

Archival Archaeology of the sc̓alex^w Village site
DhRt-2 (Musqueam East)

by

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Abstract

This paper is an archaeological analysis of archival data relating to the séalex^w village site, DhRt-2 (Musqueam East), located on the Musqueam IR 2 Reserve in Vancouver. DhRt-2 is the type-site for the Stselax Phase (approximately 1200 years ago to 1808 AD) in Charles Borden's Fraser Delta Sequence. Despite being the subject of various research projects since the 1950s, with major excavations carried out from 1950-1961, a comprehensive site report was never written. Instead, Borden's (1950; 1971) publications contained brief summaries of artifact types related to the Stselax Phase. The aim of this thesis is to collate and analyze the archival data from these excavations, focusing on stratigraphy and architectural features. This is supplemented by data from more recent research projects to provide a clearer understanding of settlement patterns and the site's occupational history through time. Most importantly, the intention is to provide a comprehensive report of the early excavations that will be of value to archaeological researchers and to the descendant Musqueam community. This paper includes a history of the archaeological research at the site, as well as a presentation of the existing archival materials and analysis of the archaeological data. Three distinct occupational zones (related groups of layers and associated features) are identified and discussed: a wetland/river estuary, shell midden/terrace, and a village zone. Variations in the sequence of zones between excavation areas (Trenches 1, 2, and 3; Charles House; Units A-D) are considered as they relate to village development through time. Together, these analyses and data provide the first comprehensive view of this important archaeological site since excavations began in 1950.

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Chapter 1 Introduction

DhRt-2, located on the Musqueam Indian Reserve 2 reserve in Vancouver, comprises the archaeological remains of a village called *sćəlex*^w by the descendant Musqueam community. This site provides a view of uninterrupted occupation from the late pre-contact period (approximately 1200 BP/AD 1250) to the present day. Charles E. Borden, first excavated DhRt-2, along with a number of other sites on the reserve, from the 1950s to the 1970s. From this work he developed the Fraser Delta Sequence, a series of temporally based culture phases for the Gulf of Georgia region (Borden 1951; 1970; 1971). This included the most recent phase, *Stsleax*, based on over a decade of work on DhRt-2, its representative type-site.

Although DhRt-2 is a type-site and has been the subject of archaeological research projects since the 1950s, including a 4th year UBC undergraduate course with field research (Anth 420-taught by Borden from 1950-1961), a comprehensive site report was never written for these early excavations, and substantial amounts of data remained unanalyzed. Musqueam has since graciously welcomed the Musqueam-UBC Archaeological Field School Project, beginning in 2007, despite not receiving results from these early excavations. As such, the purpose of this thesis is to provide a report on DhRt-2 based on the fifty to sixty year old archival records stored at the Laboratory of Archaeology (LOA) at the University of British Columbia (UBC). My aim is to present and interpret site changes through time by describing the stratigraphy—the sequence and patterning of cultural and geological layers at the site—including the remains of architectural and other features associated with these. This data were gathered by Borden's field school students and are augmented by the students' analyses and reports.

The archival data are supplemented by results from more recent projects including the Musqueam-UBC Field School (Martindale 2008-2010; forthcoming), Culture Resource Management (CRM) reports (Ham and Yip 2008); volunteer research (Angelbeck and Poulson 2002) and another UBC thesis (Poulson 2005).

DhRt-2 is at least 250 m long by 100 m wide, although the precise boundaries are unknown. It has been excavated in different areas at various times as follows: Trenches (TR) 1, 2, and 3 (1950-1955); Charles House (CH) (1956-1961); and Units A-D (2009-2010). This project focuses mainly on the CH data, as it is the most comprehensive. These data have been divided into three occupational zones (related groups of strata) from the lowest to the uppermost levels: wetland/river estuary, shell midden terrace, and village. This classification captures stratigraphic divisions and occupational trends in the broadest sense, as each zone contains multiple occupational surfaces. The uppermost CH village zone has been sub-divided by distinct feature clusters, resulting in five possible sub-zones. In the TR areas the village zone occurs below the midden zone. I hypothesize that this relates to the gradual relocation of the village over time.

This thesis has four chapters; Chapter 1 provides background and a history of research; Chapter 2 describes the methods of processing and analysing the archival data; Chapter 3 is a descriptive presentation of the results in three parts (stratigraphy, features, and artifacts and fauna); Chapter 4 analyzes the results with the aim of determining possible occupational zones of the historical sequence. Additional data pertaining to this thesis can be found within a supplementary document ([Hynes 2011](#)).

1.1 Theory

This project is motivated by post-colonial theory, a perspective that consists of critiques of and reactions to colonialism, both in the past and as an “ongoing process of negotiation and struggle” (Pels 2008). This is particularly relevant to archaeology, as the discipline has been implicated in the colonialist endeavour and accused of perpetrating ethnocentric expectations on indigenous history (Atalay 2006; Deloria 1992; Kehoe 1998; Nicholas 2005; Roy 2006; Watkins 2005). As such, post-colonial archaeological theory analyzes and confronts this colonial legacy, with the aim to “demystify” and “decolonize” research by deconstructing power and knowledge imbalances between researchers and descendant communities, specifically indigenous peoples (Smith 2006).

Decolonizing methods include: 1) making research processes and results accessible to descendant communities; 2) accepting and fulfilling the obligations of our institutional relationships with these communities created by previous generations of archaeologists; 3) acknowledging the use and value of archaeology to indigenous communities; 4) recognizing the ethnocentrism of academic perspectives (including theoretical models, assumptions and causalities) (Atalay 2006; Martindale and Letham in press) and 5) recognizing the complexity of the past, in which archaeology is only one facet. As such, one objective of my work is to make the results of Borden’s research accessible to the Musqueam community. Another, following 4 and 5, is to provide a full description of the data to allow for better evaluation of the regional explanatory models.

Moss (2006) suggests that Northwest Coast archaeologists have focused too much on the big questions at the expense of the empirical data. One such big question is the evolutionary development of cultural complexity. The full extent height of this

development includes historically known ethnographic patterns and thus, many have assumed that later period NWC societies were almost identical to those described by 19th and 20th century ethnographers. In major overviews, researchers subscribing to an evolutionary view have considered the Stselax Phase as the end of an unfolding development towards cultural complexity and thus, relatively stable (Ames and Maschner 1999; Borden 1970:22-24; Matson and Coupland 1995). As suggested by Martindale and Letham (in press), this progressive evolutionary model needs testing, particularly as it is based on the culturally specific assumption of economic rationalism and democratic capitalism, at work in the archaeologists' own society. With more data available, it will be possible to better evaluate this and alternative models, which are more inclusive of indigenous understandings of their history. One objective of my work is to provide such data in order to shed light on the dynamic history of this period.

Additionally, this project confronts the orthodox archaeological approach to change. As discussed by Trigger (1981) archaeologists have traditionally had problems describing material change without suggesting discontinuity in anthropological culture. This is the case with the phases of Borden's Fraser Delta sequence, particularly his earliest diffusion theories (1951), which seem to suggest that the ancestors of contemporary Musqueam were interior people who had replaced an earlier group in the region. This arguably disassociates contemporary Musqueam in space and time from the original occupants of these archaeological sites (Roy 2006). This is also the case with the implicitly colonial terminal date of the Stselax Phase at 1808 AD. In light of this, the approach of this project is to view change in the context of Musqueam continuity.

1.2 Background and Location

DhRt-2 is located on the Musqueam IR 2 lands in southern Vancouver (Figure 1.1). The reserve is bounded by Marine Drive to the north, the Fraser River to the south, UBC endowment lands to the west, and Point Grey Golf and Country Club to the east.



Figure 1.1 Map of Region Showing Musqueam IR2

This area encompasses just a fraction of traditional Musqueam territory, which spans Vancouver and surrounding lands (Musqueam Indian Band 1976). There are four major sites on the reserve (DhRt-4, 3, 2, and 1) that were excavated by Borden from the 1950s to the 1970s. These sites appear to be both sequential and representative of an uninterrupted occupational history. The shifting of village sites along Musqueam Creek and between the delta (DhRt-4, -2, -1) and moraine (DhRt-3) is likely due to the movement of the north branch of the Fraser River, effecting the location of suitable places for village construction and beach access for watercraft. The Fraser has moved southward over the past century, a process that has accelerated from the construction of

the breakwater off Iona Island, but was an ongoing geological trend over the past 4000 years (Leeson 1957:11; Martindale 2010:36).

During Borden's work in the 1950s, DhRt-2 was visible as an ellipse-shaped mound beginning 175 yards (160 m) from the eastern reserve boundary and extending westward to Musqueam Creek with deposits just beyond. The main portion of the mound was bounded to the south by a small creek that was once a tributary of Musqueam Creek. According to Borden, the shell midden deposits also appeared to extend at least 30 yards (27 m) north on the north side of 51st Avenue (Abbott 1955; [Hynes 2011:1](#)).

