APPENDIX D

Cultural Resources

DRAFT

CULTURAL RESOURCES SURVEY
FOR THE
DESERT CLAIM WIND POWER PROJECT
KITTITAS COUNTY, WASHINGTON

October 30, 2003

NORTHWEST ARCHAEOLOGICAL ASSOCIATES, INC
SEATTLE, WASHINGTON

DRAFT

CULTURAL RESOURCES SURVEY FOR THE DESERT CLAIM WIND POWER PROJECT KITTITAS COUNTY, WASHINGTON

Report prepared for

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1. INTRODUCTION

Desert Claim Wind Power LLC., is proposing to construct and maintain a wind energy facility in Kittitas County, Washington, approximately 8 miles north of the town of Ellensburg. Northwest Archaeological Associates, Inc. (NWAA) was retained by Huckell-Weinman Associates on behalf of Desert Claim Wind Power to conduct a cultural resources assessment of the project area as part of the SEPA review process. This report is provided in support of the SEPA application and provides documentation for information requested under SEPA checklist item *Historic and Cultural Preservation*. The work performed by NWAA was designed to address three areas of concern outlined under this checklist item:

13a. Identify places or objects on or adjacent to the project that are listed or proposed for listing on a historic register;

13b. Identify places or objects on or adjacent to the project that are of archaeological, scientific, or cultural importance, and;

13c. Indicate appropriate mitigation measures for historic or cultural resources.

In the course of providing information relating to the cultural resources of the project area, NWAA conducted prefield archival research that identified the locations of previously known prehistoric and historic cultural properties within the project boundaries and within a one-mile radius beyond the project boundaries. The prefield research was followed by an archaeological field survey that found and documented previously unknown cultural resources within the project area. The field survey also visited previously recorded sites within the project area to update site records and to assess current conditions.

The archaeological investigations were carried out in two phases. Phase I consisted of archival research, tribal coordination, and field study. Phase II was the analysis of results, site form preparation and preparation of this technical report. The last includes evaluations regarding the significance of the documented cultural resources within the project area. This report contains sensitive information regarding prehistoric and historic cultural resources and caution should be exercised regarding general access to the contents of this report.

1.1 Location and Description of Project

1.1.1 Location

The project is located approximately eight miles north of the City of Ellensburg in Kittitas County, Washington (Figure 1.1). The area of the proposed project encompasses 5237 acres located in the west halves of Sections 30 and 31 in T. 19 N., R. 19 E.; Sections 9, 20, 21, and 25, and portions of Sections 4, 17, 24, 26, 27, 28, and 29 in T. 19 N., R. 18 E.

1.1.2 Scope of Project

Project activities proposed by the proponent include placement and construction of up to 120 wind turbine generators, cabling, access road construction, and possible construction of support structures or substations. Ground disturbance destroys the relationships among artifacts and

