Greyish-brown shale**ATTITUDE OF BEDDING:** 290° /15° SW**SAMPLE INTERVAL:** 3 m chip sample**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Good workability and plasticity. Water of plasticity 22.4%. Cracks with rapid drying. Air shrinkage 5.5%.**P.C.E.:** 4**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1790	2.40	10.00	Light orange brown	Very hard
1830	3.13	9.06	Light orange brown	Very hard
1875	3.90	8.04	Medium orange brown	Steel hard
1910	5.21	6.73	Medium orange brown	Steel hard
1940	5.96	5.19	Medium orange brown	Steel hard
1970	6.88	3.76	Medium orange brown	Steel hard
1995	7.79	2.70	Light reddish brown	Steel hard
2020	8.27	1.79	Light reddish brown	Steel hard
2035	8.74	1.43	Light reddish brown	Steel hard

POTENTIAL USES: Common brick and face brick.

CUMBERLAND COUNTY

Sample Number

CSP-99

TOPOGRAPHICAL SHEET: 21H/10

LOCATION: In a cove, 1.6 km northeast of Flat Brook (Fig. 25).

UTM: 380430 E
5054790 N

GEOLOGICAL UNIT: Cumberland Group, Pennsylvanian age

DESCRIPTION: Interbedded, red to brownish-red shale.

ATTITUDE OF BEDDING: 210° /11° SE

SAMPLE INTERVAL: 4.6 m chip sample

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Good workability and plasticity. Water of plasticity 24.4%. Cracks with rapid drying. Air shrinkage 5.5%.

P.C.E.: 3-4

FIRED CHARACTERISTICS:

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1780	4.17	7.96	Light orange brown	Steel hard
1825	5.44	6.20	Light orange brown	Steel hard
1865	6.45	4.56	Light reddish brown	Steel hard
1895	7.65	2.44	Light reddish brown	Steel hard
1925	8.01	1.08	Light reddish brown	Steel hard
1955	7.75	0.84	Medium reddish brown	Steel hard
1980	7.68	0.67	Medium reddish brown	Steel hard
2005	7.76	0.72	Medium reddish brown	Steel hard
2020	7.58	0.89	Medium reddish brown	Steel hard
2035	7.69	0.82	Medium reddish brown	Steel hard

POTENTIAL USES: Common brick, face brick and tile.

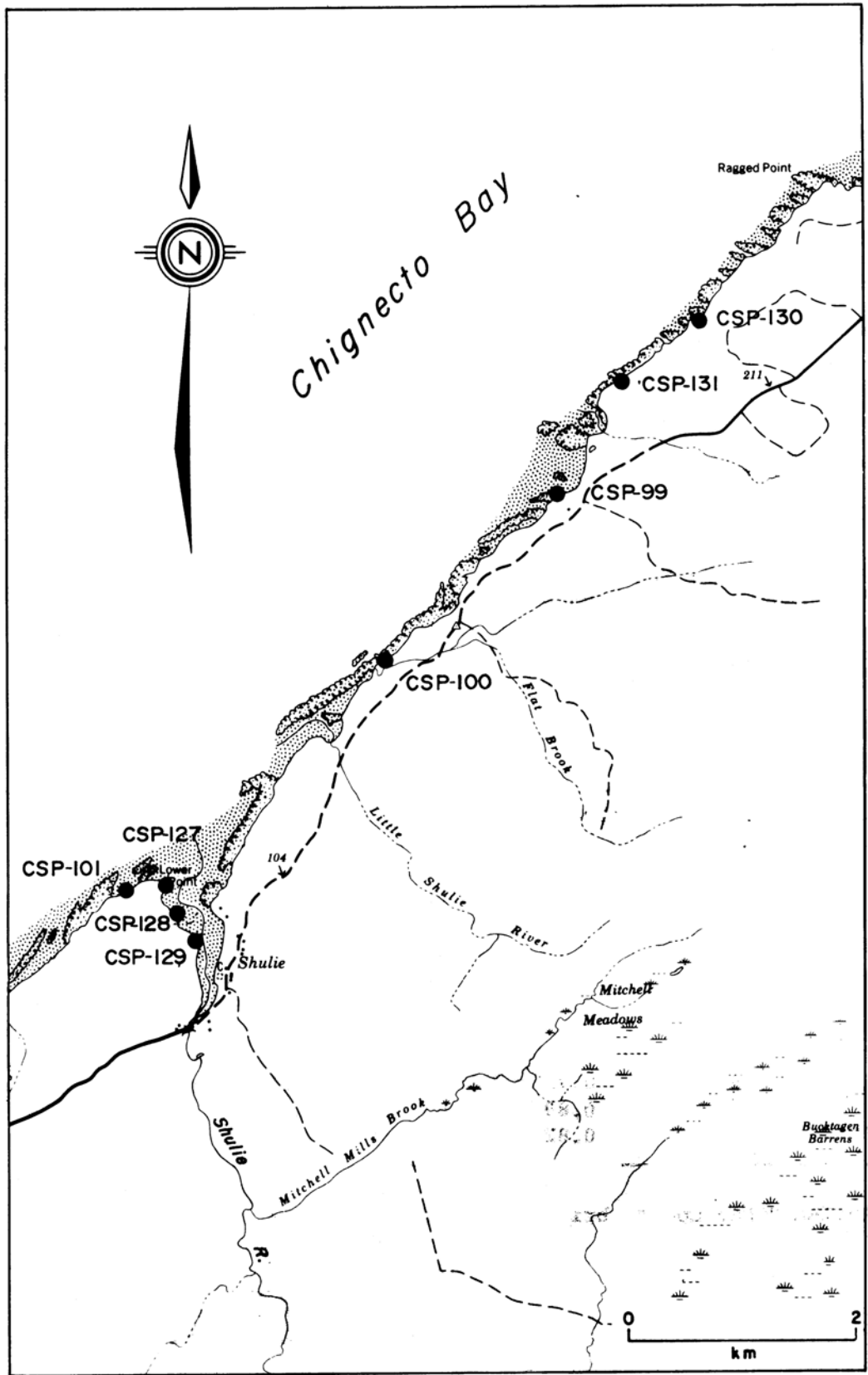
CUMBERLAND COUNTY**Sample Number**

CSP-98

TOPOGRAPHICAL SHEET: 21H/09**LOCATION:** On the shore of Chignecto Bay, 61 m northwest of sample CSP-97 in the vicinity of Two Rivers, south of Ragged Reef Point (Fig. 24).**UTM:** 383660 E
5057210 N**GEOLOGICAL UNIT:** Cumberland Group, Pennsylvanian age**DESCRIPTION:** Grey shale, 3.7 m in thickness.**SAMPLE INTERVAL:** 3.7 m chip sample**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Good workability and plasticity. Water of plasticity 23.4%. Cracks with rapid drying. Air shrinkage 5.6%.**P.C.E.:** 12+**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1800	3.11	11.29	Light brown	Hard
1865	4.38	9.23	Orange brown	Very hard
1915	5.68	7.05	Orange brown	Very hard
1960	7.00	4.89	Orange brown	Very hard
2005	7.74	2.94	Orange brown	Steel hard
2050	7.92	2.10	Orange brown	Steel hard
2085	8.31	1.59	Orange brown	Steel hard
2125	8.33	1.37	Reddish brown	Steel hard
2155	8.37	1.03	Reddish brown	Steel hard
2180	8.32	1.02	Reddish brown	Steel hard
2205	7.98	1.00	Reddish brown	Steel hard
2220	7.78	1.02	Reddish brown	Steel hard

POTENTIAL USES: Face brick, common brick and tile.



Ref. Map 21-H-10

Figure 25. Location map for samples CSP-99-101, 127-131 (Shulie)

CUMBERLAND COUNTY

Sample Number
CSP-100

TOPOGRAPHICAL SHEET: 21H/10**LOCATION:** Along Chignecto Bay at Flat Brook, approximately 2.4 km northeast of Shulie River (Fig. 25).**UTM:** 378840 E
5053350 N**GEOLOGICAL UNIT:** Cumberland Group, Pennsylvanian age**DESCRIPTION:** Brown shale**SAMPLE INTERVAL:** 7.6 m chip sample**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Good workability and plasticity. Water of plasticity 22.8%. Cracks with rapid drying. Air shrinkage 5.1%.**P.C.E.:** 3-4**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1785	3.64	7.02	Light orange brown	Steel hard
1835	5.23	5.61	Light orange brown	Steel hard
1875	6.46	3.92	Medium orange brown	Steel hard
1905	7.81	2.26	Medium orange brown	Steel hard
1945	8.45	1.01	Medium orange brown	Steel hard
1975	8.67	0.70	Medium reddish brown	Steel hard
2000	8.20	0.52	Medium reddish brown	Steel hard
2025	7.82	0.57	Medium reddish brown	Steel hard
2045	7.08	0.71	Medium reddish brown	Steel hard
2065	7.33	0.71	Medium reddish brown	Steel hard

POTENTIAL USES: Common brick, face brick and tile.

CUMBERLAND COUNTY**Sample Number**

CSP-101

TOPOGRAPHICAL SHEET: 21H/10**LOCATION:** Along the shore of Chignecto Bay approximately 305 m southwest of Shulie River (Fig. 25).**UTM:** 376560 E
5051400 N**GEOLOGICAL UNIT:** Cumberland Group, Pennsylvanian age**DESCRIPTION:** Light rose-brown shale**ATTITUDE OF BEDDING:** 155° /7° NE**SAMPLE INTERVAL:** 6 m chip sample, 4.5 kg.**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Good workability and plasticity. Water of plasticity 22.4%. Cracks with rapid drying. Air shrinkage 5.3%.**P.C.E.:** 4-5**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1800	3.66	8.54	Light orange brown	Very hard
1845	5.04	7.12	Light orange brown	Very hard
1880	5.97	5.56	Medium orange brown	Very hard
1915	7.36	3.62	Medium orange brown	Steel hard
1945	8.31	1.84	Medium orange brown	Steel hard
1980	8.76	1.00	Medium orange brown	Steel hard
2005	8.82	0.78	Light reddish brown	Steel hard
2030	8.46	0.86	Light reddish brown	Steel hard
2045	7.89	0.93	Light reddish brown	Steel hard

POTENTIAL USES: Common brick, face brick and tile.

CUMBERLAND COUNTY

Sample Number
CSP-102

TOPOGRAPHICAL SHEET: 21H/10**LOCATION:** Along the shore of Chignecto Bay, Sand Cove, approximately 3.2 km northeast of Sand River (Fig. 26).**UTM:** 370790 E
5046500 N**GEOLOGICAL UNIT:** Cumberland Group, Pennsylvanian age**DESCRIPTION:** Light rose-brown shale and siltstone**ATTITUDE OF BEDDING:** 1 75° /9 ° NE**SAMPLE INTERVAL:** 9 m chip sample**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Hard, silty, light rose shale. Fair workability and plasticity. Water of plasticity 20.5%. Cracks with rapid drying. Air shrinkage 3.6%.**P.C.E.:** 7**FIRED CHARACTERISTICS:**

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	2.60	9.78	Moderate reddish brown	Steel hard
04	4.84	5.80	Dark moderate reddish brown	Steel hard
02	7.01	1.99	Dark reddish brown	Steel hard

POTENTIAL USES: Common brick

CUMBERLAND COUNTY

Sample Number
CSP-103

TOPOGRAPHICAL SHEET: 21H/09

LOCATION: West of Lower Cove, on the shore of the Cumberland Basin (Fig. 24).

UTM: 388090 E
5064280 N

GEOLOGICAL UNIT: Cumberland Group, Pennsylvanian age

DESCRIPTION: Greyish-brown clay with carbonaceous material.

SAMPLE INTERVAL: Grab sample

TYPE OF MATERIAL: Clay

UNFIRED CHARACTERISTICS: Very good workability. Good plasticity. Water of plasticity 30.4%. Very little cracking with rapid drying. Air shrinkage 6.0%.