The sc̄alex^w village was also noted by Simon Fraser in his diary in 1808 where he recorded “a fort 1500 feet in length and 90 feet in breadth” along the river at “Misquame” (Lamb 2007:125-126; see also Poulson 2005: 28-31). At this time the Fraser River would have been further north and closer to the site. According to Musqueam community members (in the 1950s) this “fort” was actually six or seven houses arranged in a straight line, east to west, along the river, except for the third house from the east, which was perpendicular to the others (Abbott 1955). Until the 1950s, two of these original plank houses remained, one belonging to the Point family and the other to the Charles family. The latter became the site of Borden's major excavation from 1956-1961. Musqueam oral history, as discussed by Musqueam band member Victor Guerin (2010), describes the overall shape of the village as two rows of houses with one house closing the gap between them at the east end; this formed a rectangle open to the west facing Musqueam Creek. The central gap was a playground area. This is consistent with a sketch map present in Borden's notes (Borden Notebook 3:113; [Hynes 2011:2](#)).

1.3 Borden's Fraser Delta Sequence-The Stselax Phase

Borden's (1970) most extensive description of DhRt-2 is included as part of his discussion of the Fraser Delta Sequence (see also Borden 1951; 1971). Each phase is based upon a typology of diagnostic artifacts. These Phases include: 1. Locarno Beach (800-200 BC); 2. Marpole (400 BC- AD 450); 3. Whalen II (AD 350-800); 4. Pre-Stselax (AD 800-1250); and 5. Stselax (AD 1250- 1808). This system, though largely still in place, has been updated with the removal of Whalen II, now considered a late variant of Marpole (Matson and Coupland 1995: 218). The four major sites on Musqueam IR 2, excavated by Borden, correspond to these phases.

The Stselax Phase itself is poorly defined. It is considered the beginning of the Developed or ethnographic Coast Salish culture pattern and is also referred to as the Late Phase. The date of this phase, 660 ± 130 years BP, comes from one C_{14} sample taken in 1951 from a black ash layer at the base of 1.5 m deep deposits (Borden 1970; Wilmeth 1978 cited in Angelbeck and Poulson 2002). Stselax is recognized by high frequencies of ground instead of chipped stone artifacts and substantial amounts of woodworking tools. Adzes, antler wedges, beaver incisor tools, bird bone tubes, blanket pins, bone barbs for fish hooks, decorated combs, unbarbed and unilaterally barbed bone projectile points, flat top hand mauls, small composite toggling harpoon valves and points, triangular chipped and ground stone points, sandstone abraders, and steatite pipes are among the Stselax Phase artifacts (Ames and Maschner 1999; Borden 1970; Mitchell 1971; 1990; Matson and Coupland 1995).

To Borden (1951:45-48), the Stselax Phase represented more than just an accumulation of particular artifact traits. He argued that these traits represented a fully

developed synthesis of migrating cultures: a northern or “Eskimoid” culture and an Interior culture. The northern cultural elements (i.e., toggling harpoons, slate grinding industry, labrets) were apparent in the earliest phases on the coast (i.e., Locarno Beach and Whalen I), while Interior traits (i.e., barbed harpoons, chipped stone, massive stone carving, advanced wood-working tools) were apparent in the intermediate phases (i.e., during Marpole and Whalen II). With a fusion of these traits, the late period, Stselax was the developed southern aspect of Northwest Coast culture.

This theory has significant implications, as it could be seen to suggest that the ancestors of contemporary local people were Interior people who had displaced an earlier culture in the region (Roy 2006). However, Borden’s diffusion theories were criticized by others and eventually his ideas seem to have changed on the subject. In his final article of 1983, instead of migration, he emphasizes a “fusion of traits” from Locarno Beach and Marpole phases that lead to the ethnographic Coast Salish culture (Thom 1992).

1.4 History of Archaeological Research (1950-1961)

Archaeological research on DhRt-2 began with surface collections in the late 1940s. Borden was eager to excavate the site and obtained written authorization from the Indian agent, H.E Taylor, in 1947. However, Musqueam band members were reluctant to permit this research without consultation with the community and excavations were postponed until community members gave their permission in 1950. At this time it was decided that an archaeological excavation could also serve the dual purpose of a drainage ditch for a new house being built for Musqueam band member, Johnny Louis (Borden n.d; Roy 2006:86).

The first trench extended southward from the excavated pit for the basement foundation towards the tributary of Musqueam Creek. In addition to providing drainage, the trench crossed the southern slope of the DhRt-2 midden crest on which the original *sćalex*^w village houses were said to have run east to west (Kenyon nd.). Though the trench was originally planned to be 75 ft x 5 ft (23 x 1.5 m), problems with flooding, especially in the southern end, varied the width from five to three feet (1.5 to 1 m) and the excavated length was approximately 20 feet less than originally planned (Piddington 1951). Trench 1 was located with reference to a Datum A, located to the east of the excavation with coordinates 00 N – 00 E ([Hynes 2011:3](#)).

Two other trenches were then excavated. TR2 (excavated from 1952-1953) was located north of 51st Avenue on the property of then acting Chief, Ed Sparrow, across the northern slope of the DhRt-2 midden. TR2 was twenty by five feet (6 x 1.5 m), used a new datum, D, which was a surveyor's stake at the south-eastern limits of the property (Borden Notebook 3: 55). TR3 was excavated from 1954-1955. It was perpendicular to TR1 and used the datum points A and C, which were initially for TR1 ([Hynes 2011:3](#)). Even though five foot excavation squares were laid out from N20'-25' and E50' to 90', the only completed units were E60'-E70' and E72'6"- 80' (Abbott 1955: 9-10).

Following the excavation of TR3, Musqueam elder, Frank Charles, gave Borden permission to excavate through the floor of his longhouse (from 1956-1961). This was one of the traditional *sćalex*^w village houses with evidence of a long occupational history. The Charles House was an ideal location for excavation, as it was sheltered from the weather, the disturbance of surrounding agriculture, and had fairly intact stratigraphic deposits (Abbott 1955:2-8; Kelly 1952:3; Leeson 1957:19; Poulson 2005:4).

Although much research was conducted over ten years, DhRt-2 received only limited attention in publication (Borden 1950; 1951). Borden's focus was on the artifacts being removed during excavation. This reflected the archaeological approach of the mid-20th century that sought diagnostic material objects to create chronological sequences (Borden 1955). These were accessioned into the UBC Laboratory of Archaeology (LOA) collections. Other materials, including soil samples, floral and faunal materials, and objects of potential manufacture were boxed and remain stored in LOA.

1.5 History of Archaeological Research (2002-Present)

Research recommenced on DhRt-2 in 2002 when midden deposits were removed in the construction of a new bridge across Musqueam Creek at 51st Avenue (Figure 1.2). This material was re-deposited at the Malé site (DhRt-1) and became the focus of a screening project, which continued with the field school (Angelbeck and Poulson 2002; Martindale 2008, 2009, 2010; forthcoming).

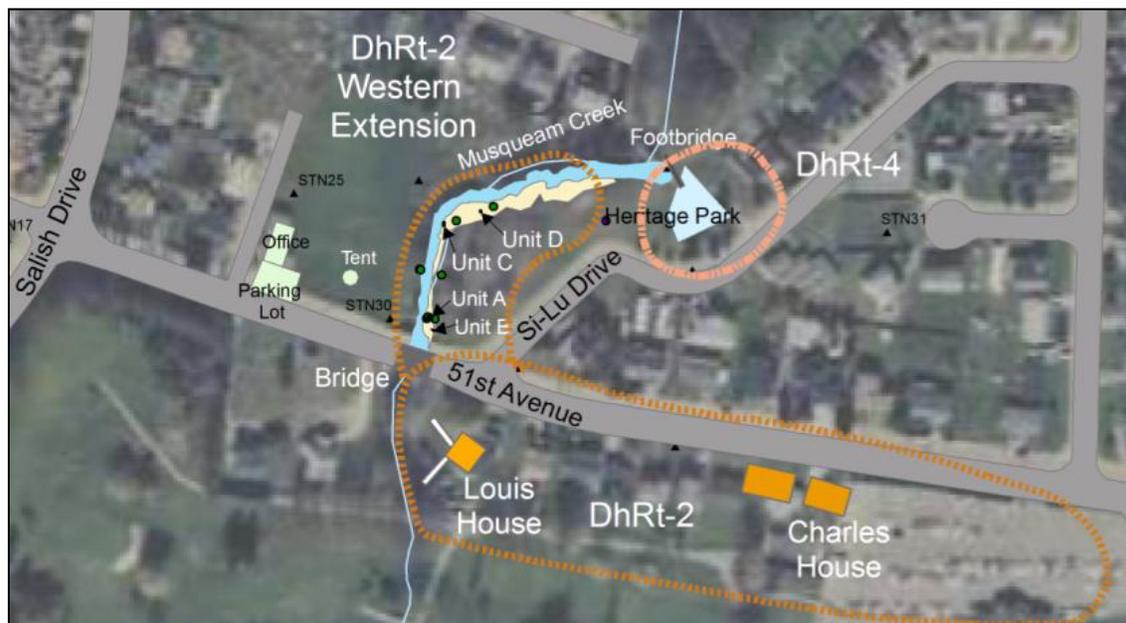


Figure 1.2 DhRt-2 Excavation Areas (Martindale 2010).