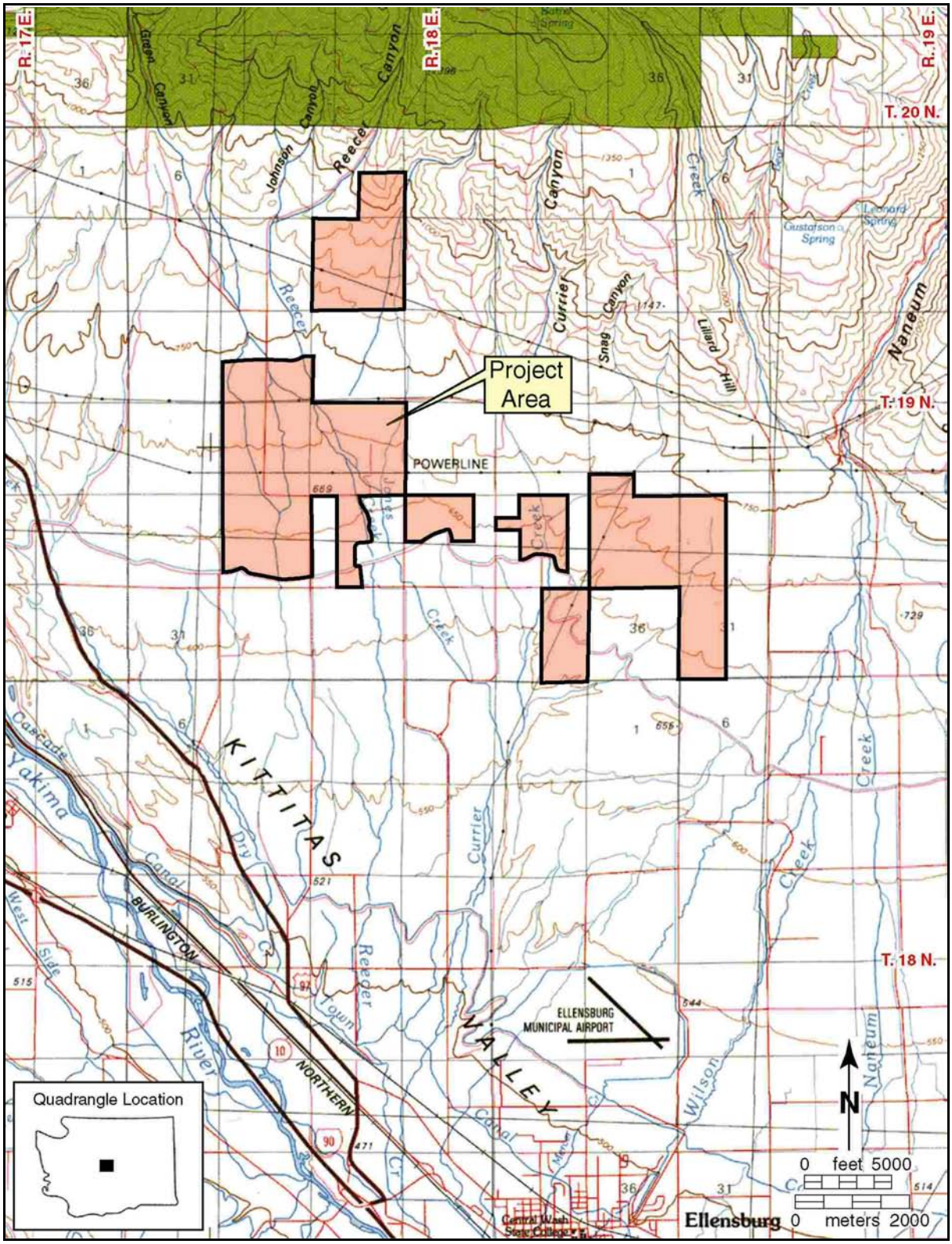

Figure 1.1 Project location (USGS Wenatchee, Wash., 1:100,000 scale, 1975).

features and their contexts and could cause the destruction of historic structures or buildings. Ground-disturbing activities will occur at most stages of infrastructure development, e.g., roads and tower foundations (including staging areas and work zones), the power collection system and substation, the interconnection system, meteorological towers, and the operations and maintenance facility. Depending on site conditions, construction of turbine foundations will create areas of surface and subsurface disturbance to a depth of from 8 to 35 feet deep and from 18 to 42 feet in diameter. The power collection system will also disturb surface and subsurface sediments. Installation of underground cable by trenching would require excavating an open trench 2 to 4 feet deep, laying cables in the trench, and then backfilling the trench; installation by plowing involves directly plowing the cable into the ground. Overhead connection cables and the construction of the transmission line require construction along a corridor 8 to 12 feet wide plus temporary laydown and work areas around the base of each pole. The poles would be placed in holes drilled by an auger. The extent of disturbance associated with the construction of the transmission line is currently not known, but construction procedures would entail drilling holes for the transmission structures, construction of the structures on site, and preparation of staging and work areas. The substation requires approximately 2 acres that will have to be cleared and graded. If the Operation and Management facility is located next to the substation, an additional 2 acres would be cleared and graded.

1.2 Report Structure

The following report presents the results of studies undertaken to identify and evaluate historic properties that might be affected by construction of various Desert Claim Wind Power structures, utilities, and facilities. The report is divided into six chapters that present the results of archival and background research about the natural and cultural setting, develop expectations, describe field methods and results, and conclude with recommendations.

