

**ARCHAEOLOGICAL MONITORING
OF THE STEAM PLANT
REDEVELOPMENT**

Submitted to

**MARWEST MANAGEMENT CANADA LTD.
and
MANITOBA TELEVISION NETWORK**

**QUATERNARY
CONSULTANTS
LIMITED**

January 1999

EXECUTIVE SUMMARY

The redevelopment of the Canadian National Power Plant, commonly known as the Steam Plant, into a new facility for Manitoba Television Network (MTV) at The Forks entailed the construction of new annexes on the north wall of the building plus installation of water and sewer services. The degree of impact was minimal, consisting of the drilling of holes for pouring piles to support the new additions.

The auger drilling was monitored and archaeological artifacts were recovered in only one hole. These could not be assigned to any specific cultural occupation. The service installations were also monitored. All excavations relating to this component were in areas which had already experienced prior impact.

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1.0 INTRODUCTION

The redevelopment of the Steam Plant, at The Forks, for the new facilities of Manitoba Television Network (MTV) had minor impact upon undisturbed sediments on the north side of the building where two small extensions of the structure were to be constructed. Additional impact was potential through the connection of services (water and sewer) from the mains on Pioneer Boulevard.

Quaternary Consultants Ltd. was contacted by The Forks North Portage Partnership to provide archaeological monitoring of the subsurface construction activities. Previous development activities during the Stage I construction program had resulted in the recovery of heritage resources along Pioneer Boulevard (Kroker and Goundry 1990:29-36, 42-44). Because of the potential for impact upon westward extensions of the recorded archaeological loci, it was deemed necessary that this project include an archaeological monitoring component.

Quaternary Consultants worked in concert with Marwest Construction Ltd. who had been retained to undertake the redevelopment of the Steam Plant. All construction activity was monitored under the terms of Heritage Permit A79-98 (Appendix A), issued by Historical Resources Branch, Manitoba Heritage, Culture and Citizenship.

1.1 Location and Scope of the Project

As depicted on Figure 1, the project was located on the north and east sides of the Steam Plant which is situated on the northwest corner of the intersection of Pioneer Boulevard and Forks Market Road. The annex additions on the north side of the building required the augering of holes for the pouring of concrete piles. These holes were drilled by Subterranean (Manitoba) Ltd. during the week of November 16, 1998. One row of holes was immediately adjacent to the foundation of the Steam Plant while the second row was 4.9 metres north of the structure for the garage annex and 2.8 metres north for the northeast annex.

The services connections were made on the east side of the building, providing linkages to the previously installed mains which lie under Pioneer Boulevard. The installation was done by excavating vertical shafts at the face of the east foundation wall and horizontal boring to the sewer line in the middle of Pioneer Boulevard and the water main on the east edge of Pioneer Boulevard.

1.2 Study Team

The archaeological resources management program, i.e., the monitoring of construction excavations, was undertaken by Sid Kroker (Senior Archaeologist). No mitigative excavations requiring additional staff occurred. Laboratory operations, resulting from artifact recovery, were supervised by Pam Goundry (Research Archaeologist). Computer cataloguing was completed by Pam Goundry. Documentation and analysis has been undertaken by Sid Kroker and Pam Goundry.