P.C.E.: 3

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	2.20	12.68	Moderate reddish brown	Hard
04	7.27	5.04	Light moderate reddish brown	Steel hard
02	8.41	0.78	Dark reddish brown	Steel hard

REMARKS: scumming on firing

POTENTIAL USES: None

CUMBERLAND COUNTY**Sample Number**

CSP-104

TOPOGRAPHICAL SHEET: 21H/07**LOCATION:** Exposure in cliff along the shore of Greville Bay, approximately 1.6 km south of Spencers Island wharf, Parrsboro area (Fig. 19).**UTM:** 365930 E
5022000 N**GEOLOGICAL UNIT:** Riversdale Group, Pennsylvanian age**DESCRIPTION:** Interbedded shale, siltstone and sandstone occurring in steeply dipping beds. Shale is dark reddish brown, gritty and highly fractured.**ATTITUDE OF BEDDING:** 154° /45° SW**SAMPLE INTERVAL:** 3.7 m chip sample**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Good workability and plasticity. Water of plasticity 23.2%. Cracks with rapid drying. Air shrinkage 4.9%.**P.C.E.:** 3-4**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1795	4.22	8.59	Light orange brown	Steel hard
1835	5.09	6.92	Light reddish brown	Steel hard
1880	6.35	4.86	Light reddish brown	Steel hard
1915	7.06	3.31	Light reddish brown	Steel hard
1945	7.55	2.10	Light reddish brown	Steel hard
1975	7.77	1.08	Medium reddish brown	Steel hard
2005	8.16	0.79	Medium reddish brown	Steel hard
2030	8.01	0.63	Medium reddish brown	Steel hard
2050	6.62	0.63	Medium reddish brown	Steel hard

POTENTIAL USES: Common brick, face brick and tile.

CUMBERLAND COUNTY

Sample Number
CSP-105

TOPOGRAPHICAL SHEET: 21H/07

LOCATION: Exposure 1.4 km south of Spencers Island, along shore of Greville Bay (Fig. 19).

UTM: 365920 E
5022140 N

GEOLOGICAL UNIT: Riversdale Group, Pennsylvanian age

DESCRIPTION: Light rose-brown shale containing some gritty material.

ATTITUDE OF BEDDING: 127° /57° NW

SAMPLE INTERVAL: 4.6 m chip sample

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Slightly calcareous rose-brown shale. Fair workability. Good plasticity. Water of plasticity 22.4%. Cracks with rapid drying. Air shrinkage 4.9%.

P.C.E.: 3-4

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	5.44	5.77	Moderate reddish brown	Steel hard
04	8.06	0.88	Moderate reddish brown	Steel hard
02	5.78	0.09	Moderate reddish brown	Steel hard

POTENTIAL USES: Face brick, tile and sewer pipe.

CUMBERLAND COUNTY

Sample Number
CSP-106

TOPOGRAPHICAL SHEET: 21H/08

LOCATION: On the shore of the Minas Basin at Two Islands, approximately 8 km east of Parrsboro (Fig. 27).

UTM: 405160 E
5027380 N

GEOLOGICAL UNIT: Annapolis Group, Blomidon Formation, Triassic age

DESCRIPTION: Gritty, poorly consolidated shale, red to greenish red in colour. Beds are thick with minor beds of siltstone and sandstone.

ATTITUDE OF BEDDING: 95° /16° SW

SAMPLE INTERVAL: 15 m chip sample

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Hard, highly calcareous, sandy, light-brown shale. Poor workability. Fair plasticity. Water of plasticity 26.6%. Cracks with rapid drying. Air shrinkage 5.6%.

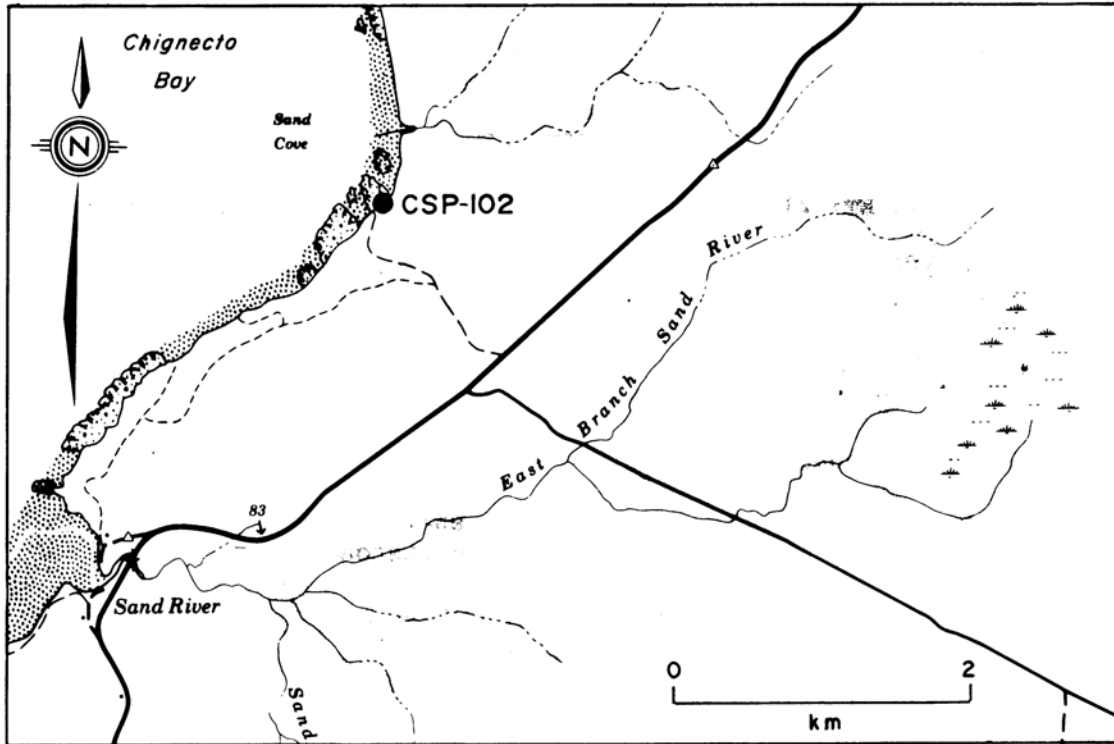
P.C.E.: 3-4

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	0.88	16.03	Pale reddish brown	Hard
04	1.51	13.92	Dark pale reddish brown	Hard
02	6.09	2.60	Dark pale reddish brown	Hard

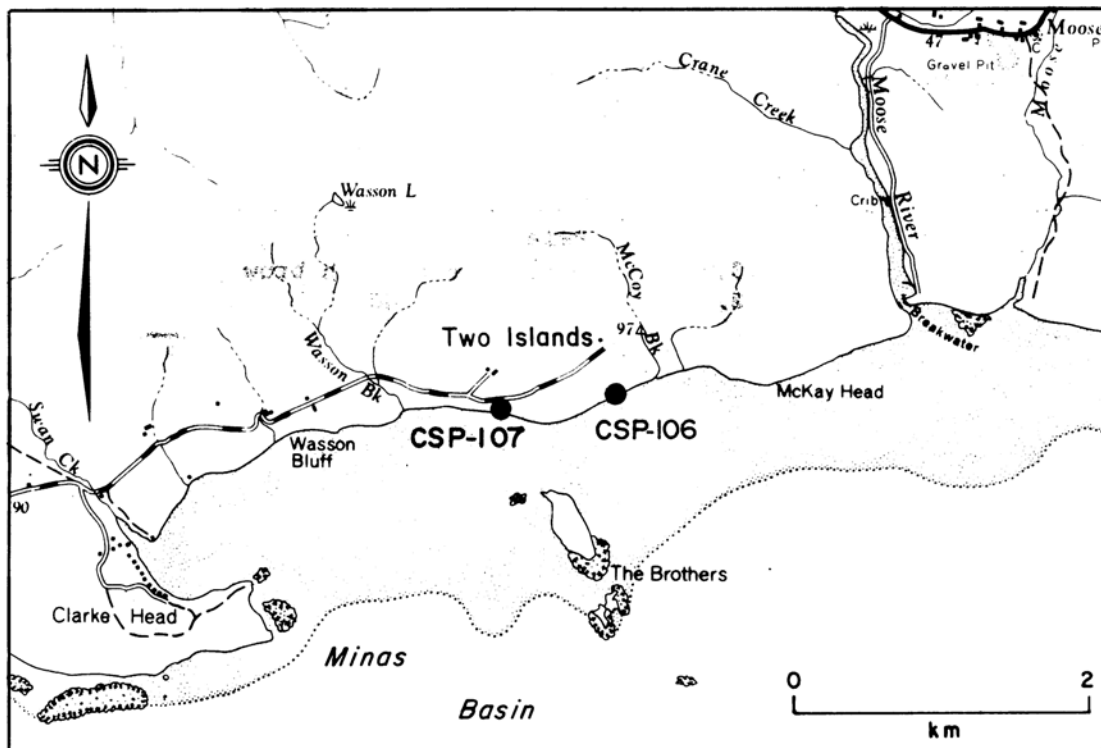
REMARKS: Short firing range

POTENTIAL USES: None



Ref. Map 21-H-10

Figure 26. Location map for sample CSP-102 (Sand Cove)



Ref. Map 21-H-8

Figure 27. Location map for samples CSP-106, 107 (Two Islands)

CUMBERLAND COUNTY**Sample Number**

CSP-107

TOPOGRAPHICAL SHEET: 21H/08**LOCATION:** On the shore of the Minas Basin at Two Islands, approximately 7 km east of Parrsboro (Fig. 27).**UTM:** 404300 E
5027250 N**GEOLOGICAL UNIT:** Annapolis Group, Blomidon Formation, Triassic age**DESCRIPTION:** Gritty shale bed, 10.7 m in thickness**SAMPLE INTERVAL:** 10.7 m chip sample**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Hard, highly calcareous, light brown shale and siltstone. Poor workability. Fair plasticity. Water of plasticity 22.4%. Cracks with rapid drying. Air shrinkage 5.6%**P.C.E.:** 3-4**FIRED CHARACTERISTICS:**

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	0.35	14.13	Pale reddish brown	Hard
04	1.33	12.14	Light pale reddish brown	Hard
02	7.23	0.61	Light pale reddish brown	Steel hard

REMARKS: Short firing range**POTENTIAL USES:** None

CUMBERLAND COUNTY

Sample Number
CSP-108

TOPOGRAPHICAL SHEET: 21H/07

LOCATION: On the shore of Greville Bay at the mouth of Fox River, approximately 2.6 km southeast of Port Greville (Fig. 28).

UTM: 381430 E
5027780 N

GEOLOGICAL UNIT: Annapolis Group, Blomidon Formation, Triassic age

DESCRIPTION: Hard, silty, light rose-brown shale with narrow lenses of siltstone.

ATTITUDE OF BEDDING: 95° /16° SW

SAMPLE INTERVAL: 15 m chip sample

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Silty shale. Good workability and plasticity. Water of plasticity 22.8%. Safe drying at 85°C. Air shrinkage 5.0%.

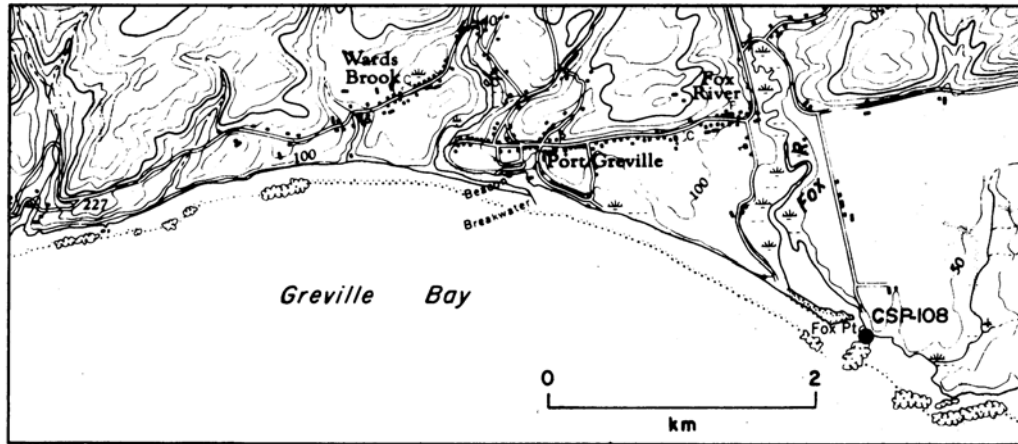
P.C.E.: 3-4

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	3.24	7.85	Moderate reddish brown	Very hard
04	7.13	1.91	Dark moderate reddish brown	Steel hard
02	6.84	0.02	Dark reddish brown	Steel hard

REMARKS: Some scumming on firing.