The first two chapters, including this one, provide background information on the project regarding the natural and cultural history of the project area. Sections in these chapters summarize the region's geology, geomorphology, soils, climate, and vegetation and present an overview of the prehistory and history of the region. Chapter 2 also includes a summary of archaeological researches that have been conducted in the region. The cultural background includes a summary of the cultural history sequence used to organize the human prehistory of the south-central Columbia Plateau culture area and summarizes the ethnography, ethnohistory, and history pertaining to groups living in the vicinity of the project. Chapter 3 discusses expectations of finding historic and prehistoric archaeological materials and presents the conceptual framework used to organize the fieldwork. The methods employed to discover potential cultural resources are described in Chapter 4 and Chapter 5 summarizes the results of the archival research and field survey. The final Chapter 6 discusses the significance of the cultural resources identified within the Project boundaries and presents recommendations for their treatment.

2. NATURAL AND CULTURAL SETTING

2.1 Natural Setting

The Desert Claim Wind Power project is located in Kittitas Valley at the western margin of the Columbia Basin physiographic province in northwest Kittitas County (Waitt and Swanson 1987). The valley is located in the upper Yakima River basin near the western limits of the Columbia River Basalt Group (CRBG) and is bounded to the north and west by the Wenatchee Mountains and the Cascades Range, respectively. To the south is the Yakima River and Manastash Ridge farther south; to the east is the Columbia River. Local outcrops of basalt belong to the flows of the Grande Ronde Member of the CRBG extruded during the Miocene between 17.0 and 15.5 million years ago. The valley is the topographic expression of a broad syncline formed by downwarped rocks and sediments of the CRBG and the Ellensburg Formation. (The Ellensburg Formation is conformably intercalated with flows of the Grande Ronde Basalt and consists of volcaniclastic sedimentary rocks that range from siltstone to cobble conglomerate composed of silicic to intermediate volcanic clasts.) The syncline is flanked by the Wenatchee Mountains to the north and Manastash Ridge south of the Yakima River. These two ridges are located at the northern end of a set of generally east-west-trending anticlines, known as the Yakima Fold Belt, that ranges along the west side of the Columbia Basin (Reidel et al. 1994; Waitt 1979; Walsh et al. 1987).

The surface geology of the Kittitas Valley is composed of Pliocene and Pleistocene gravels underlying alluvial fans and terraces fringing the base of the Wenatchee Mountains. Small outcrops of the underlying Grande Ronde basalt rise up through these alluvial gravels and the older gravels have been prograded by younger fans and colluvium; Holocene fans overlie all the terraces (Waitt 1979; Walsh et al. 1987).

In the western Columbia Plateau, the Yakima River and its tributaries deposited the Pliocene Thorp Gravel that unconformably overlies the Ellensburg Formation in the Kittitas Basin (Fecht et al. 1987). The Thorp gravel ranges in age from 3.8 to 4.4 million years ago and consists of main stream alluvial deposits and tributary deposits. The tributary deposits typically form terraces that grade to the main stem terraces but tributary alluvial fans occasionally spread over main stream surface during periods of aggradation. Like the surface of the main stream terrace, there is no evidence that the Thorp tributary terraces have ever been buried by anything but a veneer of incidental loess and tephra (Waitt 1979).

The Pleistocene Epoch began about 1.8 million years ago and persisted to the beginning of the Holocene about 10,000 years ago. The period is characterized by major environmental changes accompanying long periods of major accumulations of global ice in the form of continental ice sheets; at their maximum extent, these ice sheets covered up to 30% of the earth's surface. During the Late Pleistocene, 130,000 to 10,000 years ago, the Cordilleran ice sheet (the western and smaller of the two North American ice sheets) advanced and retreated several times; during the latest glacial maximum the ice sheet began advancing about 17,000-18,000 years ago and retreated abruptly with the onset of climatic warming about 14,000 years ago (Easterbrook 1993). The ice sheet was formed by the coalescence of valley glaciers in the mountains of British Columbia and flowed south overriding low mountain ranges in northern Washington, northern Idaho, and northwestern Montana. In north-central Washington the ice surface sloped from over 7000 feet (2135 m) elevation near the international border, where the ice was about 6000 feet (1830 m) thick, to about 1300 feet (400 m) elevation some 75 miles (120 km) to the south where the ice terminated.