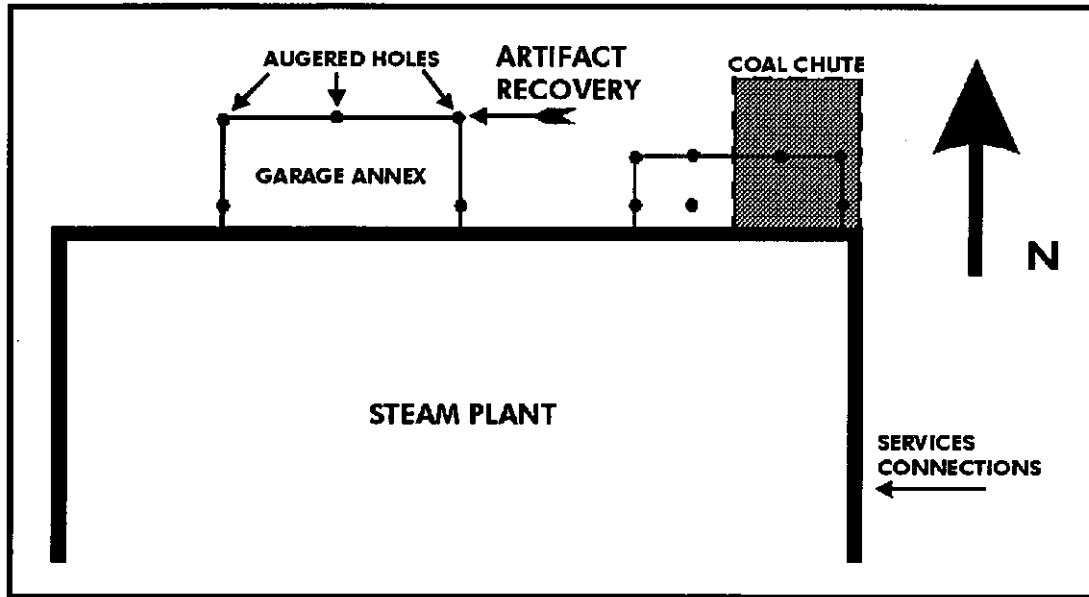


Figure 1: Location of Project Impacts

1.3 Excavation Monitoring Methodology

The drilling for the piling holes was conducted by a truck-mounted auger with a 5' long bit which had a 16" diameter. These holes were drilled to depths between 30 and 35 feet. The driller would auger downward until the bit length was filled. When the auger was brought to the surface the soil on the bit was examined by the archaeologist who recorded changes in soil stratigraphy. The archaeologist recorded depths of different soil layers and watched for indicators of cultural occupation layers, i.e., charcoal, faunal remains, diagnostic artifacts. Due to the rotary action of the auger and the very sticky nature of the sediments, thin soil layers (less than 1 cm thick) were almost indiscernible due to smearing. Thus, micro-stratigraphy showing very thin layers of flood deposited sediments and brief soil formation periods cannot always be observed during an augering procedure.

When the augering extended into undisturbed original sediments below the 1890 soil horizon, the monitoring archaeologist watched for buried soil horizons and changes in soil texture which could indicate possible former ground surfaces. The soil profiles were recorded and all instances which suggested potential archaeological horizons were carefully examined. The indicators watched for were charcoal layers, ash lenses, and/or reddish stained soil. The colour change is usually indicative of oxidation of the iron particles in Red River silt by heat—the more intense the heat, the redder the soil. These features can indicate either a natural event such as a brush or prairie fire or a cultural event such as a campfire. The presence of food remains, particularly mammal or fish bones, resting upon a buried soil would be a positive indicator of an archaeological occupation horizon. Other positive indicators would be the presence of lithic tools or flakes resulting from tool manufacture and

fragments of earthenware containers. Only one augered hole provided any evidence of a potential cultural occupation at this site.

The excavation for the vertical shafts for watermain and sewer installations was undertaken with backhoes and the soil trucked away from the site. Archaeological monitoring consisted of visual observation of the excavation. All vertical shafts were dug in locations which had been previously excavated and infilled with non-original material, such as gravel and cinder.

1.4 Archaeological Site Designation

Each artifact is assigned a Borden designation as part of its catalogue number. The Borden designation, consisting of a four-letter prefix and a numerical suffix, is a Canada-wide system of identifying archaeological sites based upon latitude and longitude (Borden 1954). The four letter identifier, DILg, designates a geographical block between 49° 50' and 50° 00' North latitude and 97° 00' and 97° 10' West longitude. Within each block, archaeological sites are assigned sequential numbers upon discovery. This site has been designated as DILg-33. As this location has had numerous archaeological projects over the last decade (Kroker 1989; Kroker and Goundry 1990, 1993; Quaternary 1990, 1992, 1993, 1994a, 1994b, 1995, 1996a, 1996b), the site designation has been expanded to include a sequential year/project identifier. The identifier, for the Steam Plant redevelopment, is 98B, denoting that this was the second project at The Forks during 1998.

