

Archaeological Salvage Excavation
of the JaEm-3 site, 1991
Kangirsuk, Nunavik

Presented to:
Municipality of Kangirsuk

By:
Avataq Cultural Institute

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Acknowledgments

We wish to express our appreciation to Elijah Grey, past Mayor of Kangirsuk, for his assistance in arranging the excavation project at the JaEm-3 site and accommodations in the village for the Avataq archaeologists. Our thanks as well to Willie Tomassie, President of the Saputik Landholding Corporation, who implemented measures to protect the site from construction work.

The project was financed by a grant from the Société d'habitation du Québec and by funds apportioned from ministère des Affaires culturelles du Québec allocations to Avataq for archaeology.

The Avataq Cultural Institute gratefully acknowledges the contributions of the above individuals and agencies to the JaEm-3 archaeological salvage excavation project.

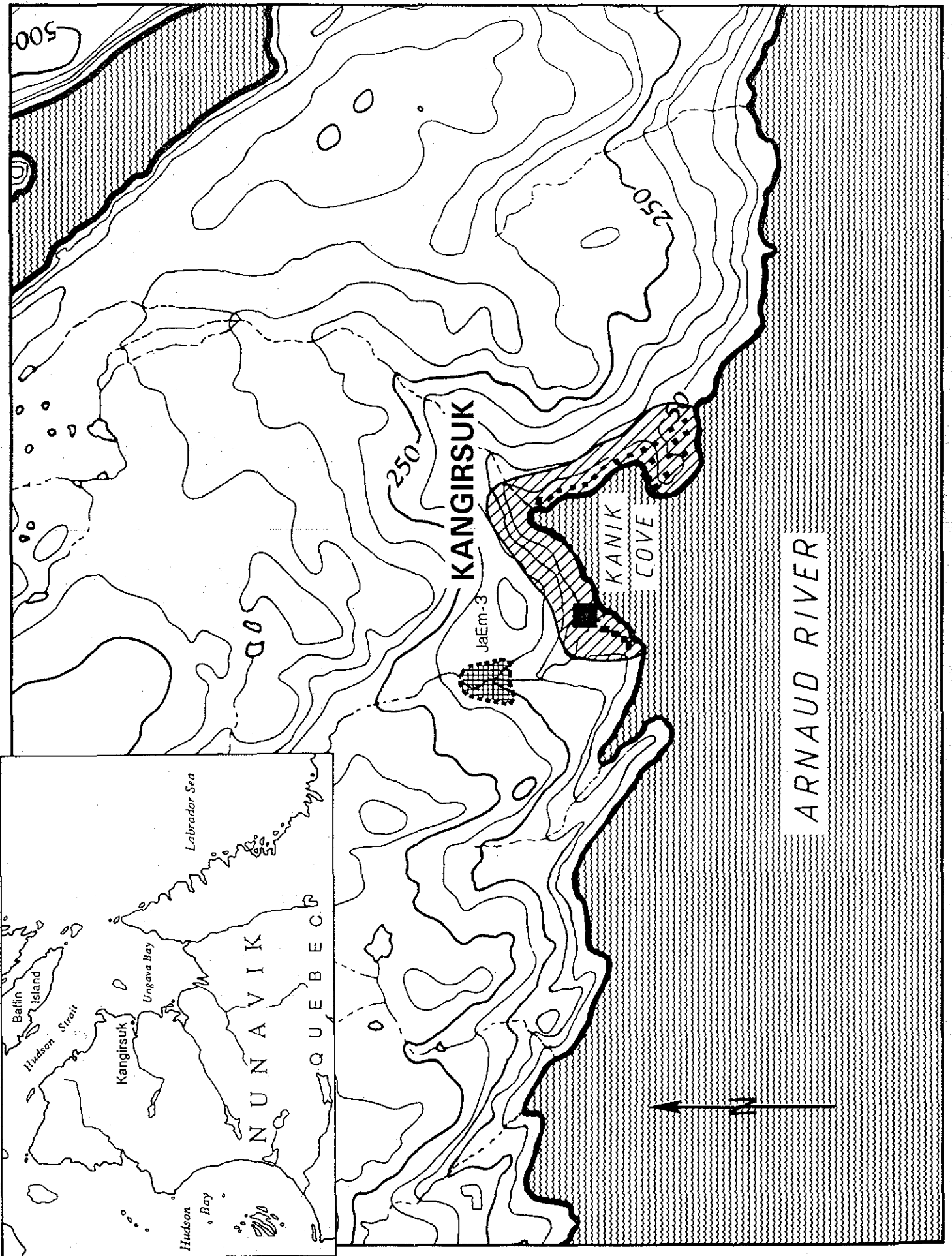
1.0 Introduction

The present report concerns the archaeological salvage excavation project conducted in 1991 at the JaEm-3 site. This Pre-Dorset habitation site is located in the Municipality of Kangirsuk, on the Arnaud River, in Nunavik (Figure 1). It is situated on the northwestern edge of the village, approximately 400 m north of the river and about 15 km west of Ungava Bay.

The project represents the culmination of efforts undertaken over the years to protect the JaEm-3 site. It was prompted by information received from the Kativik Regional Government regarding the proposed use of the locality as a gravel pit for the construction last summer of new houses in the village. This possibility was confirmed in later discussions with the municipality and the Société d'habitation du Québec, both of which noted the scarcity of gravel in the vicinity of Kangirsuk. Both also pointed out that deposits nearest to the village suitable for housing construction work were contained in the site. However, advised of the archaeological importance of JaEm-3, the municipality readily consented to explore possible alternative sources of gravel for this work. As well, the SHQ agreed to delay its planned exploitation of the locality and, in the interim, to sponsor archaeological salvage excavations in the site.

Field activities were subsequently carried out over the two-week period between August 17 and 30. The field crew was composed of William Nungak, Pasha Annahatak and Lucy Grey, all of whom are from Kangirsuk. The crew was supervised by Ian Badgley, Resident Archaeologist of Avataq, and Claude Pinard, assistant supervisor.

Figure 1. Location of the JaEm-3 site.



2.0 The JaEm-3 site

General Description of Area B

The JaEm-3 site comprises 2 occupation areas situated in a short, relatively wide valley. Area A consists of 9 tent rings, a cache and 3 fox traps distributed along the western flank of the valley (c.f., Avataq, 1987a, Appendix 4). It occupies gravel deposits controlled by bedrock outcrops and is separated from Area B to the east by a small, downcut stream. As only Area B was threatened by gravel extraction work, all project field activities were carried out in this section of the site.

Area B is composed of a series of well-drained gravel beach ridges extending eastward from the stream to the base of a low bedrock hill. The beach ridges are bounded to the north and west by discontinuous outcrops and, to the south, by a gravel pit. The vegetation is dominated by low mosses and lichens mixed with short grasses. Dense alder growth and intermittent sphagnum colonies occur in the southeastern portion of the area.

The area covers approximately 7,300 m² and varies in altitude from 28 to 40 m.a.s.l. Site disturbance includes a graded access road roughly 5m in width, which extends northward from the gravel pit across the area. The beach ridges west of the road and the eastern terrace of the stream have also been disturbed by ATV and other vehicle traffic. As well, a plywood shed was placed in the southeastern part of the area several years ago for firefighting practice.

Area B consists of 16 tent rings, 2 of which were identified last summer (Table 1). Two others recorded earlier have been completely obliterated by the access road. The habitation structures are of various form and range in dimensions from 2.20 m in diameter to 3.10 x 3.10 m. In addition to the tent rings, several concentrations of lithic artifacts and scattered specimens are found on the surface, particularly in disturbed zones.

Research History

The JaEm-3 site was discovered during the 1985 archaeological inventory of the airport study area of Kangirsuk (Avataq, 1987a). At that time a total of 140 lithic waste flakes and 8 stone tools, including a polished knife in purple slate, were collected in the site. The tools suggested that the site was

Table 1. Summary of Area B Habitation Structures

Structure	Form	Dimension (m)
10	irregular	2.30 x 2.50
11	irregular	2.30 x 2.50
12	circular	2.40 dia.
13	circular	2.20 dia.
14	circular	2.40 dia.
15	oval	2.30 x 2.50
16	circular	2.30 dia.
17	oval	2.30 x 2.60
18	irregular	3.10 x 3.10
19	circular	2.30 dia.
20	irregular	2.20 x 2.30
21	oval	2.30 x 2.60
22 (destroyed)	-	-
23 (destroyed)	-	-
24	oval	2.50 x 3.00
25	oval	2.75 x 3.00
26	irregular	2.20 x 2.30
27	oval	2.50 x 3.00

m: metre

dia.: diametre

originally occupied by Early Palaeoeskimo groups of the Pre-Dorset culture during the 2nd millenium B.C. and, later, by groups of the Dorset culture, which dates from about 800 B.C. to A.D. 1400 in Nunavik. However, this initial interpretation has been altered as a result of last summer's excavation project. As the project yielded no evidence of Dorset occupation, it now appears that Area B of the site is exclusively Pre-Dorset in cultural affiliation.