POTENTIAL USES: Common brick, hollow tile and drain tile.



Ref. Map 21-H-7

Figure 28. Location map for sample CSP-108 (Fox Point)

CUMBERLAND COUNTY

Sample Number

CSP-109

TOPOGRAPHICAL SHEET: 21H/08

LOCATION: Along the shore of Greville Bay, approximately 3.2 km southwest of the Village of Diligent River (Fig. 29).

UTM: 383430 E
5027380 N

GEOLOGICAL UNIT: Riversdale Group, Lower Pennsylvanian age

DESCRIPTION: Light rose-brown shale, having highly fractured and irregular beds.

SAMPLE INTERVAL: Chip sample across 9 m

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Slightly calcareous light-rose brown shale. Good workability and plasticity. Water of plasticity 22.0%. Cracks with rapid drying. Air shrinkage 5.4%.

P.C.E.: 3+

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	5.65	5.05	Moderate reddish brown	Steel hard
04	7.85	1.22	Dark mod. reddish brown	Steel hard
02	5.98	0.06	Dark reddish brown	Steel hard

POTENTIAL USES: Face brick, tile and sewer pipe

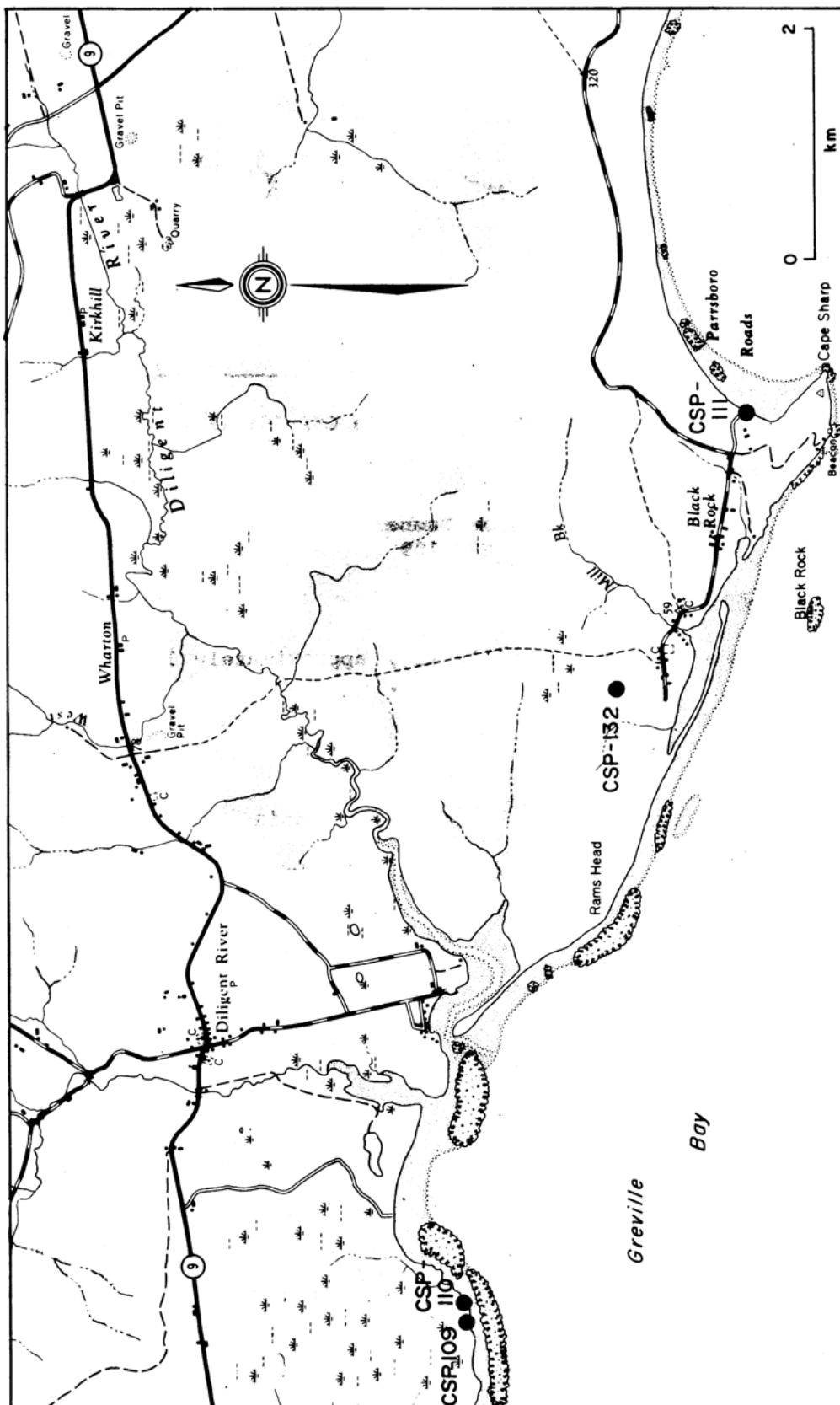


Figure 29. Location map for samples CSP-109-111, 132 (Black Rock)

Ref. Map 21-H-8

CUMBERLAND COUNTY

Sample Number
CSP-110

TOPOGRAPHICAL SHEET: 21H/08**LOCATION:** About 3.2 km southwest of Diligent River and approximately 152 m northeast of CSP-109 (Fig. 29).**UTM:** 383590 E
5027420 N**GEOLOGICAL UNIT:** Riversdale Group, Pennsylvanian age**DESCRIPTION:** Fractured gritty shale with minor siltstone.**ATTITUDE OF BEDDING:** 280° /46° NW**SAMPLE INTERVAL:** 9 m chip sample**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Calcareous, hard, silty, light rose-brown shale. Fair workability. Good plasticity. Water of plasticity 20.2%. Safe drying. Air shrinkage 4.7%.**P.C.E.:** 3-4**FIRED CHARACTERISTICS:**

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	3.15	7.67	Moderate reddish brown	Very hard
04	5.71	2.90	Moderate reddish brown	Steel hard
02	6.55	0.17	Moderate reddish brown	Steel hard

POTENTIAL USES: Face brick, tile and sewer pipe.

CUMBERLAND COUNTY

Sample Number
CSP-111

TOPOGRAPHICAL SHEET: 21H/08

LOCATION: Along a steep cliff at West Bay, east of Black Rock (Fig. 29).

UTM: 391110 E
5024860 N

GEOLOGICAL UNIT: Riversdale Group, Pennsylvanian age

DESCRIPTION: Highly fractured, dark reddish-brown shale.

SAMPLE INTERVAL: 7.6 m chip sample

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Highly calcareous, light rose-brown shale. Good workability and plasticity. Water of plasticity 22.4%. Cracks with rapid drying. Air shrinkage 5.1%.

P.C.E.: 3-4

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	4.83	5.84	Moderate reddish brown	Steel hard
04	9.45	2.07	Dark moderate reddish brown	Steel hard
02	6.23	0.18	Dark reddish brown	Steel hard

POTENTIAL USES: Face brick, tile and sewer pipe.

CUMBERLAND COUNTY

Sample Number
CSP-112

TOPOGRAPHICAL SHEET: 21H/08

LOCATION: Along the shore at East Bay, approximately 805 m northwest of Partridge Island (Fig. 30).

UTM: 394380 E
5025550 N

GEOLOGICAL UNIT: Uncertain, probably Riversdale Group, Pennsylvanian age

DESCRIPTION: Gritty to very fine, dark reddish-brown shale

ATTITUDE OF BEDDING: 112° /87° SW

SAMPLE INTERVAL: 7.6 m chip sample, 6.8 kg

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Light purple-brown shale. Fair workability and plasticity. Water of plasticity 20.0%. Safe drying at 85°C. Air shrinkage 5.2%

P.C.E.: 5+

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	3.22	10.48	Moderate reddish brown	Very hard
04	5.78	3.52	Moderate reddish brown	Very hard
02	6.78	0.86	Moderate reddish brown	Very hard

POTENTIAL USES: Common brick and face brick

CUMBERLAND COUNTY

Sample Number
CSP-113

TOPOGRAPHICAL SHEET: 21H/08

LOCATION: Along the shore at East Bay, adjacent to Partridge Island (Fig. 30).

UTM: 395250 E
5024950 N

GEOLOGICAL UNIT: Riversdale Group, Pennsylvanian age

DESCRIPTION: Greyish and greenish shale

SAMPLE INTERVAL: 7.6 m chip sample

TYPE OF MATERIAL: Shale

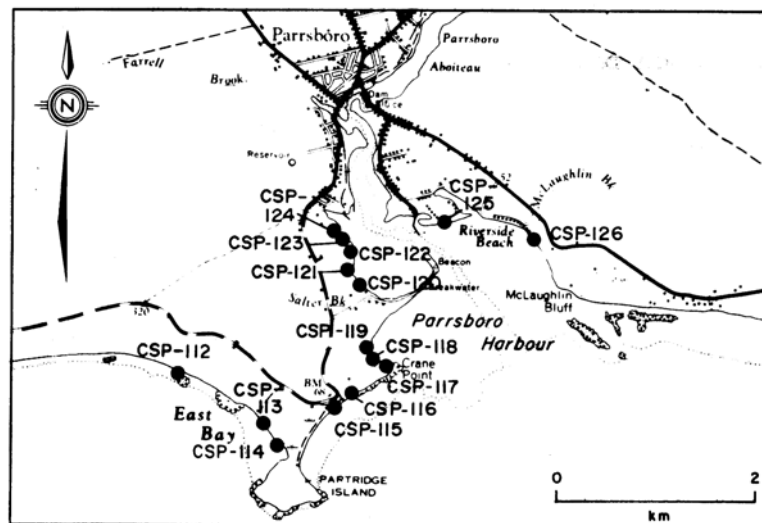
UNFIRED CHARACTERISTICS: Calcareous. Poor workability. Fair plasticity. Water of plasticity 18.0%. Safe drying. Air shrinkage 3.5%

P.C.E.: 3+

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	+0.01	13.80	Pale reddish brown	Hard
04	0.26	13.27	Pale reddish brown	Very hard
02	3.53	4.20	Pale reddish brown	Steel hard

POTENTIAL USES: Common brick



Ref. Map 21-H-8

Figure 30. Location map for samples CSP-112-126 (Parrsboro)

CUMBERLAND COUNTY

Sample Number

CSP-114

TOPOGRAPHICAL SHEET: 21H/08

LOCATION: Along the shore at East Bay adjacent to the northern side of the causeway to Partridge Island (Fig. 30).

UTM: 395380 E
5024770 N

GEOLOGICAL UNIT: Blomidon Formation, Annapolis Group, Triassic age

DESCRIPTION: Plastic clay appears extensive, with a thickness of 2.5 m.

SAMPLE INTERVAL: 2.5 m chip sample

TYPE OF MATERIAL: Clay

UNFIRED CHARACTERISTICS: Very good workability. Very plastic. Water of plasticity 30.0%. Cracks with rapid drying. Air shrinkage 7.7%

P.C.E.: 2-3

FIRED CHARACTERISTICS:

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1765	0.44	19.01	Light brown	Fairly hard
1815	0.42	18.72	Light brown	Hard
1855	0.98	17.76	Light brown	Hard
1890	1.47	16.89	Light brown	Hard
1925	2.37	15.10	Light brown	Hard
1960	3.57	11.88	Medium brown	Very hard
1990	5.68	8.62	Medium brown	Very hard
2010	8.19	5.12	Medium brown	Steel hard
2035	9.86	2.62	Medium brown	Steel hard
2050	10.24	1.07	Dark brown	Steel hard

POTENTIAL USES: Common brick, drain and chimney tile.

CUMBERLAND COUNTY

Sample Number
CSP-115

TOPOGRAPHICAL SHEET: 21H/08

LOCATION: Exposure between Crane Point and Partridge Island, approximately 3.3 km south of the Town of Parrsboro (Fig. 30).

UTM: 395920 E
5025180 N

GEOLOGICAL UNIT: Riversdale Group, Pennsylvanian age

DESCRIPTION: Brownish-red shale. Bed continuous for over 91 m.

ATTITUDE OF BEDDING: 240°/21° SW

SAMPLE INTERVAL: Grab sample along strike

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Hard, silty shale. Fair workability and plasticity. Water of plasticity 17.2%. Cracks with rapid drying. Air shrinkage 3.5%.