In 2005 DhRt-2 became the focus of a master's thesis (Poulson 2005) dealing with Musqueam agency and contact period objects found in the CH excavations. Poulson found few artifacts of European origin dating prior to 1858 and concluded that Musqueam people chose to maintain use of traditional materials other than ceremonially important, yet archaeologically invisible items.

The next time that DhRt-2 was encountered through excavation was in 2008 when two test pits were excavated as part of an impact assessment conducted on Lot 283 (Johnny Louis' property, now Harvey Louis') at the southwest corner of DhRt-2 (Ham and Yip 2008). Profiles were drawn of the south wall of Test Hole 1 (2.5 m deep with sand fill and historic material overlying 1.4 m of intact midden) and of the north profile of Test Hole 2 (1.8m deep). Ham and Yip's (2008) review of Piddington's (1951) trench profile revealed that Test Hole 2 had intersected with the western edge of Borden's excavation of Trench 1. Four matrix samples and thirteen artifacts were recovered.

In 2009 a small excavation was conducted at DhRt-2 as part of the Musqueam UBC Archaeological Field School (Martindale 2008; 2009; 2010; forthcoming). The extent of the site was also tested through subsurface test probes, coring, ground penetrating radar, and augering. Units A and B were chosen to probe the unexplored northern branch of the site along Musqueam Creek. Unit A included a lower wet site component with woven cedar fragments (reopened in 2010), a number of post moulds, occupational surfaces, and a clay lined pit that contained high phosphate levels (possibly from tanning hides). In 2010, Units C and D were excavated to better understand the northern extent of the site (Figure 1.2).

Chapter 2 Data and Methods

2.1 Archival Data

Although Borden and his students did not complete the processing and analysis of their work and the research was never adequately summarized, they maintained an excellent standard of record-keeping. These allow for a comprehensive analysis of most of their results. The main categories of archival data are field notes (referred to as N-Volumes in LOA), field and laboratory catalogues (referred to as A-Volumes), plan and profile drawings including large maps, photos, student reports submitted as part of Anth 420, and unpublished reports created by researchers using Borden's data or from later projects ([Hynes 2011:5](#)). Table 2.1 presents the archival data pertaining to DhRt-2.

Table 2.1 DhRt-2 Archive Contents

Data Type	Years	Description	Medium
Field notes	1950	Box 50 Files 13, 14, 15 - Pertain to excavation of TR1	Borden Fonds, Archaeology Series, UBC Archives
Field notes	1951-1961	N3:127 pgs (1951-55); TR1= pg 1-52; TR2=pg 55-95; TR3 = 97-127 N4: 410 pgs (1956-55) Charles House	Bound paper volumes, digital scans (LOA), UBC, (Hynes 2011:6)
Survey data		Notations on midden contours	Small notebook (LOA)
Artifact Logs	1950-1961	3 volumes, 3500 Catalogue Numbers	Bound paper volumes, digital scans (LOA)
Artifact Catalogues		4866 items (not all from 1949-1961)	LOA Database, Reciprocal Research Network
Plan view Drawings	1951-1961	Within field notes	Bound paper volumes, digital scans (LOA), (Hynes 2011:28-38)
Profiles	1951-1961	TR 1,2,3: 12 drawings; CH: 17 drawings (some duplicates)	Loose oversized paper (LOA), (Hynes 2011:12- 25; 58-60)
Maps	1950-1961	10 contour, 2 of site in relation to creek/city, 8 excavation plans (some duplicates)	Loose oversized paper (various sizes) (LOA)
Photos	1950-1961	20 volumes, hundreds of photographs	Slides, digital scans (LOA)
Unpublished Reports	1950-1961 2002-2010	17 pertain to excavations	Paper, digital scans (LOA), (Hynes 2011:5)

2.2 The Production of the Archive

Most of the data pertaining to DhRt-2 comes from Borden's excavation of the site from 1950-1961. His methods for data collection and recording were comparable to modern standards of archaeological practice. During this period, archaeological methods had reached a new level of systematization (Borden 1955). Archaeologists were collecting more data, developing new excavation methods, and using new dating techniques, such as radiocarbon dating (Trigger 2006: 290-303; 382). With his emphasis on culture-history Borden placed more attention on chronology and context. This concern is manifest in the volume of stratigraphic and contextual information recorded at DhRt-2, which enables stratigraphic analysis of the site 50 years later.

The field data for DhRt-2 produced between 1950 and 1961 was generated by Charles Borden, his field-school students, and members of the UBC Archaeology Club. Each field-school student, along with club members, worked in the field one day every week from the fall (September/October) to the spring (April/May) each season. Each student worked on the same unit until it was finished, producing all of its related field notes, maps, drawings, and additional reports. Though the field seasons differed, methods of data collection (surface collection, mapping, excavation, screening) were consistent, as is made apparent in student essays on the site, where they are outlined repeatedly.

Excavations were done by trowel and dustpan in six-inch (25 cm) levels. Objects found within the same level were bagged together. Spatial measurements for significant artifacts and features were generated using north/south and east/west coordinates along with their depth in inches. At the Charles house the depths were taken from surface, as

the ground was fairly level. However, at each of the trenches, various level lines of reference were used from local datums in each unit.

In areas where soil had hardened, due to frost, picks were used to remove the soil, which was then screened. According to student reports screening of all excavated material took place, though the exact parameters such as mesh size are unknown. LOA has a collection of screens from this era in storage and they are primarily ¼ in mesh. Flooding within the bottom layers of some units was dealt with through the use of sump pumps, drainage holes, or in some cases abandonment (Piddington 1951:10-11). Recording methods for each of the forms of data are outlined below.

2.2.1 Field Notes

The field note volumes are the work of multiple authors, including Borden himself. Though this presents descriptive and stylistic variation within each book, there is a level of consistency in the recorded data. Excavators always mention the date, the crew, the weather, and the section of the site being worked on. If the activity was excavation, the note-taker usually began their description with depths, though these are sometimes found within the descriptive body. Other data, such as soil content, are presented, though described in general terms, for example shell, mussel, or dark house floor.

Artifacts are also presented in the field notes, either as part of a numbered list at the end of a description, or within the body of the notes. Separate artifact logs were also kept. However, it seems that only diagnostic items are recorded separately and/or provided with catalogue numbers and spatial positions. This is supported by the number of additional items recorded in the subsequently created DhRt-2 catalogue at LOA, and

by the extra un-catalogued items in association bags by level still held at LOA¹. In the original field notes, other items thought to be less noteworthy, such as stone chipping detritus or fragments of wood, are often mentioned within the descriptive body of the notes without specifying location. This is also the case with fauna, which is sometimes mentioned in a numbered list or within the notes in general. Unless diagnostic they did not receive an original catalogue number at the time. Features, though not indexed, were also recorded in the notes, often with reference to their respective drawings.

At times, these notes were not only a place for the description of archaeological data, but for any other observations or events that took place. Information such as visitors to the site, events impacting the excavation, interpretation of the archaeological data, and things happening in the Musqueam community were recorded at various points.

2.2.2 Drawings, Maps, Photographs

In addition to the field notes, a significant number of drawings were produced including plan view drawings, vertical profiles, and maps. Detailed sketches of surface finds, house contents, and a map of the excavation plan were produced before digging in the Charles House. The pre-excavation map of the Charles House was generated with reference to Datum E, at the centre of the units (Gillies 1957; [Hynes 2011:4](#); Leeson 1957; Little 1957; Woolverton 1957). Students in charge of their area made smaller plan view maps of each unit. These were apparently drawn whenever interesting features were present or, in some cases, at Level intervals of every six inches. These were included directly in the field note volumes. Stratigraphic profile drawings were also produced by the field-school students at the end of the excavation of their unit. Sometimes multiple

¹ Martindale, A. and P. Merchant (2011) Analysis of Archaeological Materials Recovered from DhRt-2 (s̓c̓əlexw), DhRt-3, and DhRt-4 sites. Manuscript on file, with the Laboratory of Archaeology, University of British Columbia, Vancouver.

versions are present in student reports and on loose graph paper. Different students used slightly different notations and individual drawings had their own legends. Profiles were also drawn at the end of the excavation of TR1, TR 2, TR3 and photographs were taken regularly. Plan view maps were drawn when significant features were present. The excavations also generated a number of photographs that showcase specific features, plan view and stratigraphic sections, artifacts, and excavation areas.