Residential construction lots located south of the site were also surveyed in 1985 (Avataq, 1986). Although JaEm-3 was not directly endangered by the housing construction work, gravel pit operations for this work were initiated close to the southern limit of Area B the week after the completion of the inventory. However, informed of the location of the site, the municipality immediately halted those operations.

An emergency archaeological survey of the JaEm-3 site was carried out the following year (Avataq, 1987b). This exercise was requested by the municipality within the context of the electrical generating plant relocation project in the village. It involved the evaluation of the impacts of extracting gravel from Area B or of constructing a road across the area to a second source of gravel for that project. The survey resulted in the identification of an additional tent ring in the area (i.e., Structure 25) and the recovery of 23 lithic specimens from the surface in the vicinity of the structure.

The JaEm-3 site was the only Pre-Dorset occupation component known on the west coast of Ungava Bay in 1986 and, as recommended in the survey report, the municipality protected Area B from construction work related to the relocation of the generating plant. With the exception of the access road, which was constructed in 1989, this area of the site has remained basically undisturbed since that time.

3.0 Field Techniques and Excavation

A grid system comprised of intersecting 1-metre bands was installed in Area B using a Sokkisha theodolite and 60-metre surveyors' chains. The east-west bands in the grid were designated by alphabetical letters while those oriented north-south were sequentially numbered. The square metres formed the basic excavation units and were identified by an alpha-numerical code (i.e., BR44). The value of the letters and numbers increased toward the west and north, respectively.

A total of 61 m² was excavated during the project. These excavations were centred on Structures 24, 25 and 27 (46 m²), in the southern section of Area B. Seven square metres were excavated in a possible tent ring situated to the east of these structures. Although the suggested habitation was not confirmed, this sampling revealed 2 activity areas. The remaining 8 m² were excavated in 2 other activity areas located on the western edge of the access road.

Waste flakes recovered from the excavation units were collectively registered according to stratigraphic level and quadrant. The quadrants, measuring 50 x 50 cm, were identified by position in the square metre (i.e., southwest, southeast, etc.). The north and east co-ordinates were recorded for each tool and tool fragment, all of which were individually collected.

The location of all lithic specimens and other occupation data in the square metres was plotted on millimetric graph paper at a scale of 1:10. On the other hand, as separate stratigraphic levels were virtually non-existent in the excavation zones, no stratigraphic profiles were recorded. Area B in general, the habitation structures, interior features, in situ artifacts and other elements of interest were photographed in colour prints and in slides. Photography in black and white prints was prevented due to the malfunctioning of a third camera.

4.0 Project Results

4.1 Stratigraphy

As already noted, stratigraphy was poorly developed throughout the greater part of the excavated zones. With several exceptions it was composed of a thin mantle of vegetation and root mat (i.e., Level I) directly overlying sterile beach gravel (i.e., Level III). Level I varied in average thickness from 3 to 5 cm. Occasionally, the underlying root mat was mixed with small pockets of humus (i.e., Level II), averaging 1 to 2 cm in thickness.

Level II was best developed on the eastern perimeter of Structure 24, which is located on the western edge of a natural depression. It was also well represented in the southern half of Activity Area 1. In both of these instances the Level II humus attained a thickness of 6 cm and was overlain by sphagnum varying from 25 to 30 cm in maximum thickness.

4.2 Structures and Activity Areas

Habitation Structures

With few exceptions the rocks defining the 3 excavated habitation structures and the internal features of the structures were associated with the Level III gravel. The exceptions were located along the northeastern limit of Structure 24 and were associated with Levels I and II.

Structure 24 is oval in shape and measures 2.50 x 3.00 m (Appendix 4). A hearth approximately 45 cm in diameter composed of cobbles and slabs was situated in the southeastern portion of the structure. Several fire-cracked rocks and a thin lens of burnt moss and charcoal, 1 to 2 cm thick, were associated with this feature. Similar deposits of burnt organic matter mixed with small quantities of humus occurred on the southern periphery of the tent ring. The distribution of these deposits, coupled with the orientation of the structure and the position of the hearth, suggest that the entrance of the habitation was oriented toward the southwest.

The contour of Structure 25 is less clear. However, the few discernible perimeter rocks, together with artifact distributions, tend to indicate an oval configuration for the tent ring (Appendix 5). As defined, the structure measures 2.75 x 3.00 m and contains a centrally-located hearth, roughly 45 cm in diameter. The hearth consisted of a shallow depression lined with small flat stones and

bordered by a concentration of rocks, most of which were encrusted with burnt grease. A lens of charcoal about 2 cm thick extended from the depression to the southern limit of the habitation.

Structure 27 is well-defined, oval in form and measures 2.50 x 3.00 m (Appendix 6). An exterior hearth approximately 50 x 80 cm in overall dimensions was situated on the southeastern edge of the tent ring. This feature, composed of a concentration of flagstones, blocks and fire-cracked rocks, was interspersed with pockets of charcoal and lenses of humus. A small charcoal deposit also occurred in the southeastern portion of the structure.

Activity Areas

Activity Areas 1 and 2 are interpreted as representing lithic workshops (Appendix 6). The first of these areas yielded 3 lithic preforms associated with a small pocket of charcoal and the second produced a significant quantity of artifacts, including several tools. The limited excavations carried out in the 2 areas revealed a number of rocks of seemingly random distribution. Although no structures are apparent, it is suspected that one or more habitations may be located in the immediate vicinity of the activity areas.

Activity Areas 3 and 4 are characterized by substantial concentrations of waste flakes, which were visible on the surface. Both areas are interpreted as open-air workshops for the manufacturing of lithic tools. Each contained an appreciable number of naturally-occurring beach shingles of small size. Neither area is associated with a habitation structure or feature.

4.3 Lithic Collection

The excavations produced a total of 3,510 lithic artifacts (Table 2). The bulk of the collection was associated with Level I (N = 2,626) while 457 artifacts were retrieved from the surface of the excavation units. Level II yielded 422 specimens and 5 others were surfaced-collected on the ATV trail crossing the west-central portion of Area B.

The largest proportions of the collection were recovered from Structure 24 (30.77%) and Structure 27 (17.63%). Most of the specimens collected in the first structure were concentrated in the northeastern extremity of the habitation. In contrast, the overwhelming majority of the artifacts obtained from Structure 27

Table 2. Summary of the Lithic Collection

A. Class and Raw Material

Class	Raw Material						Total
	Slate	Ramah quartzite	Black quartzite	Milky quartz	Hyalin	Chert	
Point	-	2	1	-	-	1	4
Knife	9	2	-	-	-	-	11
Side scraper	-	1	-	-	-	-	1
Biface fragment	1	1	-	-	-	-	2
Flake core	3	-	-	3	-	-	6
Roughout	1	-	-	-	-	-	4
Preform	5	-	-	-	-	-	2
Retouched flake	9	-	-	-	-	-	9
Used flake	11	-	-	-	-	-	11
Sub-total	39	6	1	3	-	1	50
Waste flakes	3338	114	2	4	2	-	3460
Total	3377	120	3	7	2	1	3510

B. Provenience

Provenience	Surface		Level I		Level II		Total	
	N	%	N	%	N	%	N	%
Structure 24	6	0.17	767	21.85	307	8.75	1080	30.77
Structure 25	99	2.82	162	4.61	82	2.34	343	9.77
Structure 27	-	-	615	17.52	4	0.11	619	17.63
Activity Area 1	-	-	2	0.06	29	0.83	31	0.89
Activity Area 2	-	-	447	12.74	-	-	447	12.74
Activity Area 3	191	5.44	295	8.40	-	-	486	13.84
Activity Area 4	161	4.59	338	9.63	-	-	499	14.22
Other	5	0.14	-	-	-	-	5	0.14
Total	462	13.16	2626	74.81	422	12.03	3510	100.0

occurred in a dense concentration on the western perimeter of the tent ring, north of the hearth. A number of artifacts were overlain by rocks forming the eastern segment of Structure 24 and the hearth and adjacent part of Structure 27.

Structure 25 was less productive, yielding 9.77% of the collection. These specimens were distributed mainly in the western and northwestern portions of the structure and, to a lesser extent, around the hearth.

With one exception, no patterned distributions of artifacts were observed in the activity areas which, combined, produced more than 41% of the collection. The exception was a tight cluster of 3 preforms found in Activity Area 1.

The collection comprises 50 tools and tool fragments and 3,460 waste flakes. The tool assemblage consists exclusively of chipped-stone implements, with no traces of polishing evident on any of the specimens. The greater part of the assemblage is composed of retouched flakes, flakes showing use wear, unfinished tools such as preforms and roughouts and prepared flake cores. The few stylistic tools recovered include a variety of knives and 4 projectile points. Two of the points are tapered-stemmed in form, one is a small straight-stemmed example and the other is finely serrated along both lateral edges. A single side scraper and 2 fragments of bifacial tools of undetermined function were also recovered.

The waste flakes are of various size and pertain to all stages involved in the systematic production of stone implements. Most, however, are small and relate to the final stages of tool manufacturing.

Slate is by far the predominant raw material, representing more than 96% of the collection. This material is followed by Ramah quartzite (3.42%), the only known source of which is located at Ramah Bay, on the north coast of Labrador. Black quartzite, milky quartz, hyalin and chert each occur as a small fraction of a percentage.