1.5 Laboratory Procedures

Only two artifacts were recovered during this project (Section 3.0). These were brought to Quaternary laboratory facilities where they were washed and identified by the lab personnel. Identification was carried to the limit obtainable by available reference works—Gilbert (1973), Olsen (1960, 1964), and Schmid (1972)—and staff expertise.

Each artifact received a catalogue number consisting of the Borden designation for the site and a sequential number for permanent identification. All pertinent data associated with the artifact was entered into the computer cataloguing system which is based upon the Canadian Heritage Inventory Network (CHIN) system (Manitoba Museum of Man and Nature 1986; Kroker and Goundry 1993:Appendix B). The computer cataloguing program is derived from **DBASE3®** and generates individual artifact catalogue cards.

The processed artifacts were prepared for storage by inserting the specimens and the catalogue card into standard plastic storage bags, then stapling the bags closed. At the end of the project, the recovered artifacts (Appendix B) will be delivered to the Manitoba Museum of Man and Nature which is the repository designated by The Forks North Portage Partnership for artifacts recovered at The Forks.

2.0 STRATIGRAPHY AND OBSERVATIONS

The stratigraphic profiles recorded during the auger drilling indicated that the original construction of the Steam Plant had a space between the foundation wall and original soil which was filled with secondary deposits to a depth of at least 3 metres. The north row of auger holes passed through a surface layer of cinder ranging in depths between 80 and 100 centimetres. Layers of silty clay, with slight variations in colour, occurred to depths approaching 4 metres after which the sediments were a dark greyish brown clay.

Cultural material was recovered from only one hole. This was at the northeast corner of the garage annex, 18 metres west of the east wall (Figure 1). Two fragments of bison bone were recovered from a depth of approximately 275 centimetres. No charcoal, indicating a buried soil horizon or dense campsite occupation level, was present with the bone. Buried charcoal levels were encountered at a depth of 390 cm at the centre of the north wall of the garage annex. No faunal resources were present in this charcoal layer and it would appear that this resulted from a natural burn rather than a cultural occupation.

3.0 RECOVERED ARTIFACTS

The two faunal recoveries may derive from cultural activities, i.e., food remains. Both specimens were recovered from Hole 5 at a depth of 275.0 cm.

DILg-33:98B/1 is a small portion of the shaft of an ulna from a bison (*Bison bison*). The specimen weighs 30.4 grams and has spiral fracturing. In addition, it is somewhat eroded and appears to have been from an animal with a pathological anomaly such as arthritis. DILg-33:98B/2 is also a portion of an ulna, the proximal end and part of the shaft, from a bison. This specimen weighs 188.2 grams and fits together with DILg-33:98B/1. Therefore, it is the same adult animal.

The bones have a slight degree of hematite staining resulting from ground water movement carrying dissolved iron past the bone. Some degree of cortical exfoliation has occurred suggesting a period of exposure on the surface prior to burial by sediments from a flood. No cut marks are present around the olecranon where the muscles are usually separated from the bone during the butchering process. This suggests that the artifacts may be the result of natural deposition rather than cultural deposition. However, if the animal died through natural causes, such as old age, the carcass is often scavenged by carnivores, resulting in gnawing or tooth marks on the bone. As neither butchering marks or carnivore marks are present, it is not possible to determine whether the bison bones are the result of human hunting activity or natural deposition.