2.3 Archival Methods

In order to use the archival data to understand the archaeological record at DhRt-2, I had to make sense of each excavator's particular method of recording data. Disparate data was organized but largely un-synthesized and needed to be inventoried and compiled to permit interpretation. The first step involved indexing all of the field notes, maps, drawings, and reports ([Hynes 2011](#)). All of the hand-written field notes, which had been digitally scanned, were read and indexed according to excavation unit and date. For the Charles House excavations these notes were also transcribed into shorthand to create an accessible hard copy organized by unit with reference to original notebook pages. An inventory of all maps, plan view, and stratigraphic drawings was created with the latter being digitally scanned. A thorough system of cross-referencing of all of the drawings to their respective field note pages allowed for efficient comparison between datasets. Deciphering the system of recording that had produced the archive for DhRt-2 involved reading and comparing the notes, student reports, and drawings in detail.

Deriving information about the archaeological record of DhRt-2 from its archive involved a number of steps including (in this order):

1. Redrawing profile drawings- linked to show a connected view of the layers.
2. Redrawing plan view drawings, organized to show changes through depth.

3. Classification of the stratigraphy.
4. Creation of an index for the features.
5. Analysis of the distribution of artifacts.

2.3.1 Rendering

In order to do a stratigraphic analysis of the site, the profiles were linked to show a connected view of the layers. Drawings that would provide the most complete picture of the stratigraphy were then chosen for closer analysis. Peripheral profiles were used to assess the Charles House stratigraphy including: North (Pits L, K, J), East (Pits J, G, E, A), South (Pits A, B, C), and West (Pits C, F, I, L). The eastern profile of Pit D was not found. Therefore, the east profile of the adjacent Pit, E, is included ([Hynes 2011:18](#)).

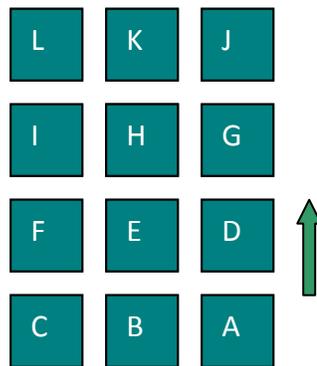


Figure 2.1 Plan View of CH Units, Arrow Points North

The west faces of TR1 and TR2, and the north and west faces from two units in TR3 were also used ([Hynes 2011:58-60](#)).

Rather than put the archival originals at risk, these loose drawings were carefully scanned and the digital copies used to redraw the maps and profiles. The profiles in the Charles House were then redrawn using Adobe Illustrator and Corel Draw. In these programs, digital copies of the original drawings were stitched together as bitmaps and traced to make new composite vector images. This new rendering then acted as a basis for cross-referencing and overlaying new information for my analysis. The scans of the trenches were used and these were not rendered. Plan view drawings for the Charles

House were also redrawn and organized in Adobe Illustrator, providing a clear representation of recorded horizontal site changes through depth ([Hynes 2011:28-38](#)).

Each individual drawing was formatted to fit a template made of the excavation plan for every six inch level. All were referenced to and checked against the field notes. Cases of contradiction or uncertainty were noted directly next to the respective drawings.

2.3.2 Stratigraphy, Methods

Using the rendered drawings and the field notes, I have created a basic classification of the stratigraphy. The following definitions explain my classification:

- 1. Level:** divisions assigned at arbitrary regular intervals by the excavators. Levels divide the soil matrix regardless of the natural layers. They may be used to subdivide these layers to provide more control over provenience (i.e. the context of artifacts and features within). Borden excavated at DhRt-2 with 6 in levels.
- 2. Layer:** sediments that have accumulated within a distinct time period and can be distinguished from each other by similar composition. A layer may have sub-layers, which are not assigned at arbitrary depths, but indicate variation within.
- 3. Occupational Surface:** a layer with its associated features
- 4. Occupational Zone:** a group of related layers and associated features.

Aside from the six-inch levels, there seems to be no uniform labelling system for vertical provenience or for the layers at the site. Instead, field notes and drawings have assorted descriptors for what appears to be the same layer, varying by excavator, plan drafter, and/or note taker. Various general descriptors are used, including “dark house floor”, “shell mix,” “clay,” etc. In publication, Borden simply discusses the stratigraphy in terms of “historic” versus “prehistoric” (1951; 1970). Some of his students also divided the layers similarly (Woolverton 1957).

I have preserved Borden’s original system of six-inch levels, as it was used for artifact analysis. This system also allowed me to match up artifact and feature locations.

However, the level system does not correspond perfectly with the layer system as some levels have crosscut layers since the latter are not always horizontal. Therefore, a layer may not capture the full six inches of a level depending on its depth. Because of this, the layer system and the level system are independent of one another (see Table 3.1).

Different classifications were created to correspond to each excavation area. The Charles House was the primary focus of stratigraphic analysis. Less detailed stratigraphic classifications were completed of the reports from the trench excavations and for the 2009-2010 field school for the purposes of comparison. Occupational surfaces (layers and their associated features) and occupational zones (groups of related layers) allowed for such comparisons. The full classification is presented in Chapter 3.

2.3.3 Features, Methods

During the excavations features were noted in field notes, drawings, and photographs but there seemed to be no feature index or log. Therefore, I created a feature index for the Charles House (CH) excavation ([Hynes 2011:44-55](#)). TR features were described by looking at student reports and the profile drawings for the purpose of broad comparison ([Hynes 2011:58-60](#)).

The main challenge in creating such an index was dealing with points of confusion between the field notes and the drawings. It was often difficult to find good descriptions in the field notes for features seen in the drawings. Also, field notes sometimes describe features that are not visible or are difficult to locate in the plans and profiles. For these reasons features first seen in profile were first catalogued and checked against the field notes and plan view drawings for verification. This was followed by noting features seen in plan view, but not in the profiles, and then features mentioned in

the field notes but not seen in either set of drawings. The main source for understanding the feature, whether it be a particular profile(s), plan view(s), or note page(s) was recorded. In cases where I was uncertain as to whether the same feature was being referred to in the field notes as in the drawings, I assigned the feature a temporary number and noted its possible match. Table 2.2 shows the number of features recorded for CH, TR1, TR2, and TR3 (for full description of features see [Hynes 2011:43-63](#)).

Table 2.2 Number of Features Recorded CH, TR1, TR2, TR3

	CH	TR1	TR2	TR3
Post Moulds	114	1	4	17
Hearths	31	1		
Pits	3	2 (possible posts)		2 (possible posts)
Rock features	6	1 (rock oven)		2 (fire pits)
Misc	13		2	

2.3.4 Artifacts and Fauna, Methods

The fauna and artifacts have undergone the most analysis of all the data since the excavation was completed. Additionally, Borden created a typology of Stselax Phase artifacts. For this project, I have collated and compared the results of Borden's students' reports to assess the patterning of artifacts through the stratigraphic divisions I have outlined in this thesis. I have chosen to focus on frequency and general classes of artifacts, rather than specific types, as I have not looked at the artifacts themselves and assessing the logic behind different classifications would require this.

Chapter 3 Results and Analysis

This chapter is a descriptive presentation of results in three parts: Stratigraphy, Features, and Artifacts. Detailed results are provided for the CH excavation and shorter summaries are provided for TR1, TR2, TR3, and Units A-D for comparison.

3.1 Stratigraphy Results

DhRt-2 is a shell midden, characterized by different types and densities of mollusc shell, accumulated over centuries of human activity. It also has a lower wet site component consisting of glacial borne clay silts above a sterile stratum of sand and gravel. The stratigraphy of the site can be divided into three broad zones as follows:

- **Upper:** layers of varying degrees of dark soil and shell.
- **Middle:** layers of dense shell, occasionally stratified with pure sand.
- **Lower:** waterlogged layers of bluish-grey glacial borne clay (Fraser gley) common throughout the Fraser Delta region (Martindale 2010:105) and/or a sterile subsoil of sand and gravel.

Also present are features consisting of ash, sand, clay, charcoal, stone, and a number of occupational surfaces. While this stratigraphic pattern largely applies to CH and to Units A and D, much variation can be seen in the TRs and in Unit C.