4.4 Organic Remains

Preserved organic remains were represented mainly by deposits of burnt moss and charcoal associated with the hearths of the structures and fragments of charcoal scattered throughout the habitations and in Activity Areas 1 and 2. Five samples were collected from these deposits (Table 3). All were located in the root

mat at the base of Level I and were mixed with small quantities of humus.

Two decomposed bone fragments were also noted in Structure 27. Both consisted of yellow, fibrous stains in the Level III gravel. The advanced state of decomposition of the fragments prevented the recovery of these remains.

Table 3. List of Charcoal Samples

Sample	Structure	m ²	Quadrant
1	24	BN48	NW/SW
2	24	BN48	SE
3	24	BP47	SE
4	25	BS44	NW/SW
5	24	BP46	SE

4.5 Radiocarbon-dating

A charcoal sample collected from Structure 24 was submitted to the Geological Sciences Radiocarbon Lab of Brock University, St. Catharines, Ontario, for radiocarbon-dating. This sample provided a corrected date of 2670 ± 90 B.P. * (BGS 1522), or 720 B.C. plus or minus 90 years.

The date obtained falls in the late phase of the Pre-Dorset culture, which ended elsewhere in Arctic Canada around 600 B.C. (Maxwell, 1985:109). It is, however, several centuries later in age than was anticipated for Structure 24. Consequently, this radiocarbon determination is tentatively accepted as the minimum date for the occupation of Area B.

* B.P. refers to 'Before the Present' which, in archaeology, is fixed at A.D. 1950

5.0 Discussion

The results of the archaeological salvage excavation conducted in Area B of JaEm-3 indicate that the site was occupied by Pre-Dorset groups during the late 8th century B.C. As already noted, this date is considered to mark the end of occupation of the site, which was probably inhabited over a lengthy period of time. Warm-weather occupation is suggested by the tent rings and the open-air activity areas. As well, the spatial relationships and the dimensions of the habitations tend to suggest that Area B was repeatedly occupied through time by small groups composed of 1 or 2 families.

Re-occupation of the area is confirmed by the occurrence of lithic artifacts beneath rocks forming part of Structures 24 and 27. The location of these specimens indicates previous use of the spaces covered by the structures. The presence of earlier occupation components may explain the differences in the proportions of the lithic collection recovered from these 2 tent rings and in the Structure 25 zone. The latter zone appears to have been occupied only once.

Such differences may also relate to variation in the duration of the individual occupations. However, the relatively low numbers of lithics collected from the structures suggests that each was briefly occupied, perhaps for no more than several days. Temporary encampment at the site while travelling from one hunting area to another may be implied. In addition, homogeneity of the lithic raw material suggests that the occupations associated with the excavated structures and earlier components were closely related in time, possibly occurring over a very few years.

The lithic collection is distinguished by the extremely low percentage of chert and the preponderance of slate. Although use of slate by Pre-Dorset groups increased slightly through time, this raw material remained a minor element in the assemblages of the culture. Moreover, increased use of slate in the Pre-Dorset culture was accompanied by a correspondent increase in ground and polished tools. The only polished tool found to date at JaEm-3 is the knife in purple slate, which was surface-collected in 1985.

The tapered-stemmed points and serrated example from the site compare stylistically to point forms reported in northern Labrador (c.f., Tuck, 1975; Cox, 1978). The knives and side scraper are also generally similar to varieties collected from Pre-Dorset sites in Nunavik and other regions. However, the large size of the implements is unusual for the Pre-Dorset culture. As well, tool categories typical of the culture are totally lacking in the JaEm-3

collection. Such categories include burins, burins spalls and microblades which, individually or in combination, often constitute a substantial portion of Pre-Dorset tool assemblages.

The tools in the JaEm-3 assemblage describe a low level of functional variability. Besides hunting, the other major activities reflected by these tools are butchering and stone implement manufacturing. This limited range of activities tends to support the interpretation of short-term occupation of the excavated part of the site.

The data obtained from the JaEm-3 salvage excavation project provide important new information on the chronology and technological adaptations of the Pre-Dorset culture in Nunavik. These data, recovered from a very small part of Area B, confirm the potential of the site to contribute to a significantly better understanding of the culture in the region. At present, the site does not appear to be immediately threatened by construction work planned in the village. On the hand, the archaeological resources contained in Area B continue to be endangered by natural erosion and ATV and other vehicle traffic on the site.

In view of the above, it is strongly recommended that additional archaeological excavations be carried out in Area B of the JaEm-3 site at the earliest opportunity. It is also recommended that Area A be included in these excavations, so as to clarify the relationships between the 2 sections of the site.

6.0 References Cited

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7.0 Photographs

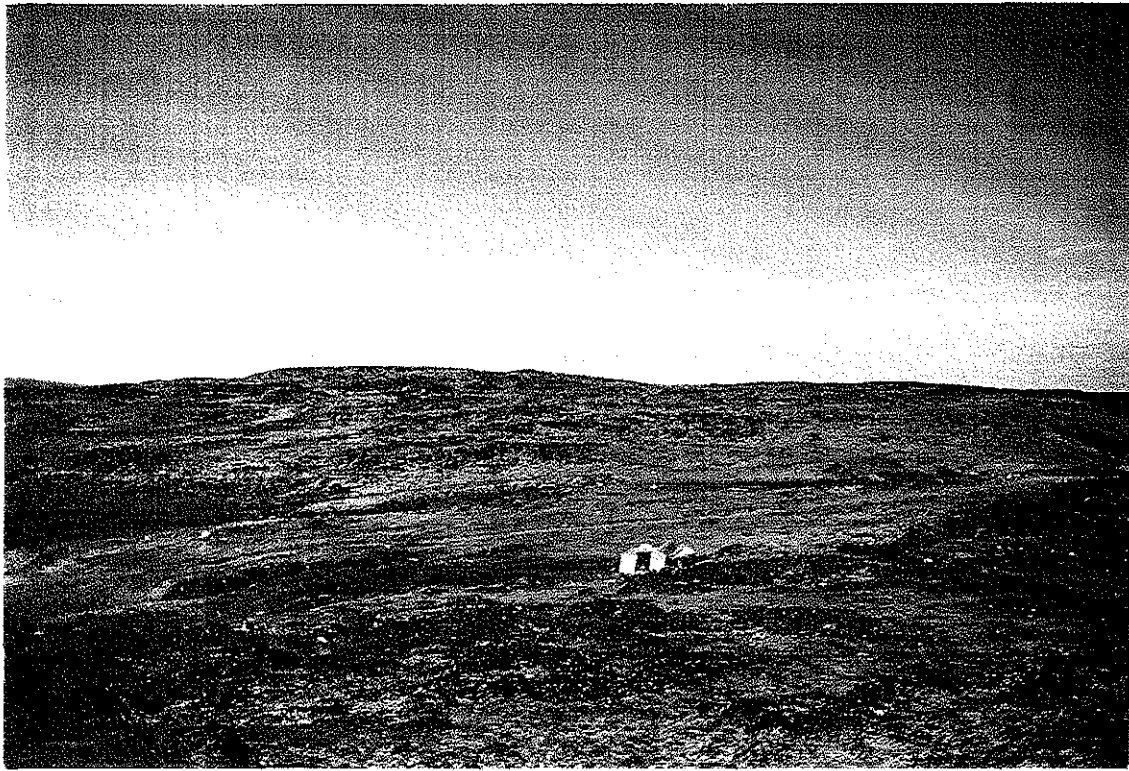


Photo 1. General view of JaEm-3, Area B, toward the west.



Photo 2. General view of JaEm-3, Area B, toward the east.

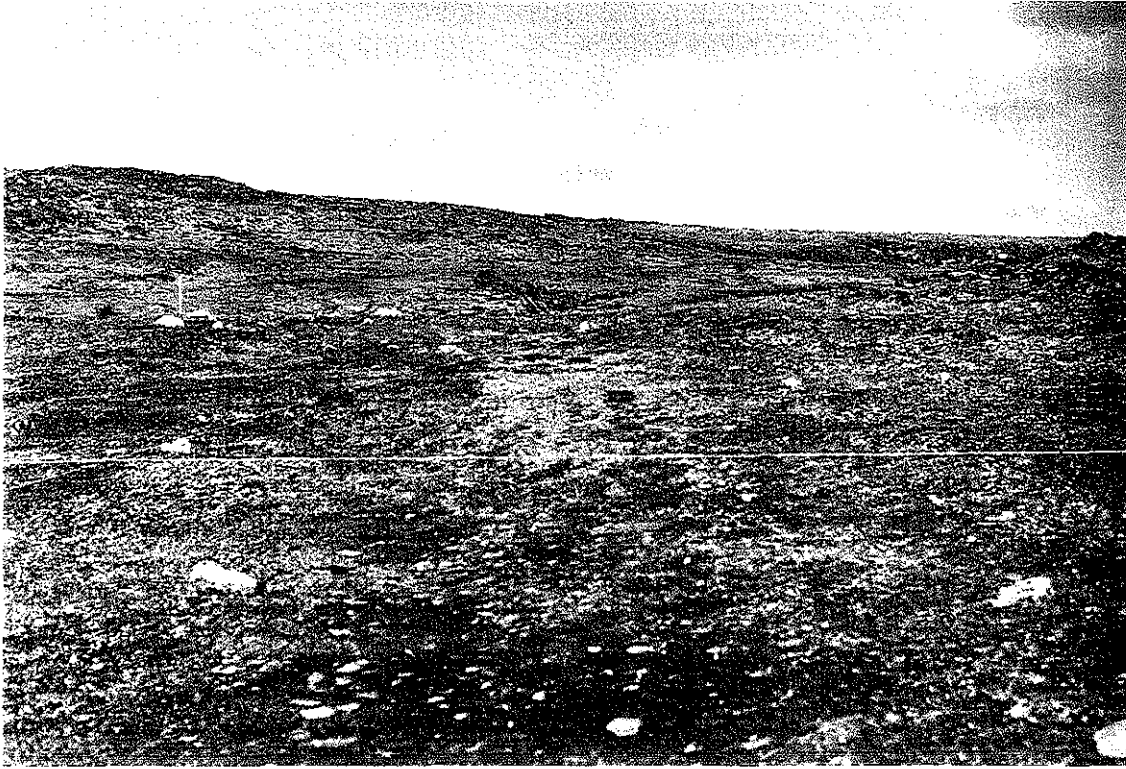


Photo 3. ATV trail, west - central portion of Area B, toward the northwest.