4.0 DISCUSSION

The Canadian National Power Plant, also called the Central Heating Plant or the Steam Plant (Figure 2), was built in 1947-48 to provide steam heat to the rail facilities and the Hotel Fort Garry as well as at the Manitoba Club. According to the Winnipeg Historical Buildings Committee (1987:27-28), the structure was designed by Alfred S. Batho, an engineer with the Canadian national Railway. Construction of this two story building with the attached 36.6 metre concrete chimney was the last major building to be erected in the East Yard which had been the site of railroad-related development beginning in 1888. This building has a full basement which rests on a pile foundation and, while it is a functional industrial building, it has traces of the *Art Moderne* architectural style represented by ornamental concrete bands and coping.

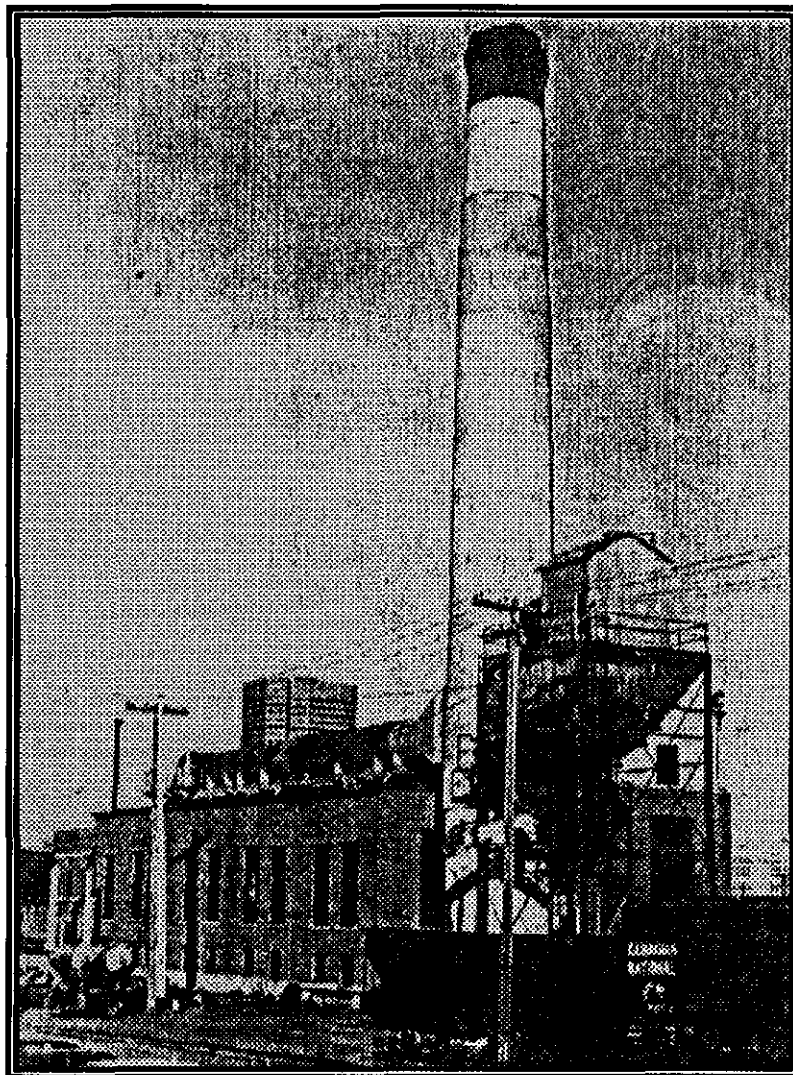


Figure 2: Steam Plant (viewed from the southeast corner)(Winnipeg Historical Buildings Committee)

The original coal chute was located at the northeast corner of the building on the outside of the foundation (Figure 1). This portion of the facility had been demolished and infilled prior to 1988 when the East Yard was decommissioned and turned over to The Forks Renewal Corporation. The concrete floor and rubble fill of the coal chute precluded the initial augering of piling holes. The area was excavated by backhoe. The base of the coal chute structure had a portion of the iron frame of the coal elevator conveyer belt system bolted to the concrete floor. The concrete and mechanical parts were removed by jackhammering, the hole filled with clay, and then the piling holes augered.