3.1.1 Charles House Stratigraphy Results

CH stratigraphy includes a fairly level upper zone of dark soil and shell with many occupational surfaces, a middle zone of alternating layers of dense shell and sand, and a lower zone of waterlogged clay and sand/gravel. This general pattern is consistent across the peripheral units with minor differences in the depths of specific layers (Table 3.1; [Hynes 2011:39](#)). In two cases (Pits A and L) the middle zone does not appear to have alternating sand and shell (layer CH-D). Presence of lower zone layers is consistent apart from cases where excavation limit was reached early. Individual layers are grouped

within these zones as seen in Table 3.1. Due to the varying depths below surface (dbs) of each layer there are overlaps in zone/layer depths.

Table 3.1 CH Zones, Layers, and Levels with Description

Zones and Layers				Levels (dbs)				
Upper	CH A/B			1:	0-6 in	0-15.2 cm		
				2:	6-12 in	15.2-30.5 cm		
	3:			12-18 in	30.5-45.7 cm			
	4:			18-24 in	45.7-60.9 cm			
	5:			24-30 in	60.9-76.2 cm			
	6:			30-36 in	76.2-91.4 cm			
	7:			36-42 in	91.4-106.7 cm			
	8:			42-48 in	106.7-121.9 cm			
	9:			48-54 in	121.9-137.2 cm			
	10:			54-60 in	137.2-152.4 cm			
	CH C	Middle	CHD/E	Low	CHF/G	11:	60-66 in	152.4-167.6 cm
						12:	66-72 in	167.6-182.9 cm
						13:	72+ in	182.9+ cm
Layers								
CH A/B= Topsoil/dark soil and shell -post contact: 6-12 in (15.2-20.5 cm) thick								
CH C= Dark soil and shell: 36-46 in (91.4-116.8 cm) thick								
CH D= Alternating dense shell and sand: 6-24 in (15.2-61cm) thick								
CH E= Dense shell: 6-24 in (15.2-61 cm) thick								
CH F= Silt/Clay: 6-12 in (15.2-20.5 cm) thick								
CH G= Sand and gravel subsoil								

3.1.1.1 Detailed Description of Each Layer (CH)

CH-A/CH-B [0-9/12 in (0 - 22.9/30.5 cm) Below Surface (dbs)] Upper zone

CH-A refers to the disturbed topsoil or house floor of the Charles House. However, in this household context it is difficult and perhaps irrelevant to separate the layers of contemporary occupation from those of earlier occupation below. CH-B is a more substantial varied mix of dark soil and shell containing post-contact artifacts. It also contains charcoal, sand, ash, and clay in various quantities that comprise features. CH-B has relatively less shell than CH-C. Adjectives such as ‘no,’ ‘little,’ or ‘fragmentary’ were often used by excavators to describe the amount of shell in this layer.

CH-C [9/12-50/60 in (22.9/30.5 -127/152.4 cm) dbs] Upper Zone

CH-C is like CH-B with varying amounts of dark soil and shell and features of charcoal, sand, ash, and clay. Unlike CH-B, it generally does not contain post-contact artifacts and has relatively more shell. While specific percentages were not originally noted, a general increase of shell with depth is apparent (except in Pit K). Discussion of this increase can only be subjective, as different adjectives were used to describe what may or may not be the same layer or soil composition. For instance, one unit's description may begin with some shell and increase to more shell, while another may start with no shell and increase to some. This is also the case with shell type where the notes and the drawings sometimes contradict. While it seems that mussel generally predominates, especially in the upper levels, and that barnacle, and sometimes pure clam, appear only in the lower levels, it is hard to tell whether this was due to differing interpretations of shell types or if mussel may have been used as a synonym for shell in general.

CH-D [45/60-60/73 in (114.3/152.4 -152.4/185.4 cm) dbs] Middle Zone

CH-D is made up of multiple layers of alternating dense shell and sand, grouped together because of association. Sometimes, charcoal is present (see Pit A) as well as firecracked rock, as seen in Pit C. Artifacts and fauna are apparent, but features are not. These layers may represent a typical shell midden area of discard with the dual purpose of creating a well-drained terrace, as they overlie a layer of wet Fraser gley (CH-F).

Most of the excavation area has evidence of some form of CH-D. However in some cases, this pattern is described in the notes or in plan view ([Hynes 2011:27](#)) but is not evident in the profiles, as in the case of Pit J ([Hynes 2011:21](#)). It seems that some

students were more specific in describing CH-D, while others listed only sand and mussel. Whether or not there are alternating bands in these cases is unclear. This may be due to various external issues, such as flooding, frost and damage, which affected the quality of drawings at different periods. The only unit that has absolutely no evidence of this layer pattern is Pit L. It is apparent in the plan view drawings of Pit I and Pit F though not in the profile drawings. Also, Pit E has alternating bands of shell and black soil in profile ([Hynes 2011:12-25](#)).

CH-E [45/60-60/73 in (114.3/152.4 -152.4/185.4 cm) dbs] Middle Zone

This is a dense shell layer closely related to CH-D, as it may also represent an area of discard and/or terrace building. It also overlays the gley layer (CH-F) when CH-D is not present. CH-D is on top of CH-E in all units where these layers occur with the exception of Pit A and possibly Pit F. For this reason it could also be considered a component of CH-D. This layer contains artifacts and fauna but no apparent features.

CH-F [57/73- 60/75 in (144.8/185.4-152.4/190.5 cm) dbs] Lower Zone

CH-F appears to be a matrix of clay and silt, likely Fraser gley that might represent a shoreline or estuary zone of Musqueam creek (Martindale 2009:105). In all CH units, it appears above the sterile layer (CH-G) except in the Pit K north profile, where a fine mussel and sand mix (CH-E) is found between the clay (CH-F) and sand (CH-G). It is likely that the silt and clay content of this layer is not anthropogenic, but deposited by the river during high water levels in the spring and fall. Cultural materials and layers found within CH-F are thus either things that have been deposited, and possibly sunk, into wet mud or things that have been deposited and then covered by river silt.

CH-G [60/75 in + (152.4/190.5+ cm) dbs] Lower Zone

CH-G is comprised of sterile gravel and sand. This layer was not recorded on all profiles, as many units were left in the spring of 1956 due to an uncontrollable infiltration of water. Upon return in the fall, these were sometimes dug to sterile or to the above silt/clay layer (CH-F). In the field notes there seems to be some confusion between these two layers, perhaps because they were both waterlogged at the time of excavation (Borden Notebook 4 1956-1961).

3.1.2 Trench 1, Trench 2, and Trench 3 Stratigraphy Summary

The TR stratigraphic layers and their content are similar enough to the CH stratigraphy to confirm that they are part of the same site. However, the TR stratigraphy does not follow the same zone pattern of village - shell midden - wet site, as seen in the CH profiles. Furthermore, there is much more layer variability between and within each trench than is seen for the CH. These patterns are described in the sections below.

Depths below surface (dbs) and datum (dbd) were hard to determine due to the sloping and uneven ground and the difficulty in assessing the placement of reference lines; therefore, approximate thicknesses of each layer set are given. Borden appears to have created different provenience record systems over his career with variability in notations of depth (Martindale 2010, pers. comm.). The DhRt-2 excavations were among the earliest projects he undertook and his notation system here (Martindale and Merchant 2011) differs from his later methods at DhRt-3 (Martindale 2008: 36-37). The trench excavations are the earliest at DhRt-2 and the LOA archive has no record of its logic or the measurements to his vertical reference datums. However, from the use of this system to record elevations in field notes and artifact catalogues, Martindale and Merchant

(2011) have been able to reconstruct the vertical elevation of some of the reference planes (recorded in the notes as S, E, W, R, R₁, R₂, or R₄), although the full system is incomplete making it hard to assess relative and absolute elevations within the trench excavations.

Piddington (1951:11) notes that the vertical elevation at the highest point of the excavated surface of TR1 (northeast) is 17 ft above sea level, dropping to 6 ft 8 in at the southwest end.

3.1.2.1 Trench 1 Stratigraphy

TR1 has a southern section with deposits that slope to the southwest (as seen in profile S0-30') and a northern section (profile N4-16') with a combination of sloping and horizontally orientated deposits (Borden Notebook 3:1-52; Piddington 1951; Kelly 1952; [Hynes 2011:57-58](#)). The broad stratigraphic pattern (upper to lower deposits) is as follows:

- **Cultivated Topsoil**, approx. 9 in (22.9 cm) thick (occurring in both north and south).
- **Sloping Dark Soil and Shell** (both northern and southern sections), approx. 48-54 in (121.9-137.1 cm) thick. This may represent an outside discard area. There are no features in these layers with the exception of a large post mould extending from just beneath the topsoil in the northern portion of the trench (N4-16'). In this case it appears that the sloping deposits created land for the extension of a house site (Although these layers slope to the southwest, the degree of this slope is less than the layers below. The presence of the post and this gradual levelling of the depositional surface may indicate that this area of the terrace was built up with discarded shell to extend or create an occupational surface for a building.