Photo 4. ATV trail, western portion of Area B, toward the southeast.

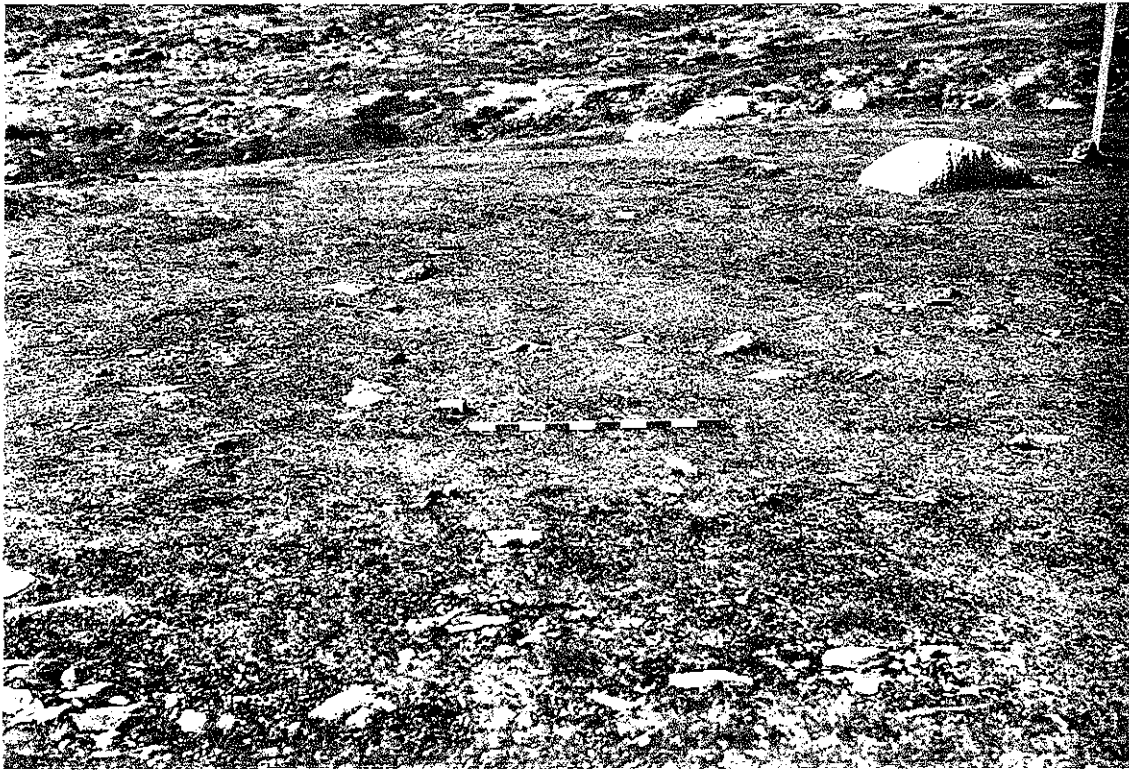


Photo 5. Structure 10, toward the west.



Photo 6. Structure 16, toward the southwest.

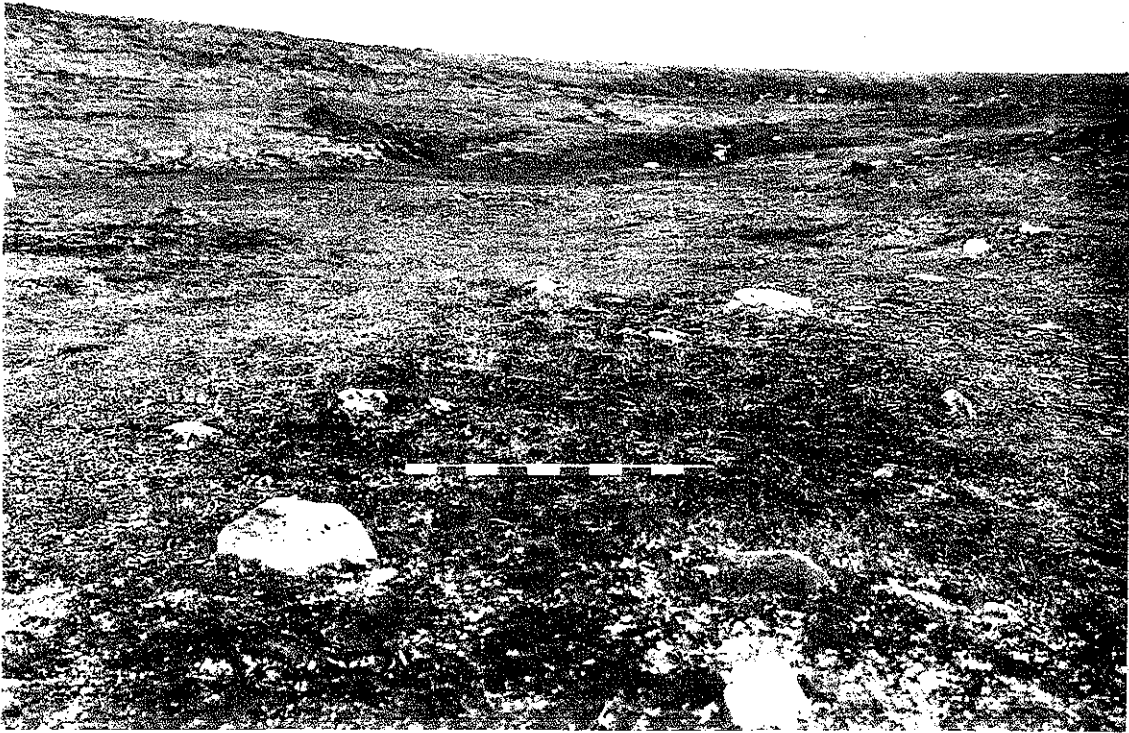


Photo 7. Structure 21, toward the northwest.

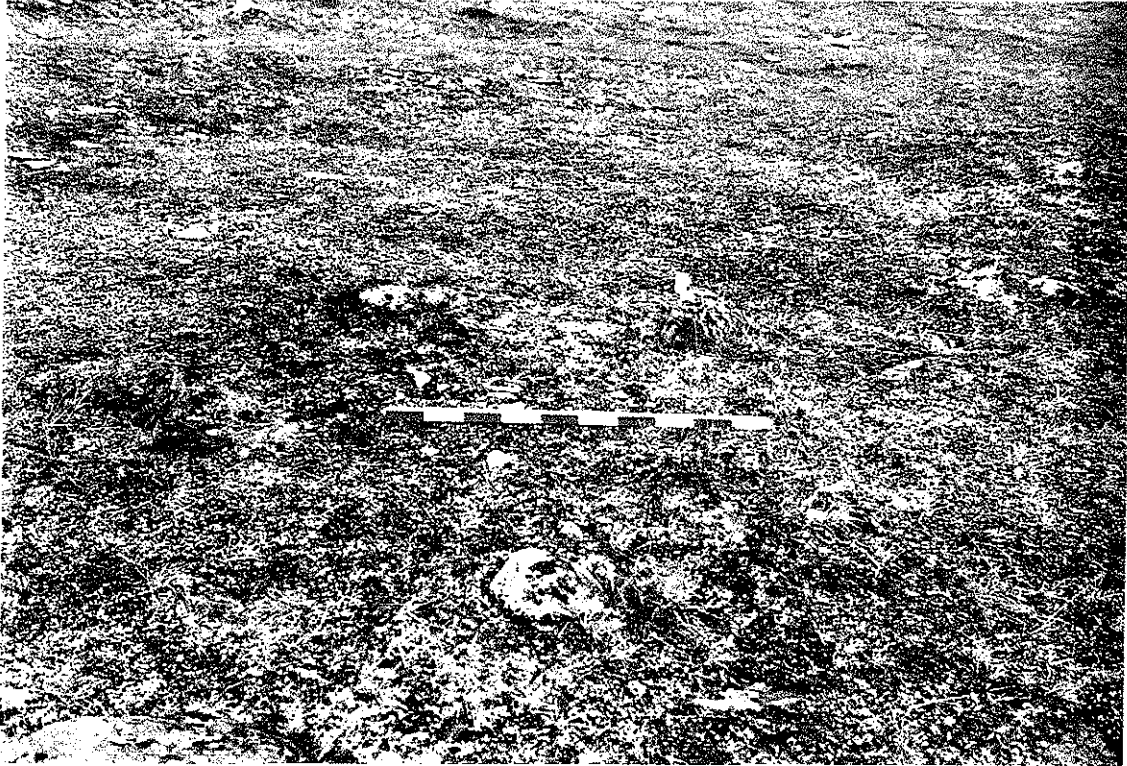


Photo 8. Structure 26, toward the west.