P.C.E.: 5+

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	3.87	4.97	Moderate reddish brown	Steel hard
04	6.60	2.53	Dark moderate reddish brown	Steel hard
02	6.41	0.19	Dark moderate reddish brown	Steel hard

POTENTIAL USES: Common brick and face brick.

CUMBERLAND COUNTY

Sample Number
CSP-116

TOPOGRAPHICAL SHEET: 21H/08

LOCATION: Between Crane Point and Partridge Island approximately 3.2 km south of Parrsboro (Fig. 30).

UTM: 396100 E
5025300 N

GEOLOGICAL UNIT: Riversdale Group, Pennsylvanian age

DESCRIPTION: Rose coloured shale with some siltstone, exposed for 122 m.

SAMPLE INTERVAL: Grab sample

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Hard, silty shale. Poor workability. Fair plasticity. Water of plasticity 16.4%. Safe drying at 85°C. Air shrinkage 2.9%.

P.C.E.: 5+

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	3.00	5.87	Moderate reddish brown	Steel hard
04	5.14	2.24	Dark mod. reddish brown	Steel hard
02	3.70	0.25	Dark reddish brown	Steel hard

POTENTIAL USES: Common brick

CUMBERLAND COUNTY

Sample Number
CSP-117

TOPOGRAPHICAL SHEET: 21H/08

LOCATION: At Crane Point, about 3 km south of Parrsboro (Fig. 30).

UTM: 396440 E
5025590 N

GEOLOGICAL UNIT: Probably Riversdale Group, Pennsylvanian age

DESCRIPTION: Grey shale, 3 m in thickness

ATTITUDE OF BEDDING: 280° /55° NE

SAMPLE INTERVAL: Chip sample across 3 m

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Poor workability. Fair plasticity. Water of plasticity 16.4%. Cracks with rapid drying. Air shrinkage 1.9%

P.C.E.: 5+

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	1.96	7.24	Moderate reddish brown	Very hard
04	5.50	2.10	Dark moderate reddish brown	Steel hard
02	6.34	0.35	Dark moderate reddish brown	Steel hard

POTENTIAL USES: Common brick

CUMBERLAND COUNTY

Sample Number
CSP-118

TOPOGRAPHICAL SHEET: 21H/08

LOCATION: Sample from Crane Point, about 3 km south of Parrsboro (Fig. 30).

UTM: 396280 E
5025700 N

GEOLOGICAL UNIT: Probably Riversdale Group, Pennsylvanian age

DESCRIPTION: Light grey shale

SAMPLE INTERVAL: 3.7 m chip sample

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Fair workability and plasticity. Water of plasticity 16.6%. Cracks with rapid drying. Air shrinkage 1.8%

P.C.E.: 5+

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	2.12	8.00	Moderate reddish brown	Very hard
04	4.05	4.41	Moderate reddish brown	Steel hard
02	4.43	1.80	Moderate reddish brown	Steel hard

POTENTIAL USES: Common and face brick

CUMBERLAND COUNTY

Sample Number
CSP-119

TOPOGRAPHICAL SHEET: 21H/08

LOCATION: At the mouth of Salter Brook, approximately 2.8 km south of Parrsboio (Fig. 30).

UTM: 396250 E
5025810 N

GEOLOGICAL UNIT: Probably Riversdale Group, Pennsylvanian age

DESCRIPTION: Grey shale to siltstone

SAMPLE INTERVAL: 2.4 m chip sample

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Hard, silty, grey shale. Fair workability and plasticity. Water of plasticity 18.2%. Cracks with rapid drying. Air shrinkage 2.7%.

P.C.E.: 5+

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	3.40	7.54	Moderate reddish brown	Very hard
04	7.19	2.10	Dark moderate reddish brown	Steel hard
02	7.28	0.03	Dark moderate reddish brown	Steel hard

POTENTIAL USES: Common brick and face brick

CUMBERLAND COUNTY

Sample Number
CSP-120

TOPOGRAPHICAL SHEET: 21H/08

LOCATION: Along the western shore of Parrsboro Harbour near the mouth of the Parrsboro River (Fig. 30).

UTM: 396180 E
5026420 N

GEOLOGICAL UNIT: Clay overlying Riversdale Group of Pennsylvanian age

DESCRIPTION: Plastic red clay overlain by beach sand, gravel and boulders.

SAMPLE INTERVAL: 1 m vertical section

TYPE OF MATERIAL: Clay

UNFIRED CHARACTERISTICS: Very good workability. Very plastic. Water of plasticity 30.0%. Cracks with rapid drying. Air shrinkage 5.5%

P.C.E.: 3-4

FIRED CHARACTERISTICS:

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1780	4.41	13.53	Orange brown	Very hard
1825	5.78	9.16	Orange brown	Very hard
1875	6.81	7.01	Orange brown	Steel hard
1910	8.45	3.47	Orange brown	Steel hard
1940	9.62	0.97	Dark reddish brown	Steel hard
1970	9.89	0.51	Dark reddish brown	Steel hard
2000	9.80	0.55	Dark reddish brown	Steel hard
2030	9.49	0.74	Dark reddish brown	Steel hard
2050	9.10	0.92	Dark reddish brown	Vitrified
2075	6.18	1.12	Dark reddish brown	Vitrified

POTENTIAL USES: Brick, tile and sewer pipe.

CUMBERLAND COUNTY**Sample Number**

CSP-121

TOPOGRAPHICAL SHEET: 21H/08**LOCATION:** Near the mouth of Parrsboro River on the western shore of Parrsboro Harbour (Fig. 30).**UTM:** 396050 E
5026550 N**GEOLOGICAL UNIT:** Pleistocene overlying Riversdale Group**DESCRIPTION:** Plastic red clay, overlain by sand, gravel and boulders.**SAMPLE INTERVAL:** 1 m chip sample from pit**TYPE OF MATERIAL:** Clay**UNFIRED CHARACTERISTICS:** Very good workability. Very plastic. Water of plasticity 27.5%. Cracks with rapid drying. Air shrinkage 6.0%.**P.C.E.:** 3**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1740	1.94	13.23	Light orange brown	Very hard
1785	2.84	12.30	Light orange brown	Very hard
1825	4.11	10.41	Light orange brown	Very hard
1865	5.22	8.09	Light orange brown	Very hard
1905	5.81	5.44	Light orange brown	Steel hard
1935	7.46	3.36	Reddish brown	Steel hard
1965	8.82	1.50	Reddish brown	Steel hard
1990	9.47	1.10	Reddish brown	Steel hard
2010	10.28	0.97	Reddish brown	Steel hard
2030	9.41	0.76	Reddish brown	Steel hard

POTENTIAL USES: Brick, tile and sewer pipe.

CUMBERLAND COUNTY

Sample Number
CSP-122

TOPOGRAPHICAL SHEET: 21H/08

LOCATION: On the western shore of Parrsboro Harbour near the mouth of the Parrsboro River just north of CSP-121 (Fig. 30).

UTM: 396120 E
5026730 N

GEOLOGICAL UNIT: Clay overlying Riversdale Group, Pennsylvanian age

DESCRIPTION: Plastic red clay

SAMPLE INTERVAL: 1.5 m chip sample from pit

TYPE OF MATERIAL: Clay

UNFIRED CHARACTERISTICS: Very good workability. Very plastic. Water o plasticity 30.7%. Cracks with rapid drying. Air shrinkage 6.2%.

P.C.E.: 3-4

FIRED CHARACTERISTICS:

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1765	3.66	13.20	Pinkish brown	Hard
1815	5.45	10.84	Pinkish brown	Very hard
1855	6.98	7.95	Light reddish brown	Very hard
1895	8.85	4.61	Light reddish brown	Steel hard
1925	10.40	1.35	Light reddish brown	Steel hard
1965	10.99	0.81	Medium reddish brown	Steel hard
1985	11.35	0.74	Medium reddish brown	Steel hard
2010	11.25	0.69	Medium reddish brown	Steel hard
2035	10.59	0.65	Medium reddish brown	Steel hard
2050	8.17	0.58	Medium reddish brown	Steel hard

POTENTIAL USES: Brick

CUMBERLAND COUNTY

Sample Number
CSP-123

TOPOGRAPHICAL SHEET: 21H/08

LOCATION: Along the western shore of the mouth of the Parrsboro River (Fig. 30).

UTM: 396020 E
5026870 N

GEOLOGICAL UNIT: Riversdale Group, Pennsylvanian age

DESCRIPTION: Greyish shale and siltstone

SAMPLE INTERVAL: 3.7 m chip sample

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Calcareous, hard, silty, grey shale with fossils. Fair workability. Good plasticity. Water of plasticity 23.0%. Cracks with rapid drying. Air shrinkage 5.0%

P.C.E.: 3-4

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	4.21	8.32	Moderate reddish brown	Steel hard
04	6.50	4.71	Moderate reddish brown	Steel hard
02	8.27	1.01	Dark moderate reddish brown	Steel hard

POTENTIAL USES: Face brick

CUMBERLAND COUNTY

Sample Number

CSP-124

TOPOGRAPHICAL SHEET: 21H/08

LOCATION: Along the western shore of the mouth of the Parrsboro River (Fig. 30).

UTM: 395920 E
5026930 N

GEOLOGICAL UNIT: Clay overlying the Riversdale Group

DESCRIPTION: Plastic red clay, up to 3 m thick.

SAMPLE INTERVAL: 1.2 m chip sample across clay horizon

TYPE OF MATERIAL: Clay

UNFIRED CHARACTERISTICS: Good workability and plasticity. Water of plasticity 23.2%. Cracks with rapid drying. Air shrinkage 5.3%.

P.C.E.: 10

FIRED CHARACTERISTICS:

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1770	3.55	11.11	Orange brown	Hard
1825	5.03	8.93	Orange brown	Very hard
1885	6.64	6.44	Orange brown	Very hard
1935	8.38	4.66	Orange brown	Steel hard
1975	9.19	1.21	Orange brown	Steel hard
2015	9.81	0.68	Orange brown	Steel hard
2055	9.54	0.56	Medium reddish brown	Steel hard
2090	9.51	0.21	Medium reddish brown	Steel hard
2125	8.66	0.54	Medium reddish brown	Steel hard
2180	8.12	0.78	Medium reddish brown	Steel hard
2205	7.45	0.77	Medium reddish brown	Steel hard
2225	6.78	1.00	Medium reddish brown	Steel hard

POTENTIAL USES: Common brick and face brick.

CUMBERLAND COUNTY

Sample Number
CSP-125

TOPOGRAPHICAL SHEET: 21H/08

LOCATION: At Riverside Beach at the mouth of the Parrsboro River (Fig. 30).

UTM: 397000 E
5027000 N

GEOLOGICAL UNIT: Clay overlying rocks of the Riversdale Group, pennsylvanian age

DESCRIPTION: Plastic red clay

SAMPLE INTERVAL: 1 m chip sample from cut in pit

TYPE OF MATERIAL: Clay

UNFIRED CHARACTERISTICS: Very good workability. Very plastic. Water of plasticity 29.5%. Cracks with rapid drying. Air shrinkage 6.4%.

P.C.E.: 3+

FIRED CHARACTERISTICS:

Temp °	Fired Shrinkage %	Absorption %	Colour	Hardness
1740	2.80	12.68	Orange brown	Very hard
1790	3.88	11.25	Orange brown	Very hard
1835	5.19	9.02	Orange brown	Very hard
1875	6.59	6.51	Orange brown	Very hard
1915	7.79	4.14	Medium reddish brown	Very hard
1945	8.88	1.78	Medium reddish brown	Steel hard
1975	9.02	1.22	Medium reddish brown	Steel hard
2000	9.12	1.11	Medium reddish brown	Steel hard
2020	9.28	1.24	Medium reddish brown	Steel hard
2040	7.81	1.49	Medium reddish brown	Steel hard

POTENTIAL USES: Common brick, face brick, tile and sewer pipe.