The Cordilleran ice sheet advanced southward as lobes along trunk valleys but only the Okanogan lobe advanced far out onto the Columbia basin. The last-glacial Okanogan lobe scoured the basalt surface, built a large terminal moraine during its maximum stand, and formed many moraines, eskers, and other depositional forms during ice recession (Waitt and Swanson 1987:413). During the Pleistocene, glaciers temporarily plugged drainages, diverted the Columbia River to more southern courses, and impounded meltwaters in glacial lakes but had minimal and temporary effects on the drainage system in the Kittitas Valley. Instead, till and outwash accumulated as numerous small Cascades alpine glaciers descended as far as elevations of 2700 to 3000 feet into the Yakima and Naches River basins. Most glacial sediment accumulated during three Cascadian alpine glacial events: the Lookout Mountain Ranch Drift (older than the Kittitas Drift), Kittitas Drift (about 130,000-140,000 years old) and the Lakedale Drift (about 10,000-20,000 years old). Glaciers originating near Snoqualmie Pass advanced eastward through the upper Yakima River basin to about seven miles beyond Cle Elum, scouring the valley and deepening the Yakima River Canyon (Waitt 1979). Both nonglacial alluvium and glacial outwash were spread downvalley from Cascades moraines and consist of moderately to well-sorted sandy gravel comprising rounded stones of diverse volcanic, metamorphic, plutonic, and sedimentary rock types derived mostly upstream of the Kittitas Valley. Tributary alluvium is graded to the level of the deposits ranged along the syncline axis and is easily distinguishable by its consistent content of subrounded to subangular basaltic gravel. The tributary fans head along the mountain front at the mouths of canyons, but on interfluves merge upslope with steep fans of angular basaltic colluvium. Sand and silt layers, which probably represent fluvial overbank deposits, and loess occur mainly as minor beds (Waitt 1979).

Patterned ground occurs in the vicinity of the project area in the form of mounds and stone stripes. Mounds (also known as “biscuits” or “mima mounds”) are isolated, spatially well-bounded, circular piles of almost gravel-free loam that were observed in a few places on interfluvial flats in the project area. Stone stripes, elongate patterns of surficially exposed rock usually aligned with the direction of slope, were observed on the foothill slopes just north of the project area. Patterned ground features like these are characteristic of, but not necessarily confined to, mantles subject to intensive frost action (Kaatz 1959; Washburn 1956). The major theories of patterned-ground formation emerging from studies on the Columbia Plateau are: (1) they are the result of normal water erosion, (2) they are the product of burrowing animals (Cox and Scheffer 1991), (3) they reflect weathering controlled by the jointing pattern in the basalt bedrock, or (4) they are the consequence of intensive frost action under a periglacial climate (Kaatz 1959). (For another summary of patterned ground and its origin, see Washburn 1988.) Kaatz’s research on mounds on the south slopes of Manastash Ridge indicates an apparent correlation between the occurrence of mounds and the distribution of shallow eolian deposits. Sorted stone features, however, not only occur in conjunction with shallow eolian deposits but are also found on recent lava flows (Kaatz 1959). Kaatz observed patterned-ground features on 1) basalt bedrock, 2) dissected surfaces underlain by sedimentary conglomerates and sandstones of the Ellensburg Formation, and 3) on the moraine of the valley glacier which extended farthest east into Kittitas County. Mounds usually did not occur where the soil mantle is more than six feet deep over the weathered basalt surface. The ground between mounds are sorted stone nets and polygons and in early spring the surface between the mounds is a “sticky mass of clay and slippery rock fragments, and vehicles will become mired. During the summer the same surface will assume the character of a firm rocky roadbed” (Kaatz 1959:150).