Photo 9. Structures 24 and 25, toward the southwest. The scale is in the centre of Structure 24 and Structure 25 is in the background.

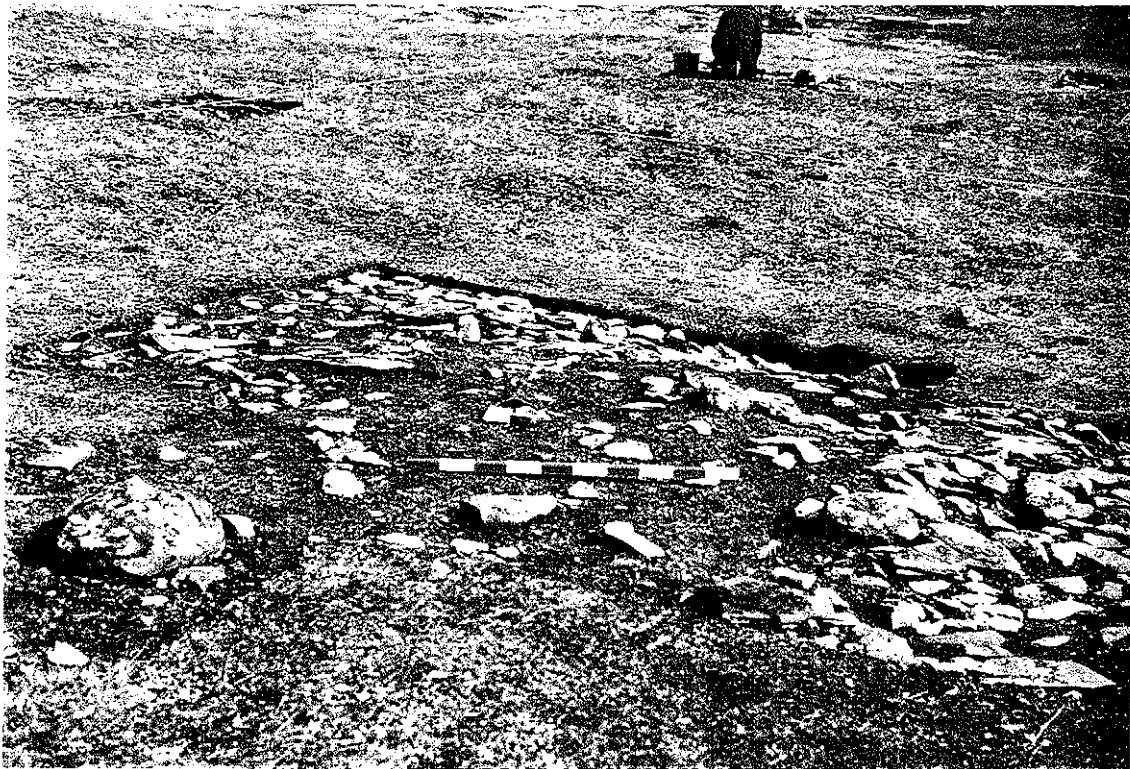


Photo 10. Structure 24, toward the northeast.



Photo 11. Structure 24 hearth, toward the northwest.



Photo 12. Structure 25, toward the northeast. The scale is in the centre of structure.

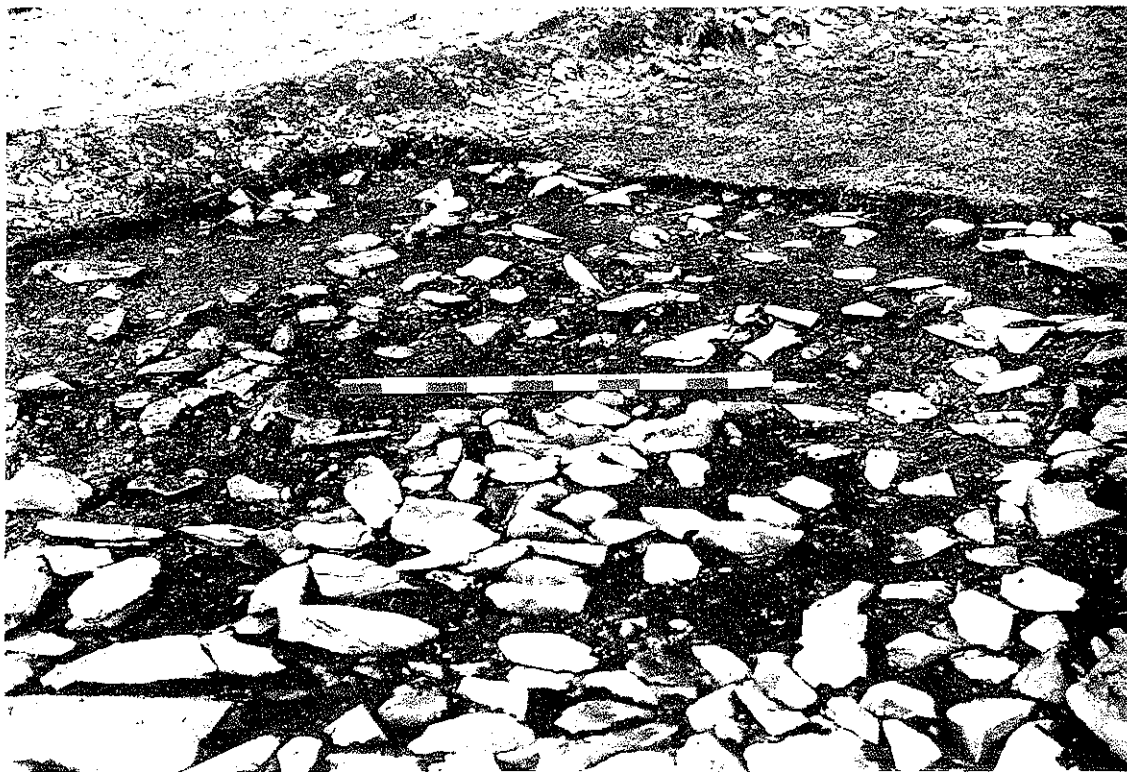


Photo 13. Structure 25 hearth, toward the northwest.



Photo 14. Structure 27, toward the west. The exterior hearth is located in the upper left corner of the excavated area.



Photo 15. Structure 27 hearth, toward the south.



Photo 16. Activity Area 1, toward the south.



Photo 17. In situ preforms, Activity Area 1.

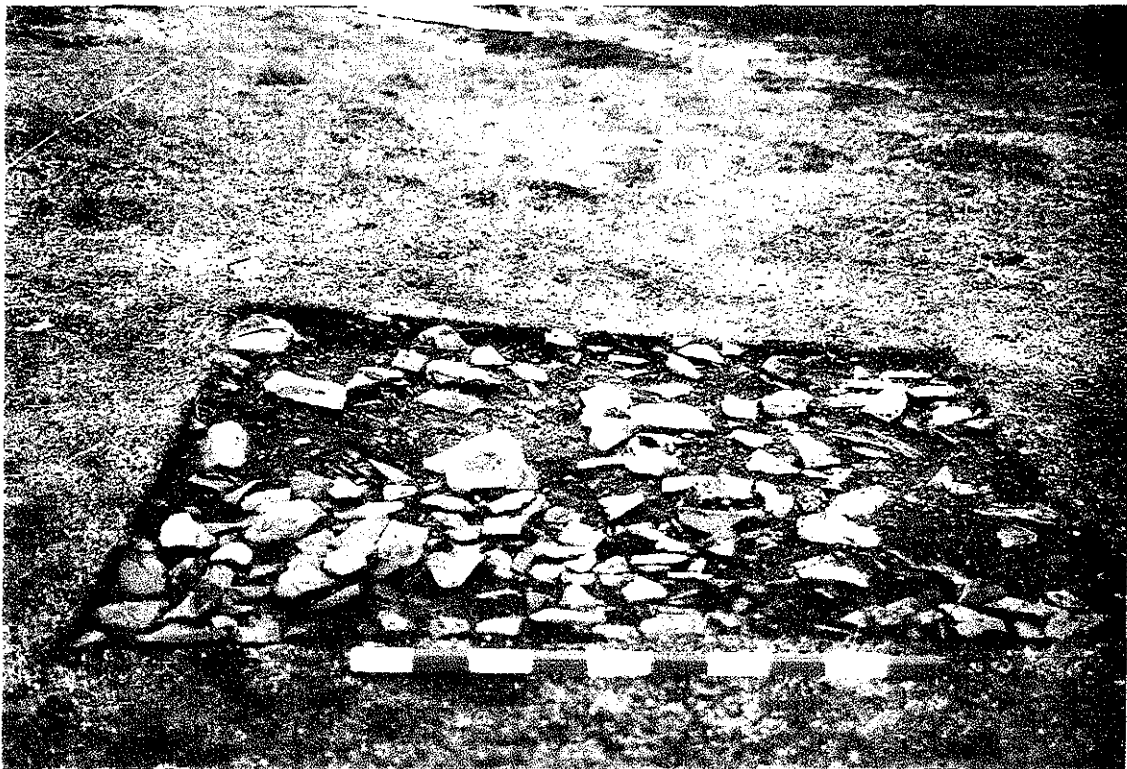


Photo 18. Activity Area 2, toward the east.