CUMBERLAND COUNTY

Sample Number
CSP-126

TOPOGRAPHICAL SHEET: 21H/08**LOCATION:** At Riverside Beach at the mouth of the Parrsboro River about 1 km southeast of CSP-125 (Fig. 30).**UTM:** 397880 E
5026850 N**GEOLOGICAL UNIT:** Clay overlying the Riversdale Group, Pennsylvanian age**DESCRIPTION:** Plastic red clay**SAMPLE INTERVAL:** 1.2 m grab sample, dug with shovel**TYPE OF MATERIAL:** Clay**UNFIRED CHARACTERISTICS:** Very good workability. Very plastic. Water of plasticity 31.2%. Cracks with rapid drying. Air shrinkage 6.1%.**P.C.E.:** 3-4**FIRED CHARACTERISTICS:**

Temp °F	Fired Shrinkage %	Absorption %	Colour	Hardness
1765	2.93	12.94	Orange brown	Very hard
1805	3.61	10.50	Orange brown	Very hard
1850	5.85	8.03	Orange brown	Steel hard
1890	7.95	5.83	Orange brown	Steel hard
1920	8.97	2.29	Orange brown	Steel hard
1955	10.27	0.62	Medium reddish brown	Steel hard
1980	10.79	0.52	Medium reddish brown	Steel hard
2005	10.47	0.60	Medium reddish brown	Steel hard
2025	9.75	0.58	Medium reddish brown	Steel hard
2045	8.42	0.53	Medium reddish brown	Steel hard

POTENTIAL USES: Common brick

CUMBERLAND COUNTY

Sample Number
CSP-127

TOPOGRAPHICAL SHEET: 21H/10

LOCATION: At the mouth of Shulie River, on the western bank (Fig. 25).

UTM: 376880 E
5051440 N

GEOLOGICAL UNIT: Cumberland Group, Pennsylvanian age

DESCRIPTION: Red to greyish coloured shale

ATTITUDE OF BEDDING: 51° /8° SE

SAMPLE INTERVAL: 3.7 m chip sample

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Hard gritty shale. Good workability and plasticity. Water of plasticity 21.4%. Cracks with rapid drying. Air shrinkage 4.8%

P.C.E.: 3-4

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	3.51	6.67	Moderate reddish brown	Steel hard
04	6.91	2.44	Dark moderate reddish brown	Steel hard
02	7.88	0.08	Dark moderate reddish brown	Steel hard

POTENTIAL USES: Face brick

CUMBERLAND COUNTY**Sample Number**

CSP-128

TOPOGRAPHICAL SHEET: 21H/10**LOCATION:** On the western bank of Shulie River, near its entrance into Chignecto Bay (Fig. 25).**UTM:** 376940 E
5051170 N**GEOLOGICAL UNIT:** Cumberland Group, Pennsylvanian age**DESCRIPTION:** Brown shale-siltstone, 3.7 m in thickness**SAMPLE INTERVAL:** 3.7 m chip sample**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Good workability and plasticity. Water of plasticity 19.6%. Cracks with rapid drying. Air shrinkage 4.2%**P.C.E.:** 3-4**FIRED CHARACTERISTICS:**

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	3.65	6.73	Moderate reddish brown	Steel hard
04	6.36	2.50	Dark moderate reddish brown	Steel hard
02	7.48	0.05	Dark moderate reddish brown	Steel hard

POTENTIAL USES: Face brick

CUMBERLAND COUNTY

Sample Number
CSP-129

TOPOGRAPHICAL SHEET: 21H/10

LOCATION: Along the western bank of the Shulie River about 0.3 km southeast of CSP-128 (Fig. 25).

UTM: 377120 E
5050960 N

GEOLOGICAL UNIT: Cumberland Group, Pennsylvanian age

DESCRIPTION: Fossiliferous, brown shale and siltstone approximately 4.5 m thick.

SAMPLE INTERVAL: 4.5 m chip sample

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Hard, silty, brown shale. Good workability and plasticity. Water of plasticity 19.4%. Cracks with rapid drying at 85°C. Air shrinkage 4.6%.

P.C.E.: 3-4

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	2.15	8.02	Moderate reddish brown	Very hard
04	6.12	3.94	Dark moderate reddish brown	Steel hard
02	7.77	0.57	Dark moderate reddish brown	Steel hard

POTENTIAL USES: Suitable for bricks

CUMBERLAND COUNTY

Sample Number
CSP-130

TOPOGRAPHICAL SHEET: 21H/10

LOCATION: Along the shore of Chignecto Bay approximately 1.6 km southwest of Ragged Point (Fig. 25).

UTM: 381710 E
5056270 N

GEOLOGICAL UNIT: Cumberland Group, Pennsylvanian age

DESCRIPTION: Gritty brownish-red shale bed

SAMPLE INTERVAL: Grab sample, 4.5 kg

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Hard, silty shale. Good workability and plasticity. Water of plasticity 21.8%. Cracks with rapid drying. Air shrinkage 4.9%.

P.C.E.: 3-4

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	3.08	8.54	Moderate reddish brown	Very hard
04	6.24	3.34	Dark moderate reddish brown	Steel hard
02	8.59	0.16	Dark moderate reddish brown	Steel hard

POTENTIAL USES: Face brick

CUMBERLAND COUNTY

Sample Number
CSP-131

TOPOGRAPHICAL SHEET: 21H/10

LOCATION: Along the shore of Chignecto Bay, approximately 2.6 km southwest of Ragged Point (Fig. 25).

UTM: 381040 E
5055830 N

GEOLOGICAL UNIT: Cumberland Group, Pennsylvanian age

DESCRIPTION: 6 m of brownish-red shale

ATTITUDE OF BEDDING: 286° /8° NE

SAMPLE INTERVAL: 6 m chip sample

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Good workability and plasticity. Water of plasticity 22.4%. Cracks with rapid drying at 85°C. Air shrinkage 5.5%.

P.C.E.: 5

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	4.58	5.26	Moderate reddish brown	Steel hard
04	7.61	0.60	Dark moderate reddish brown	Steel hard
02	8.11	0.03	Dark moderate reddish brown	Steel hard

POTENTIAL USES: Face brick, tile and sewer pipe.

CUMBERLAND COUNTY

Sample Number
CSP-132

TOPOGRAPHICAL SHEET: 21H/08

LOCATION: 7.2 km southwest of Parrsboro, approximately 2.4 km northwest of Black Rock (Fig. 29).

UTM: 388750 E
5026070 N

GEOLOGICAL UNIT: Pleistocene clay, Quaternary age

DESCRIPTION: Silty, orange-red clay, thinly bedded

SAMPLE INTERVAL: 61 cm chip sample from pit

TYPE OF MATERIAL: Clay

UNFIRED CHARACTERISTICS: Good workability and plasticity. Water of plasticity 30.0%. Cracks with rapid drying. Air shrinkage 5.7%.

P.C.E.: 7

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	3.19	14.56	Moderate reddish brown	Hard
04	6.64	8.71	Light moderate reddish brown	Very hard
02	9.54	3.24	Light moderate reddish brown	Steel hard

POTENTIAL USES: Face brick and sewer pipe.

CUMBERLAND COUNTY

Sample Number
CSP-133

TOPOGRAPHICAL SHEET: 11E/13

LOCATION: Along the southern shore of Baie Verte at Seagrove (Fig. 31).

UTM: 423410 E
5093980 N

GEOLOGICAL UNIT: Pictou Group, Upper Pennsylvanian age

DESCRIPTION: Bright red clay underlying sand and gravel

SAMPLE INTERVAL: 1 m chip sample

TYPE OF MATERIAL: Clay

UNFIRED CHARACTERISTICS: Good plasticity and workability. Water of plasticity 25.0%. Safe drying. Air shrinkage 4.8%.

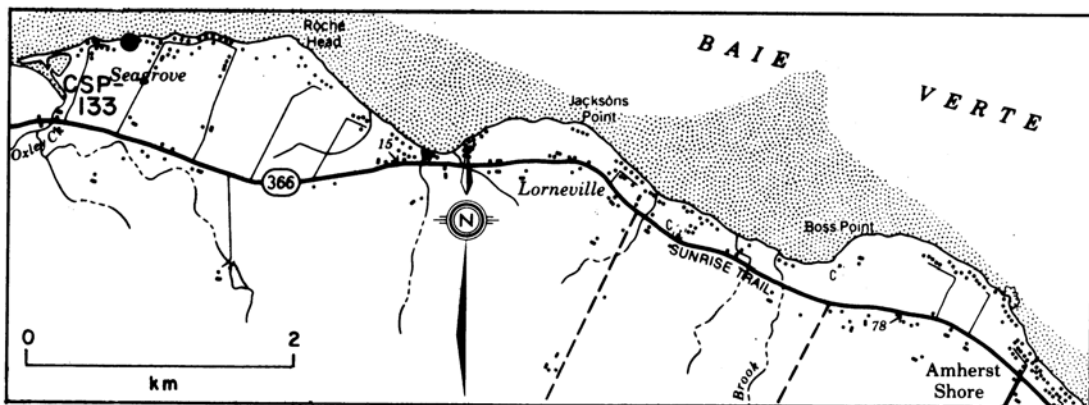
P.C.B.: 3

FIRE CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	4.04	7.39	Moderate reddish brown	Steel hard
04	9.32	0.08	Dark moderate reddish brown	Steel hard
02	0.87	0.09	Dark moderate reddish brown	Vitrified

REMARKS: Some scumming on firing.

POTENTIAL USES: Common brick, hollow tile and drain tile.



Ref. Map 11-E-13

Figure 31. Location map for sample CSP-133 (Seagrove)

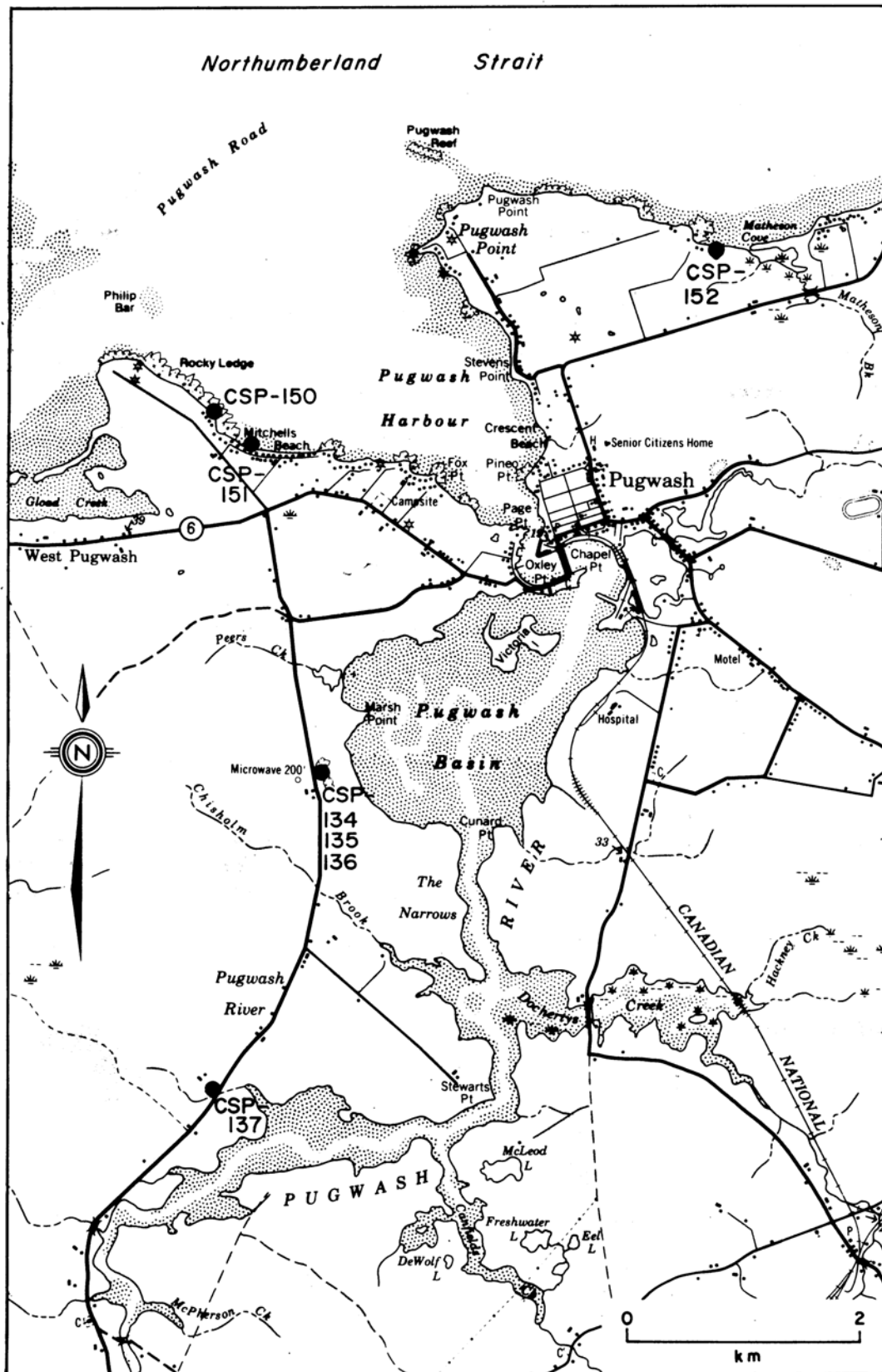
CUMBERLAND COUNTY

Sample Number
CSP-134

TOPOGRAPHICAL SHEET: 11E/13**LOCATION:** In a quarry, 2.4 km southwest of Pugwash, adjacent to Pugwash Basin (Fig. 32).**UTM:** 446420 E
5075340 N**GEOLOGICAL UNIT:** Windsor Group, Mississippian age**DESCRIPTION:** Brownish-red, pebbly clay overlying shale and limestone.**SAMPLE INTERVAL:** 2.4 m chip sample**TYPE OF MATERIAL:** Clay**UNFIRED CHARACTERISTICS:** Fair workability. Good plasticity. Water of plasticity 20.6%. Cracks with rapid drying. Air shrinkage 4.2%.**P.C.E.:** 3-4**FIRED CHARACTERISTICS:**