- **Short Horizontally Orientated Layers of Charcoal, Sand, Mussel, Dark Soil, Ash, and Cobbles** with a fire pit feature (only occurring in the northern portion) approximately 24” (61 cm) thick (Notebook 3:21-29; Kelly 1952; Piddington 1951; [Hynes 2011:58](#)).
- **Alternating Shell/ Sand**, (only occurring in the north), approx. 6 in (15.2 cm) thick.
- **Sand with Silt Pockets and Charcoal** (only occurring in northern portion N10-18’; Borden Notebook 3:34-44), contains mammal and fish bones.
- **Sloping Sand, Gravel, Sand Silt Mix** (only in the southern portion) with charcoal and wooden fragments of unknown significance. The continuation of cultural deposits below this is borne out by a description of a small gully in the eastern portion of the trench filled with more midden material (Borden Notebook 3:52).

3.1.2.2 Trench 2 Stratigraphy

The available profiles for TR2 (N 3-18’) are more ambiguous than the others. This may be due to disturbances during excavation, as recorded in the field notes (Borden Notebook 3 1953:78-79; 94). Nevertheless, it is possible to see that the upper layers are sloping while the lower layers are horizontally orientated with occupational surfaces and features ([Hynes 2011: 59](#)). While TR1 deposits, dug on the southern slope of the midden crest, slope southward and westward, TR2 deposits, dug on the opposite side of the crest, slope northward and eastward. The basic stratigraphic pattern is as follows:

- **Cultivated Topsoil**, approximately 12 in (30.5 cm) thick.
- **Sloping Dark Soil and Shell**, approx. 42 in (106.7 cm) thick, contains fish remains.
- **Gummy Dark Layer**, approximately 3 in (7.6 cm) thick.

- **Alternating Shell and Sand** with unknown wooden fragments, approx. 12 in (30.5 cm) thick. Possibly results from water action (Borden Notebook 3 1953:95).
- **Black Ash and Sand** with clear pockets of mussel and an occupational surface of post moulds and hearths, approximately 15 in (38.1 cm) thick.
- **Sand with Pockets of Silt and Clay**, contains few bones or other materials.

3.1.2.3 Trench 3 Stratigraphy

TR3 has more varied deposits than TR1 and TR2. TR3 deposits are mainly horizontal in orientation and silt is not apparent in the lower layers (Borden Notebook 3:97-127; Abbott 1955; Kew 1955; [Hynes 2011:60](#)). The broad stratigraphic pattern is as follows:

- **Cultivated Topsoil**, approximately 9 in (22.9 cm) thick.
- **Sloping Disintegrated Mussel** (only in unit E60-70'), between 30 in to 42 in (36 to 106.7 cm) thick. This includes an approx. 1 in (2.5 cm) thick thin band of silt/ Dark soil and shell (horizontal orientation- only in unit E70-80'), approx. 36 in thick. This includes areas of thinly stratified fish remains.
- **Shell, Sand and Ash (Alternating and Mixed)**, approximately 18-24 in (45.7-61cm) thick, contains both mixtures of shell, sand and ash and distinct alternating layers.
- **Black Ash, Sand, Gravel, Rocks** ("fires throughout this stratum"), up to 12 in (30.5 cm) thick. E70-80' contains a rock filled fire-pit. Excavators describe subsoil-like sand overlying this. They have interpreted this pattern as resulting from the action of either a freshet of the creek or hightide washing the subsoil-like sand material over features below (Abbott 1955:11; Kew 1955:29-31; Borden Notebook 3:25).
- **Sand and Gravel**. Excavators suggest that this was once a sandbar (Abbott 1955:11; Kew 1955:29-31; Borden Notebook 3 1955:25).

3.1.3 Units A - D Stratigraphy Summary

Units A and D have a stratigraphic pattern that is similar to the CH pattern with an upper village zone, a middle shell midden/terrace zone, and a wetland/river estuary zone (Martindale 2009:108). The difference is that A and D do not have alternating layers of sand within the middle zone or basal sand/gravel. However, it is possible that sand/gravel exist beneath the wet clay, as further excavation was limited to protect the preserved basketry fragments. Unit B, located near the 51st Avenue bridge, contained similar deposits to A, but appeared disturbed from bridge construction. Contrastingly, Unit C, located near Musqueam Creek between A and D, contained entirely different deposits; including a thick layer of FCR and dark soil with basal glacial till and no waterlogged layers. Table 3.2 below provides a general stratigraphic summary of A-D (for a detailed index see Martindale 2009:100-107; forthcoming).

Table 3.2 Units A-D Stratigraphy Summary

A	B	C	D
<ol style="list-style-type: none"> 1. A Horizon/topsoil 2. Dark soil and shell (fine sand, humus, clay, silt), represents multi-component village 3. Dense shell (with charcoal, sand, silt, clay, hummus inclusions) 4. Waterlogged clay with basketry fragments 	<ol style="list-style-type: none"> 1. Preload 2. Dark soil and shell with many rocks, contains features 3. Shell, ash and charcoal, includes clay pit 4. Dense shell devoid of features 5. Waterlogged clay with wood fragments 	<ol style="list-style-type: none"> 1. A horizon-dark loam with no shell (5-20 cm dbd) 2. Dense shell (20-28 cm dbd) thicker on north 3. Black layer with a lot of FCR (28-46 cm dbd) 4. Glacial till-coarse sand/gravel 	<ol style="list-style-type: none"> 1. Dark soil with increasing shell 2. Dense shell with occupational surfaces (bands of charcoal) 3. Waterlogged clay with cultural material

3.2 Features Results

Features are the non-portable products of intentional construction and/or repeated activity at a site. This includes the remains of posts, hearths, pits, and other constructions (Martindale 2009:107). Features were indexed by first looking at profiles, then the plan

view drawings, field notes, and reports. These were assessed by type and by vertical distribution to identify occupational zones and surfaces through time.

The majority of DhRt-2 features are post moulds, the archaeological remains of posts formed either by decomposition, or by fill material. Posts may have been used for a variety of purposes in the village. For instance, they were integral to the construction of traditional Coast Salish houses, such as the Charles House, and could be semi permanent; i.e., added or removed for expansion or contraction of houses as necessary (Ames et al. 1992; Suttles 1991:216). Post moulds form different shapes, sizes, and patterns in the archaeological record. For instance, when old posts rot, new posts, dug into fresh holes, may replace them. In areas of continual replacement these sometimes leave a characteristic cluster, known as a post cloud (Daniel et al. 2008:13-14; [Hynes 2011:20](#)).

Other common DhRt-2 features include hearths, the remains of fires. Each family group may have had their own hearth within a compartment of the house; thus hearth location may reflect the location of compartments. Larger interior communal fires were also sometimes used. Hearths may be dug out and seen as basin shaped in profile, often associated with interiors, or they may be mound shaped (outdoor). Ash spreads are also common, formed by sweeping and cleaning (Ames et al.1992; Daniel et al. 2008).

3.2.1 Charles House Post Moulds

A total of 114 CH post moulds were indexed (53 in profile; 56 in plan view (but not in profile); and five in field notes (but not matched to a drawing; [Hynes 2011:43-50](#)). These numbers may be inexact as some may have been missed; some are ambiguous; and some are seen in multiple sources (profile, plan view, notes) and may not have been matched properly, which would result in increased numbers through duplication. There

are also instances where a group of post moulds were indexed as one; this includes a ‘post cloud’ (P22) from Pit G and 11 small (1 in /2.5 cm) post moulds (P92) in Pit I.

All of the CH post moulds occur within the upper zone (CH-A/B/C) and in each level from 1-9 (0-51 in/129 cm); this is based on top depth (the excavation surface; [Hynes 2011: 43-50](#)). The most reliable post moulds are those seen in profile as depth and width could be assessed; therefore, the exact depths (from plan view and field notes) may not be accurately represented. 17 of the post moulds are likely major architectural elements as they are at least 1 ft (30 cm) in width with the largest over 1.5 ft (48.26 cm).

Fifty-three post moulds were recorded in profile, 10 have squared bottoms ([Hynes 2011:43-50](#); Figure 3.1). All of these are 8 in (15.24 cm) or larger in width (two were not accessed). These squared posts may represent a uniform type for house construction; nine were excavated from levels 1-3 (0-18 in) with one excavated from level 6 (30-36 in db).