Appendix 1. List of Photographs

A. Colour Prints

Roll	Negative	Subject	Orientation	Date	
C 9105-1	10	General view, southern portion of Area B	W	17/8/91	
	11	General view of Area B	W	17/8/91	
	12	General view, southern portion of Area B	W	17/8/91	
	13	South-central portion of Area B	S	17/8/91	
	14	General view, central portion of Area B	S	17/8/91	
	15	General view of Area B	E	17/8/91	
	16	AU 48, <u>in situ</u> preforms	N	22/8/91	
	17	AU 48, <u>in situ</u> preforms	NE	22/8/91	
	18	AU 48, <u>in situ</u> preforms	--	22/8/91	
	19	Kangirsuk school visit to site	--	23/8/91	
	20	Structure 18	S	27/8/91	
	21	Structure 18	NE	27/8/91	
	22	Structure 21	E	27/8/91	
	23	Structure 21	NW	27/8/91	
	24	Structure 20	NE	27/8/91	
	25	ATV trail, east terrace of stream	SSE	27/8/91	
	26	Structure 19	SW	27/8/91	
	27	Structure 26	W	27/8/91	
	28	Structure 26	SE	27/8/91	
	29	Structure 11	SE	27/8/91	
	30	Structure 11	SE	27/8/91	
	31	Structure 10	W	27/8/91	
	32	Flake concentration on surface	--	27/8/91	
	33	ATV trail, west-central portion of Area B	NW	27/8/91	
	34	Structure 15	SW	27/8/91	
	35	Structure 16	SW	27/8/91	
	36	Flake concentration on surface	--	27/8/91	
	C 9105-2	2A	General view of Structures 24 and 25	SW	28/8/91
		3A	General view of Structures 24 and 25	NW	28/8/91
		4A	General view of Structure 24	NE	28/8/91
		5A	General view of Structure 25	NE	28/8/91
		6A	General view of Structure 25	W	28/8/91
		7A	Structure 24 hearth	E	28/8/91
		8A	Structure 24 hearth	NW	28/8/91
		9A	Structure 24 hearth	W	28/8/91
		10A	BM 49-50, northeastern periphery of Structure 2	E	28/8/91
11A		BM 49-50, northeastern periphery of Structure 2	N	28/8/91	
12A		Structure 25 hearth area (in front of scale)	NW	28/8/91	
13A		Structure 25 hearth area (in front of scale)	NE	28/8/91	
14A		General view of Structure 24	N	28/8/91	
15A		General view of Structure 25	W	28/8/91	
16A		General view of Structures 24 and 25	NW	28/8/91	
17A		Activity Area 2, AW -AZ 51-52	N	29/8/91	
18A		Activity Area 2, AW -AZ 51-52	E	29/8/91	
19A	Possible hearth, Activity Area 2	N	29/8/91		

Appendix 1. List of Photographs

Roll	Negative	Subject	Orientation	Date
C 9105-2	20A	Activity Area 1, AU 47-48 and AT 48	S	29/8/91
	21A	Activity Area 1, AU 47-48 and AT 48	E	29/8/91
	22A	Field crew	--	29/8/91
	23A	General view of Structure 27	E	30/8/91
	24A	General view of Structure 27	SE	30/8/91
	25A	General view of Structure 27	SW	30/8/91
	26A	General view of Structure 27	W	30/8/91
	27A	General view of Structure 27	NW	30/8/91
	28A	Structure 27, exterior hearth	N	30/8/91
	29A	Structure 27, exterior hearth	S	30/8/91
	30A	Structure 27, exterior hearth	N	30/8/91
	31A	Structure 27, exterior hearth	S	30/8/91
	34A	Western section of Kangirsuk, from airport	SW	30/8/91

Appendix 1. List of Photographs

B. Black and White Prints

Roll	Negative	Subject	Orientation	Date
BW 9105-1	14	General view, southern portion of Area B	W	17/8/91
	15	General view, southern portion of Area B	W	17/8/91
	16	General view, southern portion of Area B	W	17/8/91
	29	South-central portion of Area B	S	17/8/91
	30	South-central portion of Area B	S	17/8/91
	31	South-central portion of Area B	S	17/8/91

Appendix 1. List of Photographs

C. Slides

Roll	Negative	Subject	Orientation	Date	
S 9105-1	13	General view, southern portion of Area B	W	17/8/91	
	14	General view of Area B	W	17/8/91	
	15	General view, southern portion of Area B	W	17/8/91	
	16	South-central portion of Area B	S	17/8/91	
	17	General view, central portion of Area B	S	17/8/91	
	18	General view of Area B	E	17/8/91	
	19	AU 48, <u>in situ</u> preforms	N	22/8/91	
	20	AU 48, <u>in situ</u> preforms	NE	22/8/91	
	21	AU 48, <u>in situ</u> preforms	--	22/8/91	
	22	Kangirsuk school visit to site	--	23/8/91	
	23	Structure 18	S	27/8/91	
	24	Structure 18	NE	27/8/91	
	25	Structure 21	E	27/8/91	
	26	Structure 21	NW	27/8/91	
	27	Structure 20	NE	27/8/91	
	28	ATV trail, east terrace of stream	SSE	27/8/91	
	29	Structure 19	SW	27/8/91	
	30	Structure 26	W	27/8/91	
	31	Structure 26	SE	27/8/91	
	32	Structure 11	SE	27/8/91	
	33	Structure 11	SE	27/8/91	
	34	Structure 10	W	27/8/91	
	35	Flake concentration on surface	--	27/8/91	
	S 9105-2	1	South-central portion of Area B	S	27/8/91
		2	Flake concentration on surface	--	27/8/91
		3	ATV trail, west-central portion of Area B	NW	27/8/91
		4	Structure 15	SW	27/8/91
		5	Structure 16	SW	27/8/91
		6	Flake concentration on surface	--	27/8/91
		7	General view of Structures 24 and 25	SW	28/8/91
		8	General view of Structures 24 and 25	NW	28/8/91
		9	General view of Structure 24	NE	28/8/91
		10	General view of Structure 25	NE	28/8/91
		11	General view of Structure 25	W	28/8/91
		12	Structure 24 hearth	E	28/8/91
13		Structure 24 hearth	NW	28/8/91	
14		Structure 24 hearth	W	28/8/91	
15		BM 49-50, northeastern periphery of Structure 2	E	28/8/91	
16		BM 49-50, northeastern periphery of Structure 2	N	28/8/91	
17		Structure 25 hearth area (in front of scale)	NW	28/8/91	
18		Structure 25 hearth area (in front of scale)	NE	28/8/91	
19		General view of Structure 24	N	28/8/91	
20		General view of Structure 25	W	28/8/91	
21		General view of Structures 24 and 25	NW	28/8/91	
22		General view of Structures 24 and 25	NW	28/8/91	

Appendix 1. List of Photographs

Roll	Negative	Subject	Orientation	Date
S 9105-2	23	Activity Area 2, AW -AZ 51-52	N	29/8/91
	24	Activity Area 2, AW -AZ 51-52	E	29/8/91
	25	Possible hearth, Activity Area 2	N	29/8/91
	26	Activity Area 1, AU 47-48 and AT 48	S	29/8/91
	27	Activity Area 1, AU 47-48 and AT 48	E	29/8/91
	28	General view of Structure 27	E	30/8/91
	29	General view of Structure 27	SE	30/8/91
	30	General view of Structure 27	SW	30/8/91
	31	General view of Structure 27	W	30/8/91
	32	General view of Structure 27	NW	30/8/91
	33	Structure 27, exterior hearth	N	30/8/91
	34	Structure 27, exterior hearth	S	30/8/91
	35	Structure 27, exterior hearth	N	30/8/91
	36	Structure 27, exterior hearth	S	30/8/91

Appendix 2. Catalogue of Lithic Specimens.