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	1.40	14.43	Moderate reddish brown	Very hard
04	3.82	6.14	Dark moderate reddish brown	Very hard
02	7.65	1.22	Dark reddish brown	Steel hard

POTENTIAL USES: Suitable for bricks



Ref. Map II-E-13

Figure 32. Location map for samples CSP-134-137, 150-152 (Pugwash)

CUMBERLAND COUNTY

Sample Number
CSP-135

TOPOGRAPHICAL SHEET: 11E/13**LOCATION:** In a quarry, 2.4 km southwest of Pugwash, adjacent to Pugwash Basin (Fig. 32).**UTM:** 446420 E
5075340 N**GEOLOGICAL UNIT:** Windsor Group, Mississippian age**DESCRIPTION:** Grey shale and siltstone**ATTITUDE OF BEDDING:** Strike 320°, dip not determined**SAMPLE INTERVAL:** 2.7 m chip sample**TYPE OF MATERIAL:** Shale**UNFIRED CHARACTERISTICS:** Calcareous, hard, silty, grey shale. Very poor workability. Fair plasticity. Water of plasticity 16.0%. Safe drying. Air shrinkage 3.4%.**P.C.E. :** 12**FIRED CHARACTERISTICS:**

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
04	+6.03	48.01	Pale yellowish grey	Soft
02	+5.86	47.58	Yellowish grey	Soft
1	+5.18	45.76	Yellowish grey	Soft

POTENTIAL USES: None

CUMBERLAND COUNTY

Sample Number
CSP-136

TOPOGRAPHICAL SHEET: 11E/13

LOCATION: In a quarry, 2.4 km southwest of pugwash, adjacent to Pugwash Basin (Fig. 32).

UTM: 446420 E
5075340 N

GEOLOGICAL UNIT: Windsor Group, Mississippian age

DESCRIPTION: Reddish-brown shale overlying gypsum.

SAMPLE INTERVAL: 6 m chip sample

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Fair workability and plasticity. Water of plasticity 19.2%. Cracks with rapid drying. Air shrinkage 4.4%.

P.C.E.: 3-4

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	1.22	11.57	Moderate reddish brown	Hard
04	1.93	9.39	Moderate reddish brown	Hard
02	5.74	2.81	Dark moderate reddish brown	Steel hard

REMARKS: Short firing range. A few light specks on surface.

POTENTIAL USES: Suitable for drain tile only.

CUMBERLAND COUNTY

Sample Number
CSP-137

TOPOGRAPHICAL SHEET: 11E/13

LOCATION: Along road to Conns Mills, 5.6 km southwest of Pugwash (Fig 32).

UTM: 445510 E
5072600 N

GEOLOGICAL UNIT: Pictou Group, Pennsylvanian age

DESCRIPTION: Reddish-brown shale

ATTITUDE OF BEDDING: 55° /40° SE

SAMPLE INTERVAL: Grab sample

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Calcareous. Fair workability and plasticity. Water of plasticity 22.0%. Safe drying. Air shrinkage 3.5%.

P.C.E.: 3-4

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	1.21	12.82	Pale reddish brown	Hard
04	3.72	9.35	Pale reddish brown	Very hard
02	7.76	2.24	Dark moderate reddish brown	Steel hard

REMARKS: A few light specks on firing

POTENTIAL USES: Drain tile and structural tile.

CUMBERLAND COUNTY

Sample Number

CSP-138

TOPOGRAPHICAL SHEET: 11E/12

LOCATION: Along the road from Oxford to Hansford, approximately 457 m from Hansford (Fig. 33).

UTM: 440440 E
5062900 N

GEOLOGICAL UNIT: Windsor Group, Mississippian age

DESCRIPTION: Grey clay or mudstone

SAMPLE INTERVAL: 2.4 m chip sample

TYPE OF MATERIAL: Clay

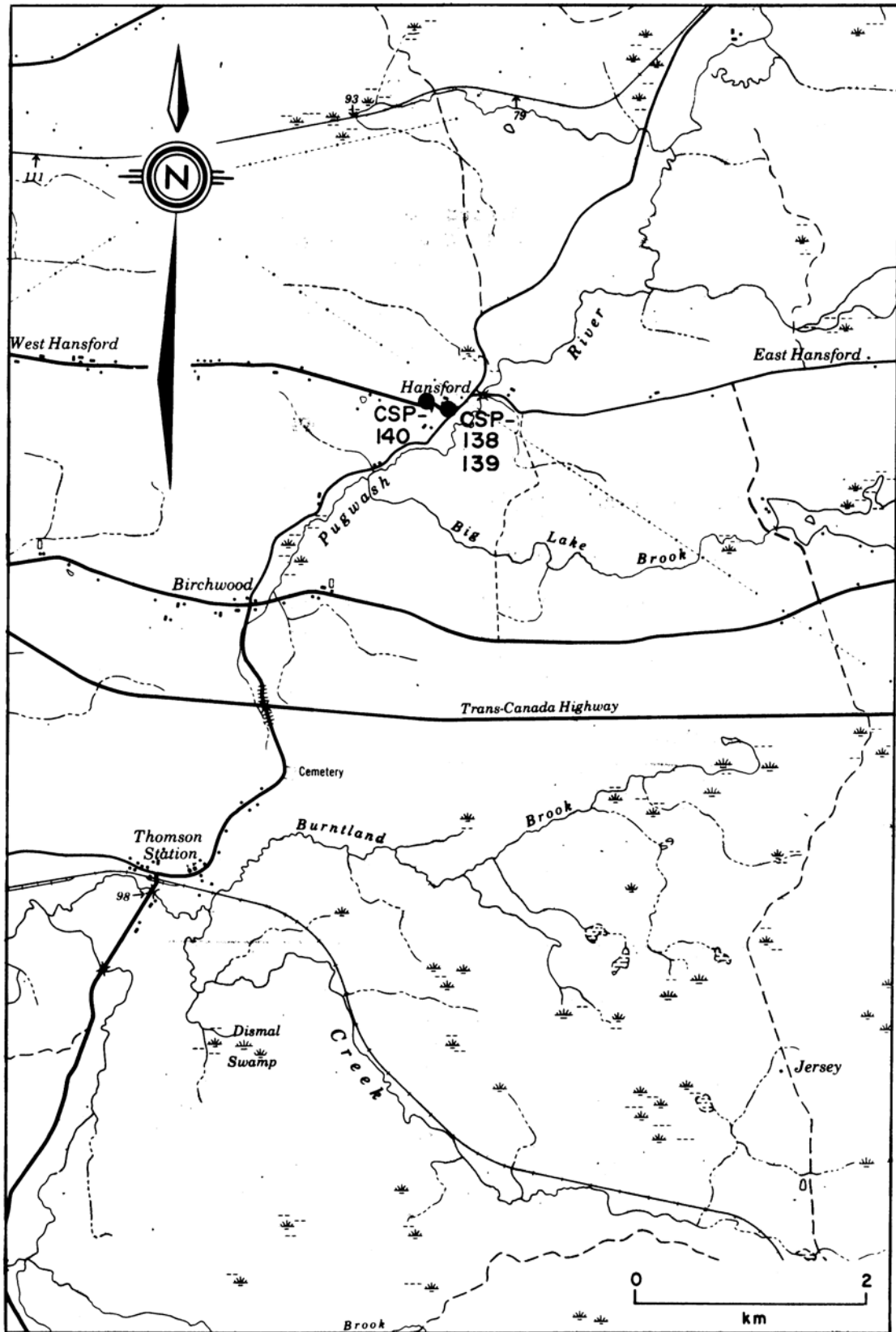
UNFIRED CHARACTERISTICS: Fair workability and plasticity. Water of plasticity 18.2%. Safe drying. Air shrinkage 3.8%.

P.C.E.: 4

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
04	0.18	16.88	Pale light brown	Fairly hard
02	0.86	14.94	Pale light brown	Hard
1	0.87	13.91	Pale light brown	Hard

POTENTIAL USES: None



Ref. Map II-E-12

Figure 33. Location map for samples CSP-138-140 (Hansford)

CUMBERLAND COUNTY

Sample Number
CSP-139

TOPOGRAPHICAL SHEET: 11E/12

LOCATION: Along the road from Oxford to Hansford, on the southern side of the road in the same area as sample CSP-138 (Fig. 33).

UTM: 440440 E
5062900 N

GEOLOGICAL UNIT: Windsor Group, Mississippian age

DESCRIPTION: Brown shale and clay exposed for approximately 122 m along the road.

SAMPLE INTERVAL: 7.6 m chip sample

TYPE OF MATERIAL: Shale and clay

UNFIRED CHARACTERISTICS: Good workability and plasticity. Water of plasticity 24.4%. Cracks with rapid drying. Air shrinkage 5.0%.

P.C.E.: 3+

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
04	2.63	11.63	Pale reddish brown	Hard
02	3.51	7.25	Pale reddish brown	Very hard
01	5.11	5.98	Pale reddish brown	Very hard

POTENTIAL USES: Drain tile.

CUMBERLAND COUNTY

Sample Number
CSP-140

TOPOGRAPHICAL SHEET: 11E/12

LOCATION: West of sample CSP-139, near Hansford, just north of the road to Oxford (Fig. 33).

UTM: 440270 E
5062990 N

GEOLOGICAL UNIT: Windsor Group, Mississippian age

DESCRIPTION: Light greenish-grey shale and clay

SAMPLE INTERVAL: 2.7 m chip sample

TYPE OF MATERIAL: Shale and clay

UNFIRED CHARACTERISTICS: Good workability and plasticity. Water of plasticity 25.6%. Cracks with rapid drying. Air shrinkage 5.4%.

P.C.E.: 3+

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
04	1.94	12.95	Pale reddish brown	Hard
02	3.71	7.88	Pale reddish brown	Very hard
1	5.11	5.24	Pale reddish brown	Steel hard

POTENTIAL USES: Drain tile, face brick and structural products

CUMBERLAND COUNTY

Sample Number
CSP-143

TOPOGRAPHICAL SHEET: 11E/13

LOCATION: On the eastern side of Route 368 on the Kerrs Mill Road approximately 1.6 km north of Middleboro (Fig. 34).

UTM: 455740 E
5068560 N

GEOLOGICAL UNIT: Pictou Group, Pennsylvanian age

DESCRIPTION: Bed of dark reddish shale and mudstone, 30.5 m thick.