With regard to extensions of previously recorded archaeological occupation levels (Kroker and Goundry 1990), the limited degree of impact does not permit correlation of the buried soil zones or the bison bone deposits with any of the previously recorded cultural horizons. The inability to discern micro-stratigraphy due to auger smearing of very thin layers, plus the relatively small area of impact, precludes correlation of stratigraphy between adjacent auger holes let alone that of the 1989 excavations along Pioneer Boulevard for the installation of subsurface services (Kroker and Goundry 1990).

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APPENDIX A
HERITAGE PERMIT



Heritage Permit No. A79-98

Pursuant to Section/Subsection 53 of *The Heritage Resources Act*:

Name: Quaternary Consultants Ltd.
Address: 130 Fort Street
Winnipeg MB R3C 1C7

ATTENTION: Mr. Sid Kroker

(hereinafter referred to as "the Permittee"),

is hereby granted permission to:

monitor and, if necessary, mitigate the construction associated with MTV refurbishment of the steam plant at The Forks, DILg-33;

during the period:

November 3, 1998 to March 31, 1999

This permit is issued subject to the following conditions:

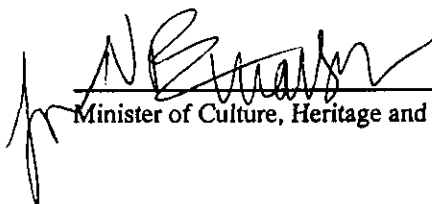
- (1) That the information provided in the application for this permit dated the 30th day of October 1998, is true in substance and in fact;
- (2) That the permittee shall comply with all the provisions of *The Heritage Resources Act* and any regulations or orders thereunder; **Please note attachment re custody and ownership of heritage objects**
- (3) That the Permittee shall provide to the Minister a written report or reports with respect to the Permittee's activities pursuant to this permit, the form and content of which shall be satisfactory to the Minister and which shall be provided on the following dates:
March 31, 1999
- (4) That this permit is not transferable;
- (5) This permit may be revoked by the Minister where, in the opinion of the Minister, there has been a breach of any of the terms or conditions herein or of any provision of *The Heritage Resources Act* or any regulations thereunder;



- a. All heritage objects are to be deposited with the Manitoba Museum by March 31, 1999, for permanent curation and storage, unless appropriate loan requirements are arranged with the Curatory of Archaeology prior to that date;
- b. A complete set of archaeological field records, catalogue sheets, laboratory analysis records, photographs, reports, etc. are to be deposited with the Manitoba Museum of Man and Nature upon completion of the archaeological research, or sooner if required; and any subsequent revisions or additions to these records are to be filed as soon as possible thereafter;
- c. Neither the Government of Manitoba nor the party issuing this permit be liable for any damages resulting from any activities carried out pursuant to this permit, and the Permittee specifically agrees, in consideration for receiving this permit, to indemnify and hold harmless the Minister and the Government of Manitoba, the Minister and any employees and officials of the Government, against any and all action, liens, demands, loss, liability, cost, damage and expense including, without limitation, reasonable legal fees, which the Government, Minister or any employee or official of the Government may suffer or incur by reason of any of the activities pursuant to or related to this permit.

D1Lg-33/98B

Dated at the City of Winnipeg, in Manitoba, this 6th day of November 1998.



Minister of Culture, Heritage and Citizenship

APPENDIX B
CATALOGUE OF RECOVERED ARTIFACTS

SPECIMEN CATALOGUE RECORD

SITE: DLLG-33:98B STEAM PLANT

AREA: RED RIVER

CLIENT: MARWEST DEVELOPMENT

<u>Cat. #</u>	<u>Qty</u>	<u>Object/Name</u>	<u>Material/Cultural Phase</u>	<u>Location/Unit</u>	<u>Coll. Date</u>
1	1	Ulna <i>Bison bison</i>	Bone Pre-Contact	Steam Plant Hole 5	19981118
2	1	Ulna <i>Bison bison</i>	Bone Pre-Contact	Steam Plant Hole 5	19981118
TOTAL	2				