A. Tools

Catalogue	Item	Excavation Unit	Coordinates	Level	Raw Material
42	point	BT 45	N 15 E 46	I	Ramah quartzite
43	point	AY 52	N 42 E 35	I	Ramah quartzite
44	point	BH 55	N 30 E 65	I	black quartzite
45	point	DK 100	N 14 E 48	surface	chert
46	knife	BR 44	N 68 E 20	II	Ramah quartzite
47	knife	BS 46	N 45 E 33	II	slate
48	knife	BP 48	N 15 E 8	I	slate
49	knife	BM 49	SW quad.	I	slate
50	knife	BQ 49	N 92 E 5	I	slate
51	knife	BM 50	N 93 E 20	II	slate
52	knife	BF 54	N 68 E 14	I	Ramah quartzite
53	knife	BG 56	N 12 E 76	I	slate
54	knife	DE 90	N 7 E 52	surface	slate
55	knife	DG 96	N 90 E 91	surface	slate
56	knife	DG 96	N 90 E 91	surface	slate
57	biface fragment	BR 46	N 60 E 92	I	slate
58	biface fragment	BM 49	Concentration 2	II	Ramah quartzite
59	side scraper	CQ 58	N 49 E 90	surface	Ramah quartzite
60	preform	AU 47	N 60 E 62	II	slate
61	preform	AT 48	N 28 E 86	I	slate
62	rough out	BQ 47	N 5 E 20	I	slate
63	preform	AU 48	N 62 E 21	II	slate
64	preform	AU 48	N 63 E 16	II	slate
65	preform	AU 48	N 69 E 29	II	slate
66	retouched flake	BS 45	N 11 E 64	II	slate
67	retouched flake	BS 46	N 87 E 57	I	slate
68	retouched flake	BP 49	N 33 E 64	I	slate
69	retouched flake	BN 49	N 93 E 21	I	slate
70	retouched flake	BN 49	N 68 E 54	I	slate
71	retouched flake	BM 50	N 56 E 57	II	slate
72	retouched flake	BM 50	N 77 E 73	I	slate
73	retouched flake	CG 50	SW quad.	I	slate
74	retouched flake	AZ 51	N 36 E 94	I	slate
75	used flake	BS 43	N 52 E 94	II	slate
76	used flake	BS 45	N 72 E 57	I	slate
77	used flake	BN 50	NE quad.	I	slate
78	used flake	BN 50	SE quad.	II	slate
79	used flake	BP 50	SW quad.	I	slate
80	used flake	AZ 51	N 20 E 84	I	slate
81	used flake	AZ 51	N 23 E 93	I	slate
82	used flake	AZ 51	N 2 E 84	I	slate
83	used flake	AZ 51	N 39 E 58	I	slate
84	used flake	BG 55	N 66 E 97	I	slate
85	used flake	BH 56	N 33 E 47	I	slate
86	core	BQ 43	N 85 E 20	I	milky quartz
87	core	BR 46	N 37 E 30	I	milky quartz
88	core	AU 47	N 52 E 42	II	slate
89	core	BM 48	N 80 E 25	II	milky quartz
90	core	BM 50	N 82 E 70	I	slate
91	core	AZ 52	N 12 E 29	I	slate
368	retouched flake	BN 48	NW quad.	I	slate

Appendix 2. Catalogue of Lithic Specimens.

B. Waste Flakes

Catalogue No.	Excavation Unit	Quadrant	Raw Material	Level	Number of Flakes
92	BR 43	NW quad.	Ramah quartzite	I	1
93	BS 43	NE quad.	slate	II	1
94	BT 43	NW quad.	slate	II	2
95	BU 43	NW quad.	slate	surface	3
96	BU 43	NW quad.	slate	surface	6
97	BU 43	NW quad.	Ramah quartzite	surface	2
98	BR 44	NE quad.	slate	II	2
99	BR 44	SE quad.	slate	II	1
100	BR 44	SW quad.	slate	II	3
101	BS 44	NE quad.	slate	I	7
102	BS 44	NE quad.	Ramah quartzite	I	5
103	BS 44	SE quad.	slate	I	2
104	BS 44	SE quad.	quartz hyalin	I	1
105	BS 44	SW quad.	slate	I	1
106	BS 44	SW quad.	Ramah quartzite	I	3
107	BS 44	NW quad.	slate	I	4
108	BS 44	NW quad.	Ramah quartzite	I	1
109	BT 44	NW quad.	slate	I	1
110	BT 44	NW quad.	Ramah quartzite	I	3
111	BT 44	NW quad.	slate	II	1
112	BU 44	SW quad.	slate	surface	22
113	BU 44	SW quad.	Ramah quartzite	surface	10
114	BU 44	NW quad.	slate	surface	18
115	BU 44	NW quad.	Ramah quartzite	surface	4
116	BU 44	NW quad.	slate	II	7
117	BQ 45	SW quad.	slate	I	1
118	BQ 45	NW quad.	slate	I	5
119	BR 45	NW quad.	black quartzite	II	2
120	BS 45	NE quad.	slate	surface	7
121	BS 45	NE quad.	Ramah quartzite	surface	1
122	BS 45	NE quad.	slate	I	1
123	BS 45	NE quad.	Ramah quartzite	I	10
124	BS 45	SE quad.	Ramah quartzite	I	2
125	BS 45	SW quad.	slate	I	7
126	BS 45	SW quad.	Ramah quartzite	I	1
127	BS 45	NW quad.	slate	I	2
128	BS 45	NW quad.	Ramah quartzite	I	4
129	BS 45	NE quad.	slate	II	6
130	BS 45	NE quad.	Ramah quartzite	II	10
131	BS 45	SE quad.	Ramah quartzite	II	1
132	BS 45	SW quad.	slate	II	4
133	BS 45	NW quad.	slate	II	1
134	BT 45	NE quad.	slate	surface	5
135	BT 45	NE quad.	Ramah quartzite	surface	4
136	BT 45	SE quad.	slate	surface	5
137	BT 45	SW quad.	slate	surface	2
138	BT 45	NW quad.	slate	surface	3
139	BT 45	NE quad.	slate	I	12
140	BT 45	NE quad.	hyalin	I	1
141	BT 45	SE quad.	slate	I	11

Appendix 2. Catalogue of Lithic Specimens.

Catalogue No.	Excavation Unit	Quadrant	Raw Material	Level	Number of Flakes
142	BT 45	SW quad.	slate	I	26
143	BT 45	NW quad.	Ramah quartzite	I	2
144	BT 45	NW quad.	slate	I	52
145	BT 45	NE quad.	slate	II	3
146	BT 45	SE quad.	slate	II	2
147	BT 45	SW quad.	slate	II	12
148	BT 45	SW quad.	slate	II	14
149	BU 45	SE quad.	slate	II	7
150	BR 46	NE quad.	slate	I	1
151	BR 46	NW quad.	slate	I	1
152	BR 46	NW quad.	Ramah quartzite	I	1
153	BS 46	NE quad.	Ramah quartzite	I	9
154	BS 46	SE quad.	Ramah quartzite	I	2
155	BS 46	SW quad.	Ramah quartzite	I	2
156	BS 46	SW quad.	slate	I	1
157	BS 46	NE quad.	Ramah quartzite	II	1
158	BS 46	SE quad.	Ramah quartzite	II	2
159	BS 46	SW quad.	Ramah quartzite	II	4
160	BS 46	SW quad.	slate	II	1
161	BS 46	NW quad.	slate	II	1
162	BS 46	NW quad.	Ramah quartzite	II	1
163	BT 46	NE quad.	slate	surface	1
164	BT 46	NE quad.	Ramah quartzite	surface	2
165	BT 46	NW quad.	slate	surface	2
166	BT 46	NW quad.	Ramah quartzite	surface	1
167	BT 46	NE quad.	slate	II	2
168	BT 46	SE quad.	slate	II	9
169	BT 46	SW quad.	slate	II	11
170	BT 46	NW quad.	slate	II	2
171	BT 46	NW quad.	Ramah quartzite	II	1
172	BU 46	SE quad.	slate	II	4
173	BU 46	SW quad.	slate	II	1
174	AU 47	SE quad.	slate	I	1
175	AU 47	NE quad.	slate	II	3
176	AU 47	SE quad.	slate	II	2
177	AU 47	NW quad.	slate	II	1
178	BN 47	NE quad.	slate	I	16
179	BN 47	SE quad.	slate	I	1
180	BN 47	NW quad.	slate	I	5
181	BP 47	NE quad.	slate	I	3
182	BP 47	NE quad.	milky quartz	I	1
183	BP 47	SE quad.	slate	I	2
184	BP 47	NW quad.	slate	I	8
185	BQ 47	NW quad.	slate	I	1
186	AT 48	SW quad.	slate	II	2
187	AU 48	SE quad.	slate	II	16
188	BM 48	NE quad.	slate	I	5
189	BM 48	SE quad.	slate	I	3
190	BM 48	SW quad.	slate	I	5
191	BM 48	NW quad.	slate	I	2
192	BM 48	SW quad.	slate	II	1
193	BM 48	NW quad.	slate	II	4

Appendix 2. Catalogue of Lithic Specimens.