ATTITUDE OF BEDDING: 65° /78° NW

SAMPLE INTERVAL: Grab sample across 30 m

TYPE OF MATERIAL: Shale and mudstone

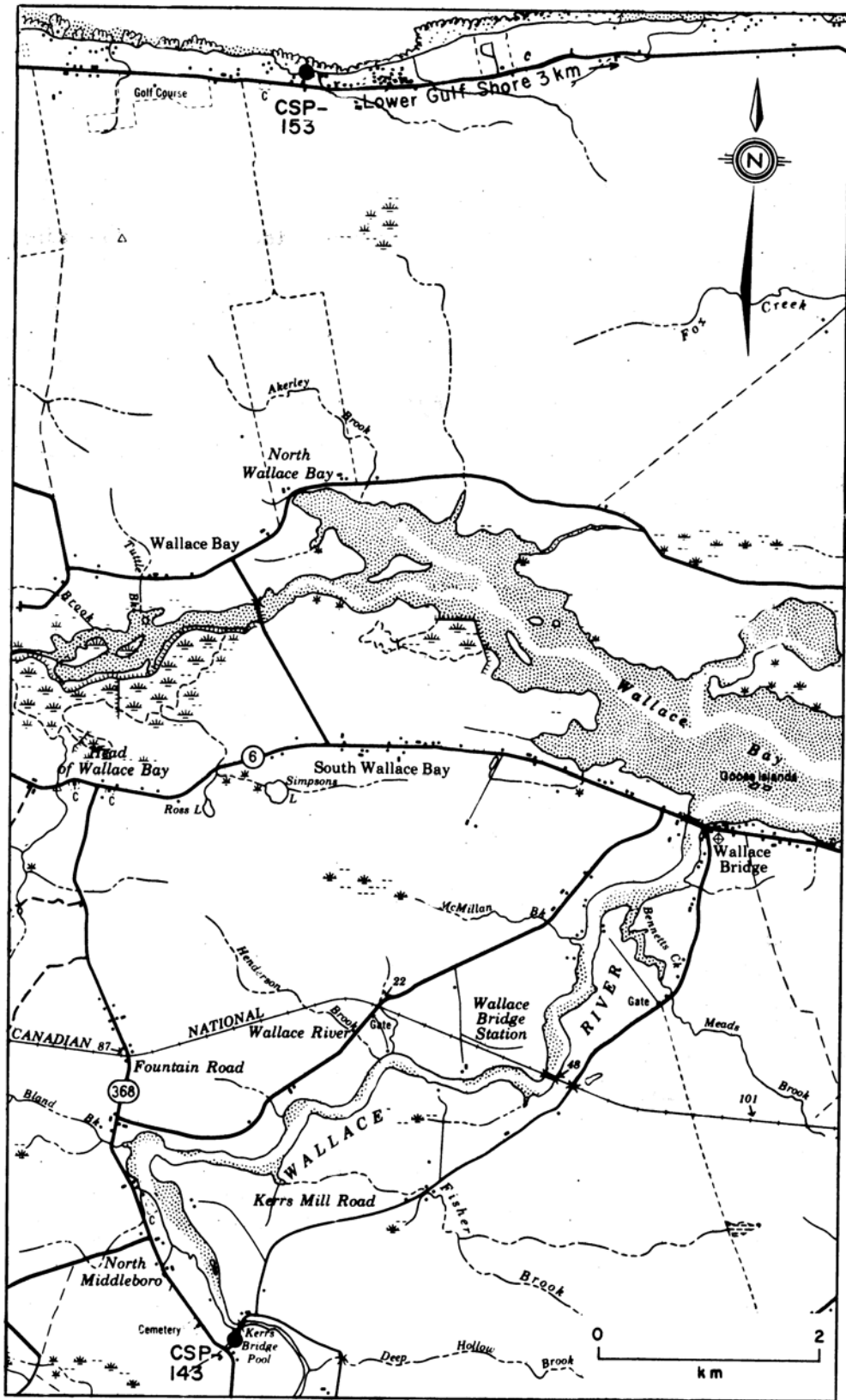
UNFIRED CHARACTERISTICS: Fair workability. Good plasticity. Water of plasticity 20.0%. Safe drying. Air shrinkage 4.0%.

P.C.E.: 3-4

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	1.74	10.64	Pale reddish brown	Hard
04	4.01	6.71	Pale reddish brown	Steel hard
02	7.72	0.77	Dark reddish brown	Steel hard

POTENTIAL USES: Drain tile, structural tile and face brick.



Ref. Map II-E-13

Figure 34. Location map for samples CSP-143, 153 (North Middleboro)

CUMBERLAND COUNTY

Sample Number
CSP-144

TOPOGRAPHICAL SHEET: 11E/13

LOCATION: Along the western bank of the Shinimicas River approximately 3.2 km southwest of Northport (Fig. 35).

UTM: 430990 E
5084720 N

GEOLOGICAL UNIT: Pictou Group, Pennsylvanian age

DESCRIPTION: Light reddish-brown clay and shale. Bed about 5 m thick and flat lying.

SAMPLE INTERVAL: 5 m chip sample

TYPE OF MATERIAL: Clay and shale

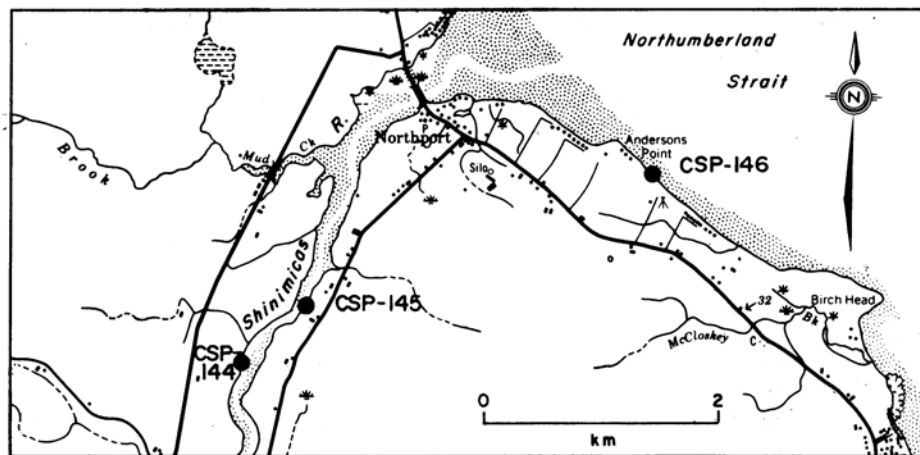
UNFIRED CHARACTERISTICS: Good workability and plasticity. Water of plasticity 22.0%. Safe drying at 85°C. Air shrinkage 4.2%.

P.C.E.: 2

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	2.44	9.65	Pale reddish brown	Hard
04	7.13	3.09	Pale reddish brown	Steel hard
02	8.70	0.04	Dark reddish brown	Steel hard

POTENTIAL USES: Drain tile, structural tile, face brick and sewer pipe.



Ref. Map 11-E-13
Figure 35. Location map for samples CSP-144-146 (Shinimicas River)

CUMBERLAND COUNTY

Sample Number
CSP-145

TOPOGRAPHICAL SHEET: 11E/13**LOCATION:** Along the eastern bank of Shinimicas River, approximately 2.2 km southwest of Northport (Fig. 35).**UTM:** 431570 E
5085190 N**GEOLOGICAL UNIT:** Pictou Group, Pennsylvanian age**DESCRIPTION:** Light reddish-brown clay-shale**SAMPLE INTERVAL:** Chip sample across 3 m**TYPE OF MATERIAL:** Clay-shale**UNFIRED CHARACTERISTICS:** Good workability. Very plastic. Water of plasticity 27.2%. Safe drying at 85°C. Air shrinkage 4.2%.**P.C.E:** 3**FIRED CHARACTERISTICS:**

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	5.56	7.80	Pale reddish brown	Steel hard
04	10.24	0.41	Pale reddish brown	Steel hard
02	10.58	0.04	Dark reddish brown	Steel hard

REMARKS: Some scumming on firing**POTENTIAL USES:** Common brick and drain tile

CUMBERLAND COUNTY

Sample Number
CSP-146

TOPOGRAPHICAL SHEET: 11E/13

LOCATION: Along the shore of Northumberland Strait, 1.6 km southeast of the highway bridge at Northport (Fig. 35).

UTM: 434470 E
5086240 N

GEOLOGICAL UNIT: Probably Pictou Group, Pennsylvanian age

DESCRIPTION: Light reddish-brown clay containing some stones, overlain by sand and gravel.

SAMPLE INTERVAL: Grab sample from 1 m pit dug on shore

TYPE OF MATERIAL: Clay

UNFIRED CHARACTERISTICS: Slightly calcareous, light reddish-brown clay with stones. Good workability. Very plastic. Water of plasticity 22.4%. Cracks with rapid drying. Air shrinkage 4.0%.

P.C.E.: 3+

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	2.52	11.07	Pale reddish brown	Hard
04	6.09	5.58	Pale reddish brown	Steel hard
02	9.71	0.10	Dark reddish brown	Steel hard

REMARKS: Warped on firing at cone 02

POTENTIAL USES: Drain tile

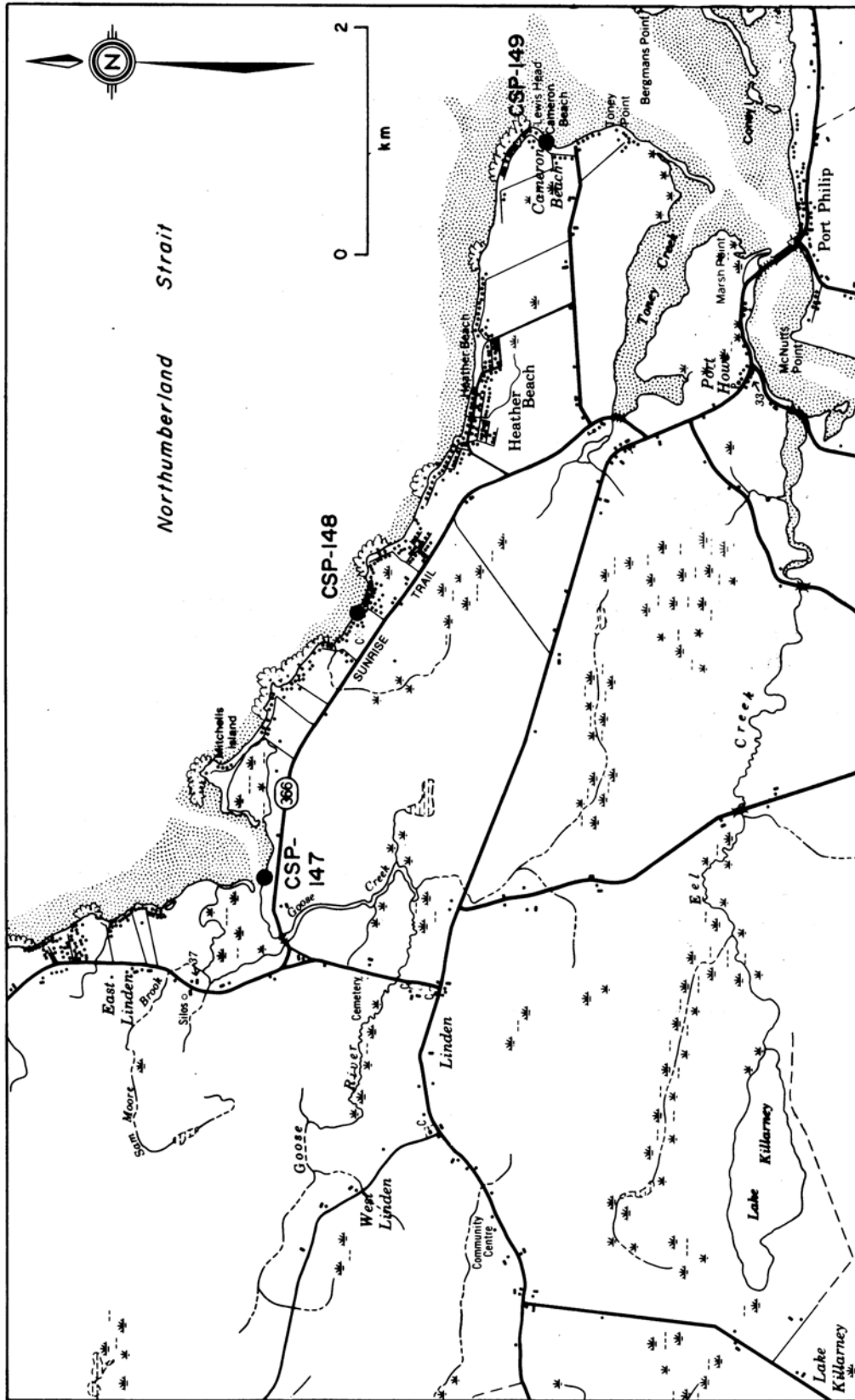
CUMBERLAND COUNTY**Sample Number**

CSP-147

TOPOGRAPHICAL SHEET: 11E/13**LOCATION:** Along Northumberland Strait, approximately 4 km northwest of Heather Beach (Fig. 36).**UTM:** 437060 E
5082160 N**GEOLOGICAL UNIT:** Pictou Group, Pennsylvanian age**DESCRIPTION:** Light reddish-brown clay containing a few pebbles.**SAMPLE INTERVAL:** Grab sample from pit along shore**TYPE OF MATERIAL:** Clay**UNFIRED CHARACTERISTICS:** Noncalcareous. Very good workability. Very plastic. Water of plasticity 22.4%. Cracks with rapid drying at 85°C. Air shrinkage 4.8%.**P.C.E.:** 3+**FIRED CHARACTERISTICS:**

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	2.10	10.50	Pale reddish brown	Hard
04	5.27	5.93	Pale reddish brown	Steel hard
02	7.87	0.16	Dark moderate reddish brown	Steel hard

REMARKS: Light scumming on firing**POTENTIAL USES:** Common brick and drain tile



Ref. Map II-E-13

Figure 36. Location map for samples CSP-147-149 (Linden)

CUMBERLAND COUNTY

Sample Number
CSP-148

TOPOGRAPHICAL SHEET: 11E/13

LOCATION: Approximately 2 km northwest of Heather Beach, along Northumberland Strait (Fig. 36).