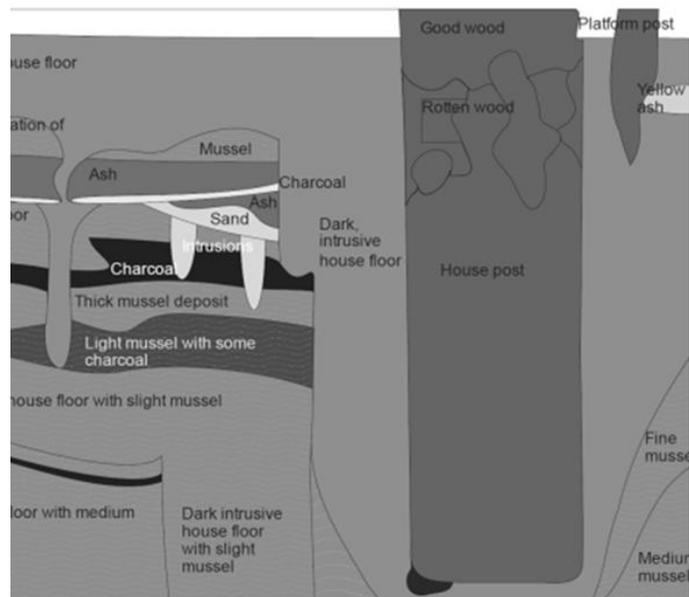


Figure 3.1 Examples of Squared Versus Rounded Bottom Post Moulds CH Pit K

The plan view drawings show a predominately south and west distribution of large post moulds with some occurring north ([Hynes 2011:50](#)). This pattern suggests the

continuity of the Charles House or of a similar structure in this location with minor shifts south and west. This theory is strengthened by the absence of large post moulds in the centre and the eastern units, which correspond to the middle interior of the Charles House. Many of these large post moulds are surrounded by smaller ones that may have been supports for the large posts or for interior platforms (i.e., Pit J 0-6 in and Pit L 18-24 in db). The majority of post moulds at lower levels (48-60 in db) occur in the south of the excavation area (Pits A, B, C, and F). These levels are not as well represented.

3.2.2 Charles House Hearths/Ash Spreads

Thirty-one CH hearths/ash spreads were found within the upper zone (CH-A/B/C), with the exception of an ash spread from the notes (H12) ([Hynes 2011:52-53](#)). Many were multi-component with grey, black, and/or ochre layers. All are more than 1 ft (30.5 cm) in width, the smallest being 16 in (40.64 cm). Three appear to be more than 5 ft (152.4 cm). This includes one 12 ft (365.8 cm) wide hearth with a post cloud (P22) that extends across Pits J and G. The ends taper to an ash spread, so the hearth is likely only several feet. The majority of true widths were not visible due to 2 ft (61 cm) baulks.

Shape was used to assess hearths as either indoor or outdoor (Figure 3.8; [Hynes 2011:52](#)). The majority (11) are basin (likely indoor); four are mound (likely outdoor); six are a combination, or of neither category; the remaining eight are ash spreads; five were in plan view or notes, and could not be assessed. The four mound shaped hearths are in the southwest part of the excavation area (Units C and F) and below 24 in db. This may indicate an original exterior space. Later, it seems that the entire area was part of an interior space. This corresponds with the post mould data indicating an eventual south

and westward movement of the Charles House ([Hynes 2011:50](#)). The plan drawings show shifting hearth patterns; this suggests movement of interior compartments.

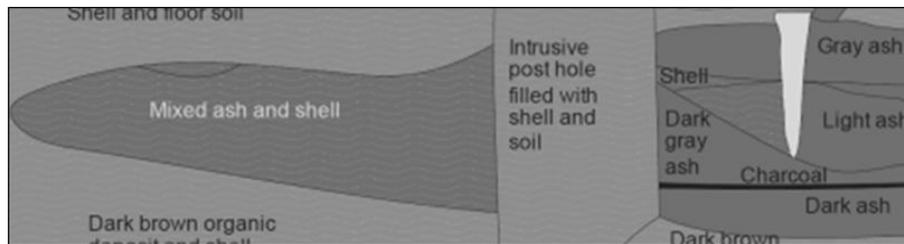


Figure 3.2 Mound/Basin Shaped Hearth CH Pit L (Hynes 2011:17)

3.2.3 Charles House Additional Features

Other CH features include three rock features, six pits, and 16 miscellaneous features, including charcoal, shell, or dark soil areas that may be occupational surfaces or features of unknown significance ([Hynes 2011](#)). There are two dark rectangular areas (F2 and F20) in plan view (Pit L at 32 in and 42 in) that excavators describe as “a hidden storage area” and a place “where a dancer may have emerged” ([Hynes 2011:56](#)). All features are found in the upper zone except one middle zone rock feature (F21).

3.2.4 Trench 1 Features

TR1 has five apparent features ([Hynes 2011](#): 57-58; 61), including a large square bottom post mould, just under the topsoil. The other features are located below the sloping deposits, indicating a village zone. These include: a rock oven feature (Borden Notebook 3:21; Kelly 1952; Piddington 1951); a hearth; and a possible post or pit within sand and alternating shell. The only feature apparent in the southern portion is a possible pit/post. Many ‘cooking stones’ are also in this area (Piddington 1951).

3.2.5 Trench 2 Features

All six TR2 features are located in the lower levels beneath the sloping soil and shell deposits, indicating a village zone beneath this midden ([Hynes 2011:59; 61](#)). These

include four 12 in (30.5cm) deep post moulds, a 3 in thick gummy occupational layer, and black ash directly above the subsoil (Borden Notebook 3:55-95).

3.2.6 Trench 3 Features

TR3 has an upper and a lower grouping of features/occupational zones ([Hynes 2011:60-61](#)). This lower zone is indicative of a village and has a large elliptical post mould and a rock filled fire pit covered with black ash and sand, which may be the result of water action (Abbott 1955:11; Kew 1955:29-31; Borden Notebook 3:125).

3.2.7 Units A- D Features Summary

Unit A contained five features as outlined by Martindale (2010:106-107). These include a possible post and a clay lined pit, both from the dark soil and shell layer (C), the postcontact village zone. The pit contained high phosphorous levels, which may indicate use of urine for curing hides (Martindale 2010:183-203). In the charcoal/shell layer (E1), the precontact village zone, there was an occupational surface with a sand lens, an FCR cluster, and a post mould at the sand/shell interface of F4. In layer E2, a circular charcoal and FCR concentration was found.

No features were recorded for Unit C, except the dense FCR layer of unknown significance. Eight were recorded for Unit D, including one post mould (east wall) extending from the loamy soil into the dense shell (30-35 cm dbd), occupational surfaces within the shell (in profile), and various ephemeral areas (in plan view) of uniformly shaped patches of clay, dark soil, and sea urchin spines (Martindale forthcoming).

3.3 Artifacts and Fauna Results

The LOA database lists approximately two thousand DhRt-2 artifacts. This does not include all items collected in the recent field-school, or the un-catalogued items in

storage. Many of Borden's students wrote detailed artifact descriptions (see Little 1957 for Pit J, Gilles 1957 for A and B, and Woolverton 1957 for A and F). Leeson (1957) includes a statistical analysis of all CH artifacts (474 items, up to 1957) by unit, level, and type. She found that A and K had the most artifacts and B and F the least, with two peaks of frequency by depth, one from 6-18 in (15.2-45.7 cm) dbs and the other from 42-48 in (106.7-121.9 cm) dbs. She attributes the high frequency from 6-18 in to the European contact period (see also Borden 1970) and the second peak to an early and intensified use of the site, suggesting that before this it was a transient campsite (19-22). Poulson (2005) used Leeson's (1957) classification system in conjunction with production dates in order to propose time periods for levels with artifacts of European origin. Level 5 (24-30 in dbs) was the lowest level to contain such artifacts.

The fauna from early excavations received less attention. Many of Borden's students list fauna types without providing stratigraphic context though this information is embedded in the field notes. It is apparent that mammal and fish bones appear in both the upper and middle zones of the Charles House. Additionally, numerous fish and mammal bones were found in TR1 and TR2 in the sand and mussel layers (Borden Notebook 3:52; 78). However, further examination is necessary to verify this.

Many artifact and fauna results have been produced for Units A-D (Martindale 2010:116-125; 204-249; forthcoming). Units A and B have a pattern that is consistent with the earlier excavation results and include Stselax Phase artifacts (Martindale 2009:116-125). Unit D produced similar results, though the upper layers appear to have been affected by the creek. Unit C had only a few lithic artifacts located in the FCR layer (Martindale forthcoming).

Chapter 4 Discussion and Interpretation of Occupational History

The empirical data from DhRt-2 had previously received little attention, although the site has been the subject of decades of archaeological investigation. From the retrieval of these data it is now possible to discuss the occupational history of the site (including individual excavation areas and the site as a whole); transitions from wetland to shell/midden terrace to village zones; variations within each stratigraphic zone; the continuity of the Charles House; and the patterning of features, such as post moulds and hearths. This chapter includes a discussion of these subjects based on the data presented in Chapter 3 in terms of specific patterns within excavation areas and the larger patterns (such as similarities/differences) between excavation areas.