Catalogue No.	Excavation Unit	Quadrant	Raw Material	Level	Number of Flakes
194	BN 48	NE quad.	slate	I	9
195	BN 48	SE quad.	slate	I	11
196	BN 48	SW quad.	slate	I	9
197	BN 48	NW quad.	slate	I	15
198	BN 48	SE quad.	slate	I	113
199	BP 48	NE quad.	slate	I	7
200	BP 48	NE quad.	Ramah quartzite	I	1
201	BP 48	SW quad.	slate	I	3
202	BP 48	SW quad.	Ramah quartzite	I	1
203	BP 48	NW quad.	slate	I	3
204	BP 48	NW quad.	Ramah quartzite	I	1
205	BQ 48	NE quad.	slate	I	4
206	BQ 48	NE quad.	Ramah quartzite	I	1
207	BQ 48	SW quad.	slate	I	1
208	BM 49	NE quad.	slate	I	29
209	BM 49	SW quad.	slate	I	32
210	BM 49	SW quad.	Ramah quartzite	I	1
211	BM 49	NE quad.	slate	II	10
212	BM 49	SE quad.	slate	II	5
213	BM 49	SW quad.	slate	II	7
214	BM 49	NE quad.	slate	II	24
215	BM 49	NW quad.	slate	II	157
216	BM 49	NW quad.	Ramah quartzite	II	1
217	BN 49	NE quad.	slate	I	50
218	BN 49	SE quad.	slate	I	69
219	BN 49	SE quad.	Ramah quartzite	I	3
220	BN 49	SW quad.	slate	I	27
221	BN 49	NW quad.	slate	I	43
222	BN 49	SE quad.	slate	I	35
223	BN 49	NE quad.	slate	I	57
224	BN 49	NE quad.	slate	I	43
225	BN 49	NE quad.	slate	I	15
226	BN 49	NE quad.	slate	I	10
227	BN 49	NE quad.	Ramah quartzite	I	1
228	BP 49	SW quad.	slate	I	3
229	BP 49	NW quad.	slate	I	4
230	BQ 49	NE quad.	slate	I	3
231	BQ 49	SW quad.	slate	I	3
232	BQ 49	NW quad.	slate	I	4
233	BQ 49	NW quad.	Ramah quartzite	I	1
234	BR 49	NE quad.	slate	I	2
235	BM 50	NE quad.	slate	I	5
236	BM 50	SE quad.	slate	I	9
237	BM 50	SW quad.	slate	I	9
238	BM 50	NW quad.	slate	I	7
239	BM 50	SE quad.	slate	II	16
240	BM 50	SE quad.	Ramah quartzite	II	1
241	BM 50	SW quad.	slate	II	8
242	BM 50	SW quad.	slate	II	9
243	BN 50	NE quad.	slate	I	4
244	BN 50	SE quad.	slate	I	14
245	BN 50	SW quad.	slate	I	6

Appendix 2. Catalogue of Lithic Specimens.

Catalogue No.	Excavation Unit	Quadrant	Raw Material	Level	Number of Flakes
246	BN 50	SW quad.	milky quartz	I	1
247	BN 50	NW quad.	slate	I	2
248	BN 50	SE quad.	slate	II	19
249	BP 50	NE quad.	slate	I	2
250	BP 50	SE quad.	slate	I	3
251	BP 50	SW quad.	slate	I	3
252	BP 50	NW quad.	slate	I	4
253	CG 50	NE quad.	slate	surface	12
254	CG 50	SE quad.	slate	surface	13
255	CG 50	SW quad.	slate	surface	21
256	CG 50	NW quad.	slate	surface	14
257	CG 50	NE quad.	slate	I	12
258	CG 50	SE quad.	slate	I	12
259	CG 50	SW quad.	slate	I	21
260	CG 50	NW quad.	slate	I	6
261	CH 50	NE quad.	slate	surface	3
262	CH 50	SE quad.	slate	surface	6
263	CH 50	NW quad.	slate	surface	10
264	CH 50	SE quad.	slate	I	3
265	CH 50	SW quad.	slate	I	1
266	CH 50	NW quad.	slate	I	5
267	AY 51	NE quad.	slate	I	4
268	AY 51	SE quad.	slate	I	5
269	AY 51	SW quad.	slate	I	7
270	AY 51	NW quad.	slate	I	32
271	AZ 51	NE quad.	slate	I	12
272	AZ 51	SE quad.	slate	I	18
273	AZ 51	SW quad.	slate	I	49
274	AZ 51	SW quad.	Ramah quartzite	I	1
275	AZ 51	NW quad.	slate	I	50
276	AZ 51	NW quad.	slate	I	20
277	CG 51	SW quad.	slate	surface	25
278	CG 51	SW quad.	Ramah quartzite	surface	1
279	CG 51	NW quad.	slate	surface	13
280	CG 51	NE quad.	slate	I	9
281	CG 51	SE quad.	slate	I	16
282	CG 51	SW quad.	slate	I	16
283	CG 51	NW quad.	slate	I	35
284	CG 51	NW quad.	milky quartz	I	1
285	CH 51	NE quad.	slate	surface	20
286	CH 51	NE quad.	slate	surface	13
287	CH 51	NE quad.	slate	surface	18
288	CH 51	SE quad.	slate	surface	11
289	CH 51	NW quad.	slate	surface	9
290	CH 51	NW quad.	Ramah quartzite	surface	2
291	CH 51	NE quad.	slate	I	38
292	CH 51	NE quad.	slate	I	13
293	CH 51	SE quad.	slate	I	4
294	CH 51	NW quad.	slate	I	102
295	AY 52	NE quad.	slate	I	8
296	AY 52	SE quad.	slate	I	3
297	AY 52	SW quad.	slate	I	12

Appendix 2. Catalogue of Lithic Specimens.

Catalogue No.	Excavation Unit	Quadrant	Raw Material	Level	Number of Flakes
298	AY 52	NW quad.	slate	I	25
299	AY 52	NW quad.	Ramah quartzite	I	1
300	AZ 52	NE quad.	slate	I	24
301	AZ 52	SE quad.	slate	I	35
302	AZ 52	SE quad.	slate	I	36
303	AZ 52	SW quad.	slate	I	62
304	AZ 52	NW quad.	slate	I	33
305	AZ 52	NW quad.	Ramah quartzite	I	3
306	BE 54	SW quad.	slate	I	3
307	BE 54	NW quad.	slate	I	1
308	BF 54	NW quad.	slate	I	2
309	BG 54	NE quad.	slate	I	3
310	BG 54	SW quad.	slate	I	5
311	BG 54	NW quad.	slate	I	11
312	BH 54	NE quad.	slate	I	17
313	BH 54	SE quad.	slate	I	10
314	BH 54	SW quad.	slate	I	4
315	BH 54	NW quad.	slate	I	23
316	BH 54	NW quad.	Ramah quartzite	I	1
317	BH 54	NE quad.	slate	I	49
318	BH 54	NW quad.	slate	I	6
319	BF 55	NE quad.	slate	I	3
320	BF 55	SW quad.	slate	I	1
321	BF 55	SW quad.	Ramah quartzite	I	1
322	BF 55	NW quad.	slate	I	5
323	BG 55	NE quad.	slate	I	5
324	BG 55	SE quad.	slate	I	3
325	BG 55	SW quad.	slate	I	23
326	BG 55	NW quad.	slate	I	12
327	BH 55	NE quad.	slate	I	66
328	BH 55	SE quad.	slate	I	202
329	BH 55	SW quad.	slate	I	25
330	BH 55	NW quad.	slate	I	25
331	BE 56	NE quad.	slate	I	3
332	BE 56	SW quad.	slate	II	1
333	BE 56	NW quad.	slate	II	3
334	BF 56	NE quad.	slate	I	2
335	BF 56	NW quad.	slate	I	1
336	BG 56	NE quad.	slate	I	11
337	BG 56	NE quad.	Ramah quartzite	I	1
338	BG 56	SE quad.	slate	I	14
339	BG 56	SW quad.	slate	I	11
340	BG 56	NW quad.	slate	I	16
341	BG 56	NW quad.	Ramah quartzite	I	1
342	BH 56	NE quad.	slate	I	1
343	BH 56	SE quad.	slate	I	18
344	BH 56	SW quad.	slate	I	14
345	BH 56	NW quad.	slate	I	11
346	CB 60	NE quad.	Ramah quartzite	surface	1
347	CB 60	NW quad.	slate	surface	33
348	CB 60	NE quad.	slate	I	22
349	CB 60	SE quad.	slate	I	4

Appendix 2. Catalogue of Lithic Specimens.

Catalogue No.	Excavation Unit	Quadrant	Raw Material	Level	Number of Flakes
350	CB 60	SW quad.	slate	I	1
351	CB 60	NW quad.	slate	I	13
352	CC 60	NE quad.	slate	surface	4
353	CC 60	NE quad.	slate	I	5
354	CC 60	SE quad.	slate	I	4
355	CC 60	SE quad.	milky quartz	I	1
356	CC 60	NW quad.	slate	I	1
357	CB 61	NE quad.	slate	surface	5
358	CB 61	SW quad.	slate	surface	90
359	CB 61	NW quad.	slate	surface	9
360	CB 61	NE quad.	slate	I	18
361	CB 61	SE quad.	slate	I	19
362	CB 61	SW quad.	slate	I	121
363	CB 61	NW quad.	slate	I	14
364	CB 61	SW quad.	slate	I	70
365	CC 61	SE quad.	slate	surface	16
366	CC 61	NW quad.	slate	surface	3
367	CC 61	SE quad.	slate	I	45