UTM: 439360 E
5081320 N

GEOLOGICAL UNIT: Uncertain, probably Pictou Group, Pennsylvanian age

DESCRIPTION: Light reddish-brown clay with pebbles

SAMPLE INTERVAL: Grab sample from wall of pit

TYPE OF MATERIAL: Clay

UNFIRED CHARACTERISTICS: Very good workability. Very plastic. Water of plasticity 24.0%. Cracks with rapid drying. Air shrinkage 4.4%.

P.C.E.: 3

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	3.14	9.89	Pale reddish brown	Hard
04	7.33	4.57	Pale reddish brown	Steel hard
02	9.25	0.03	Dark moderate reddish brown	Steel hard

REMARKS: Scumming on firing

POTENTIAL USES: Common brick and drain tile

CUMBERLAND COUNTY

Sample Number
CSP-149

TOPOGRAPHICAL SHEET: 11E/13

LOCATION: On the shore of Northumberland Strait at Lewis Head, approximately 4.8 km northwest of Pugwash (Fig. 36).

UTM: 443460 E
5079600 N

GEOLOGICAL UNIT: Uncertain, probably Riversdale Group of Pennsylvanian age

DESCRIPTION: Reddish and brownish clay, containing a few small pebbles, exposed along shore.

SAMPLE INTERVAL: Grab sample, obtained by using a spade

TYPE OF MATERIAL: Clay

UNFIRED CHARACTERISTICS: Calcareous. Very good workability. Very plastic. Water of plasticity 18.0%. Cracks with rapid drying. Air shrinkage 5.3%

P.C.E.: 3+

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	0.79	11.82	Dark pale reddish brown	Hard
04	1.58	10.31	Pale reddish brown	Hard
02	4.92	4.08	Dark moderate reddish brown	Steel hard

REMARKS: Slight scumming on firing. Short firing range

POTENTIAL USES: Drain tile

CUMBERLAND COUNTY

Sample Number
CSP-150

TOPOGRAPHICAL SHEET: 11E/13

LOCATION: At the entrance to Pugwash Harbour approximately 0.5 km northwest of Mitchells Beach (Fig. 32).

UTM: 445520 E
5078350 N

GEOLOGICAL UNIT: Clay overlying Pictou Group

DESCRIPTION: Light reddish-brown clay containing a few pebbles. Exposure 2.4 m thick.

SAMPLE INTERVAL: Grab sample from 1 m section of clay in pit.

TYPE OF MATERIAL: Clay

UNFIRED CHARACTERISTICS: Very good workability. Very plastic. Water of plasticity 20.0%. Cracks with rapid drying. Air shrinkage 4.9%.

P.C.E.: 3

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	1.05	11.08	Dark pale reddish brown	Hard
04	2.46	8.92	Brown	Very hard
02	6.13	2.64	Dark moderate reddish brown	Steel hard

REMARKS: Slight scumming on firing

POTENTIAL USES: Brick and drain tile

CUMBERLAND COUNTY

Sample Number
CSP-151

TOPOGRAPHICAL SHEET: 11E/13

LOCATION: Approximately 3 km northwest of Pugwash at the entrance to Pugwash Harbour at Mitchells Beach (Fig. 32).

UTM: 445830 E
5078080 N

GEOLOGICAL UNIT: Pictou Group, Pennsylvanian age

DESCRIPTION: Brown shale, 7.6 m in thickness

ATTITUDE OF BEDDING: 75° 110° NW

SAMPLE INTERVAL: Grab sample along strike, 4.5 kg.

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Slightly calcareous. Fair workability. Very plastic. Water of plasticity 18.4%. Cracks with rapid drying. Air shrinkage 3.5%.

P.C.E.: 1+

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	1.64	10.60	Dark pale reddish brown	Very hard
04	3.45	6.95	Pale reddish brown	Very hard
02	7.27	0.36	Dark moderate reddish brown	Steel hard

REMARKS: Some scumming on firing.

POTENTIAL USES: Common brick and drain tile.

CUMBERLAND COUNTY

Sample Number
CSP-152

TOPOGRAPHICAL SHEET: 11E/13

LOCATION: Along the shore of Northumberland Strait at Matheson Cove, 2.4 km north of Pugwash (Fig. 32).

UTM: 449810 E
5079760 N

GEOLOGICAL UNIT: Riversdale Group, Pennsylvanian age

DESCRIPTION: Weathered brown clay containing a few stones. Overlain by boulders and gravel

SAMPLE INTERVAL: Grab sample from a 1 m section in a pit

TYPE OF MATERIAL: Clay

UNFIRED CHARACTERISTICS: Very slightly calcareous. Fair workability. Fair plasticity. Water of plasticity 23.6%. Safe drying at 85°C. Air shrinkage 3.1%.

P.C.E.: 3

FIRED CHARACTERISTICS :

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	1.21	15.79	Pale reddish brown	Hard
04	3.25	11.72	Pale reddish brown	Hard
02	8.97	0.89	Dark moderate reddish brown	Steel hard

REMARKS: Some scumming on firing.

POTENTIAL USES: None

CUMBERLAND COUNTY

Sample Number
CSP-153

TOPOGRAPHICAL SHEET: 11E/13

LOCATION: Along the shore of Northumberland Strait near Lower Gulf Shore (Fig. 34).

UTM: 456380 E
5079900 N

GEOLOGICAL UNIT: Pictou Group, Pennsylvanian age

DESCRIPTION: Hard, silty reddish-brown shale, about 3 m thick.

ATTITUDE OF BEDDING: 102°/29° NE

SAMPLE INTERVAL: Chip sample across 3 m

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Fair workability. Good plasticity. Water of plasticity 20.0%. Safe drying. Air shrinkage 4.2%.

P.C.E.: 2

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	1.48	10.20	Pale reddish brown	Very hard
04	4.02	6.09	Pale reddish brown	Very hard
02	8.18	0.40	Dark moderate reddish brown	Steel hard

POTENTIAL USES: Drain tile, face brick and sewer pipe.

CUMBERLAND COUNTY

Sample Number
CSP-154

TOPOGRAPHICAL SHEET: 11E/14

LOCATION: On the peninsula between Fox and Wallace Harbours near Dougherty Point (Fig. 37).

UTM: 466420 E
5075640 N

GEOLOGICAL UNIT: Uncertain, probably Pleistocene age

DESCRIPTION: Light reddish-brown clay with pebbles.

SAMPLE INTERVAL: 1 m chip sample

TYPE OF MATERIAL: Clay

UNFIRED CHARACTERISTICS: Good workability and plasticity. Water of plasticity 18.4%. Safe drying. Air shrinkage 5.3%

P.C.E.: 4-

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	0.62	11.40	Pale reddish brown	Hard
04	1.23	10.49	Pale reddish brown	Hard
02	4.40	3.94	Dark moderate reddish brown	Steel hard

POTENTIAL USES: Common brick and drain tile.

CUMBERLAND COUNTY

Sample Number
CSP-155

TOPOGRAPHICAL SHEET: 11E/14

LOCATION: Along the shore between Fox Harbour and Wallace Harbour on small peninsula approximately 0.6 km southeast of CSP-154 (Fig. 37).

UTM: 466870 E
5075290 N

GEOLOGICAL UNIT: Uncertain, Pleistocene or an altered Riversdale Group

DESCRIPTION: Reddish-brown clay containing pebbles.

SAMPLE INTERVAL: Grab sample from 1 m section of clay

TYPE OF MATERIAL: Clay

UNFIRED CHARACTERISTICS: Good workability. Fair plasticity. Water of plasticity 19.0%. Cracks with rapid drying.

P.C.E.: 3-4

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	0.44	10.87	Pale reddish brown	Hard
04	1.40	9.62	Pale reddish brown	Hard
02	4.18	3.75	Dark moderate reddish brown	Steel hard

REMARKS: Some scumming on firing

POTENTIAL USES: Drain tile

CUMBERLAND COUNTY

Sample Number
CSP-156

TOPOGRAPHICAL SHEET: 11E/14

LOCATION: On the peninsula between Fox and Wallace Harbours at Mullins Point (Fig. 37).

UTM: 466870 E
5074280 N

GEOLOGICAL UNIT: Pictou Group, Pennsylvanian age

DESCRIPTION: Shale, 3 m in thickness

SAMPLE INTERVAL: 3 m chip sample

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Calcareous. Fair workability and plasticity. Water of plasticity 19.0%. Cracks with rapid drying. Air shrinkage 2.4%.

P.C.E.: 3-4

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	0.69	13.23	Pale reddish brown	Hard
04	2.39	10.42	Pale reddish brown	Hard
02	5.39	4.09	Dark moderate reddish brown	Steel hard

REMARKS: Some scumming on firing.

POTENTIAL USES: Drain tile

CUMBERLAND COUNTY

Sample Number
CSP-157

TOPOGRAPHICAL SHEET: 11E/14**LOCATION:** Along the shore of Northumberland Strait, about 4 km northwest of Malagash (Fig. 37).**UTM:** 469210 E
5072810 N**GEOLOGICAL UNIT:** Pictou Group, Pennsylvanian age**DESCRIPTION:** Reddish-brown plastic clay**SAMPLE INTERVAL:** Grab sample from 61 cm section in pit.**TYPE OF MATERIAL:** Clay**UNFIRED CHARACTERISTICS:** Good workability. Fair plasticity. Water of plasticity 18.0%. Cracks with rapid drying. Air shrinkage 3.9%.**P.C.E.:** 3-4**FIRED CHARACTERISTICS:**

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	1.04	10.47	Pale reddish brown	Hard
04	1.39	9.11	Pale reddish brown	Very hard
02	4.35	3.39	Dark moderate reddish brown	Steel hard

REMARKS: Some scumming on firing.**POTENTIAL USES:** Common brick and drain tile

CUMBERLAND COUNTY

Sample Number
CSP-158

TOPOGRAPHICAL SHEET: 11E/14

LOCATION: Exposure on the shore of the Northumberland Strait, 2.4 km north of Malagash (Fig. 37).

UTM: 471210 E
5071600 N

GEOLOGICAL UNIT: Pictou Group, Pennsylvanian age

DESCRIPTION: Brownish-red shale, exposure about 6 m thick.

ATTITUDE OF BEDDING: 077° /88° NW

SAMPLE INTERVAL: Grab sample along strike

TYPE OF MATERIAL: Shale

UNFIRED CHARACTERISTICS: Fair workability. Good plasticity. Water of plasticity 16.8%. Cracks with rapid drying at 85°C. Air shrinkage 4.4%.

P.C.E.: 3+

FIRED CHARACTERISTICS:

Cone No.	Fired Shrinkage %	Absorption %	Colour	Hardness
06	1.05	9.11	Moderate reddish brown	Hard
04	2.80	6.36	Moderate reddish brown	Very hard
02	6.05	1.60	Dark moderate reddish brown	Steel hard

POTENTIAL USES: Face brick, drain tile, structural tile and sewer pipe