4.1 Charles House Occupational History

CH layers can be grouped into three broad zones (bottom-top); wetland/river estuary, shell midden/terrace, and village. The lowest zone (glacial borne silts and sand) may indicate a time predating DhRt-2 or a time before the village had expanded to include this area. The middle zone (dense shell and alternating sand) is intriguing because it appears, on one hand, to be a typical midden deposit with relative homogeneity and a lack of architectural features. However, its location (over a wetland) and the inclusion of evenly alternating layers of pure sand suggest that it may represent a purposefully created terrace for expanded occupation over the wet area (see Blukis Onat 1985). The multi-component village zone stratigraphy (dark soil, shell, features of various compositions) is representative of intensive occupation and is distinctive as a village zone because almost all of the CH features occur within it. This includes large post moulds with a

predominately south, west, and northward alignment corresponding to the late Charles House; and predominately basin-shaped hearths, indicative of interior space.

Based on the patterned clustering of features in profile, this village zone can be broadly sub-divided into two distinct clusters (an upper and a lower) each consisting of multiple occupational zones and representing periods of intensive activity in these areas. These clusters correspond to increased numbers of artifacts (Leeson 1957), hearths, and large post moulds ([Hynes 2011:51](#)). They occur around levels 2-3 (12-24 in dbs) and levels 6-8 (30-48 in dbs). The upper cluster corresponds with more large square-bottomed post moulds. These are likely from major posts, similar to those from the Charles House.

Another way of describing the village zone is by looking at the presence of artifacts of European origin. Excavators note that these are largely confined to the upper 12 in (30.5 cm) of the excavation. However, according to Poulson (2005), level 5 (24-30 in dbs) was the lowest level to contain these. She associates this level with years of European exploration (1774-1826); levels 3-5 (12-30 in) with the fur trade years (1827-1858), and levels 1-2 (0-12 in) with the years of European colonization and settlement (1858 onwards). Additionally, as Poulson (2005) argues, the absence of these artifacts in the lower levels may be more representative of choice than of contact; i.e., lower levels without artifacts of European origin are not necessarily pre-contact levels.

A more detailed way of dividing the village zone involves looking at the profiles for distinct occupational zones. These zones are visible as stacks of occupational surfaces/floors representing related episodes of rebuilding or repair. There are up to five possible occupational zones; this effectively divides the previous model's upper cluster into 3 distinct zones and the lower cluster into 2 zones, with the uppermost occupational

zone consisting of features extending from the surface. All five of these subzones do not appear in each unit, but are visible across the units as a whole (

Figure 4.1).

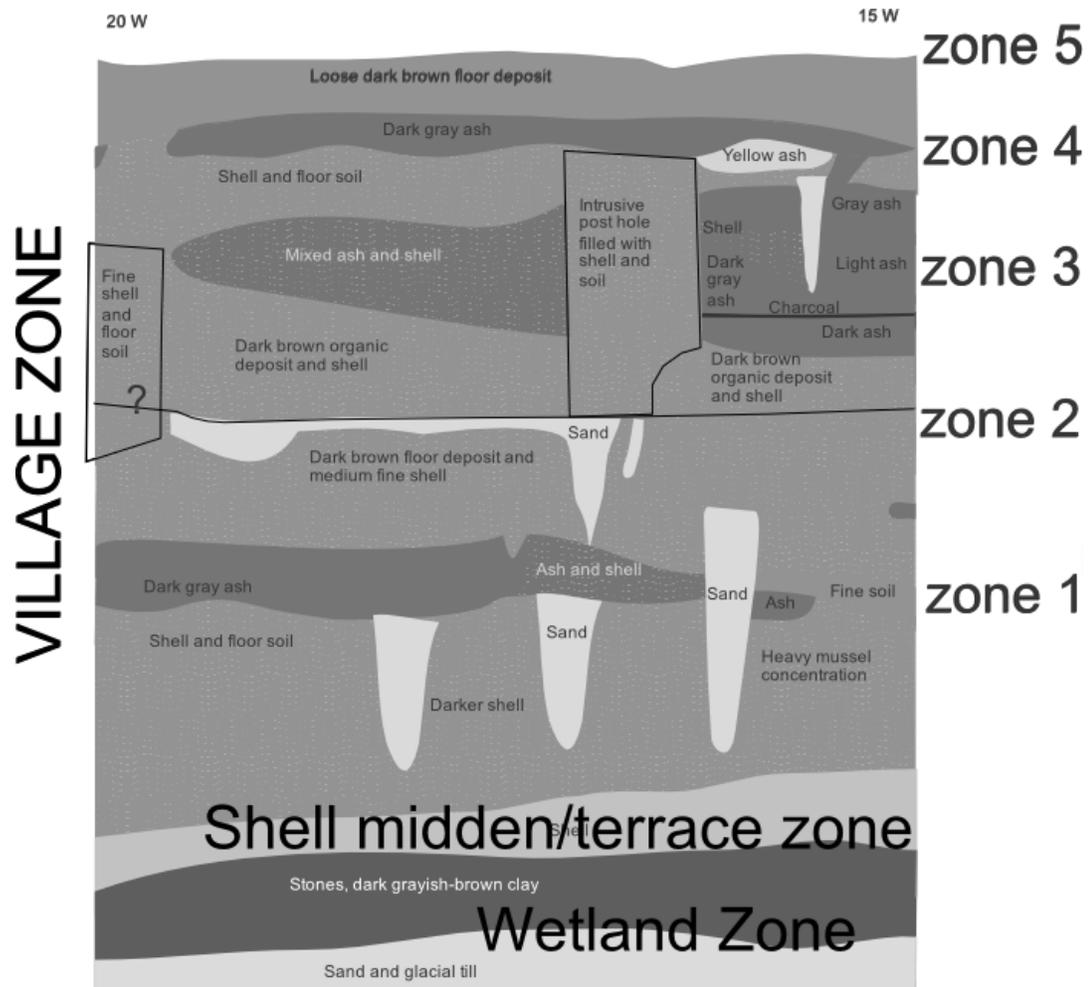


Figure 4.1 CH Pit L (North) with Five Occupational Zones

4.2 Comparison of Excavation Areas

The archaeological evidence does not contradict the oral history account of the shape of sc̄alex^w village, which is as follows: two rows of houses (and one to the east) with a gap between them, forming an open-ended rectangle facing west (Guerin 2010). The archaeological data show this household occupation in the Charles House excavation area and in the TR excavation areas, though the orientation of the houses for the trenches

is not clear. Data from Units A-D are too small and fragmentary to allow for detailed comparison with Guerin’s account, but none of these units show major architectural features associated with house construction.

What the archaeological data do show is the occupational history, including shifting of village zones through time. A comparison of the larger stratigraphic patterns between excavation sites shows that not all of these areas were occupied in the same way at the same time. For instance, the TR excavation areas have a pattern that appears to be the reverse of the CH pattern. Table 4.1 shows the zone patterns for each excavation area with each column showing the idealized profiles (top to bottom).

Table 4.1 Broad Zone Comparison Between CH and TRs (Top to Bottom)

CH	TR1	TR2	TR3
	Village		Village
Village	Midden	Midden	Midden
Midden	Village	Village	Village
Sand/Wetland	Sand/Wetland	Sand/Wetland	Sand

This pattern seems to indicate that TR areas were occupied first while the CH area was a midden, which built up a terrace over the wetland. Later the village shifted to the CH area with the TR areas as midden. TR1 shows the extension of the village on top of these sloping midden deposits. TR3 shows a midden that has been sandwiched by two village zones. The TR village zones are not necessarily interior; however, a house post mould does appear in the lower village zone of TR3 and in the upper village zone of TR1.

Units A and D have a pattern suggesting a similar occupational history as the CH units. Unit C, on the other hand, may have been an area outside of the wetland zone with some kind of occupation (FCR with black soil) that later became a midden. There is a lack of post-contact artifacts, which is likely the result of the creek erosion.

4.3 Conclusions

As made evident by this project, archaeological archival data can be used as a productive means to better understand the past and can often serve as a viable alternative to further excavation. This project attempts to fulfill the aspirations of post-colonial archaeological theory in making the research process and data accessible to the descendant community and by fulfilling the responsibility of a previous generation of archaeologists. Throughout this project, every effort has been made to “demystify” the data and to make Borden’s research process explicit (Smith 2006). This has been done with the aim of allowing for better evaluation of the current models and to opening avenues for further research. Furthermore, the approach of this project has been to view change in the context of Musqueam continuity. Though Borden concludes the Stsleax Phase at 1808AD, it is important to realize that the Musqueam people continue to live in this location, as they have for many generations.

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