The mounds may represent remnants of formerly uninterrupted aeolian deposits that were subsequently eroded. The material removed may have contributed to the loessial mantle now found at the east end of the Columbia Basin in the Palouse area. Grain-size analysis of aeolian deposits across the basin show that the sand content of the loess decreases with distance eastward from Quincy, suggesting that the Quincy Basin was a significant source area for the loess, along with the Pasco and Umatilla Basins. Lesser amounts of sediment were probably contributed by the Yakima and Walla Walla Valleys. Paleontological sites containing mammal bones indicate the main body of loess in the Palouse is Pleistocene in age with most of the loess predating the latest Missoula floods. Mount St. Helens tephras incorporated in the loess indicate minimum times of deposition ranging from 36,000 to 37,600 years ago. Busacca (1991) hypothesizes that earlier Pleistocene cataclysmic floods are ultimately responsible for the formation of the Palouse by making available large amounts of freshly deposited sediment available to the prevailing winds so that each flood triggered a new cycle of loess deposition.

The surface in the project area is underlain by gravels from the Kittitas Drift and the Thorp Gravels. A distinct break in surface topography marks the boundary between the eastern area of the project underlain by the Thorp Gravels and the surface underlain by the younger Kittitas Drift in the west portion of the project (Figure 2.1). Although vegetation cover and local relief do not differ markedly between the two surfaces, soils are often sensitive to changes in substrate conditions (Jenny 1991[1941]). The distribution of soil bodies on the soil map accompanying the 1945 soil survey shows the spatial extent of the two surfaces underlain by the Thorp Gravels and the Kittitas Drift (Figure 2.2).

Figure 2.1. View southeast from Katie Lane showing scarp between Thorp Gravels and Kittitas Drift (foreground)

Overall topography in the project area is relatively flat and open and exhibits a gradual north-south elevation drop of about 1000 feet over a distance of approximately five miles. Relatively low-gradient streams flow generally north to south across the Project and form shallow linear depressions in the otherwise relatively flat landscape (Figure 2.3).

2.2 Climate, Vegetation, and Soils

The Kittitas Valley is one of the driest regions in the Pacific Northwest due to the blockage of eastward moving marine air masses by the Cascades Range west of the valley. Moisture levels deteriorate rapidly on the eastern slope of the mountains within a few miles of the Cascades crest so that most of the land east of the Cascades is dry with a short growing season and low summer precipitation. Some marine incursions occasionally do occur, but a continental-type arid to semiarid climate prevails that is characterized by low levels of precipitation, warm-to-hot dry summers, and relatively cold winters. Annual precipitation at elevations between 2000 and 4000 feet averages 22 inches, with much of it falling as snow; in Ellensburg, the average annual precipitation is 8.5 inches and occurs mostly as snow between November and February.

Native vegetation in the project area lies within the area of the Columbia Basin occupied by the big sage/bluebunch wheatgrass zonal association. The vegetation communities in this association occupy the central driest part of the Columbia Basin and extend west to the foothills of the Cascade Range. The vegetation dominants are shrubs such as big sagebrush, stiff sagebrush, low sagebrush, and shadscale accompanied by large perennial grasses including bluebunch wheatgrass, Idaho fescue, giant wildrye, and Thurber needlegrass. The big sage/bunchgrass association is the most extensive element in the steppe mosaic of eastern Washington with essentially identical communities widely distributed in British Columbia, central Oregon, and southern Idaho and Montana (Franklin and Dyrness 1973).

Successional changes are most often associated with grazing, fire, or cultivation. Grazing most seriously affects the larger perennial grasses since they are preferred by livestock but are not adapted to withstand heavy grazing pressure. Big sage is the only vegetation dominant in the zone that is seriously affected by fire. Big sage is often completely killed by range fires, and although the other remaining vegetation dominants are able to regenerate from parts that survive underground, big sage must reoccupy the site by invasion and gradual expansion. Fire and overgrazing can result in development of an annual rangeland dominated by the exotic cheatgrass (*Bromus*). In prehistoric times, sagebrush was probably not as abundant as it is now because of fires.

Primary productivity in the big sage/bunchgrass zone is limited because most of the precipitation in the region falls during the fall and winter so that little moisture is available to plants during the growing season. As a result, carrying capacity for herbivores in this environment is limited and is expected to be lower than in the forested areas that border the western margins of the Basin. The abundance of animal biomass probably increases directly with precipitation (and elevation) up to the margins of the closed forest within the Basin.

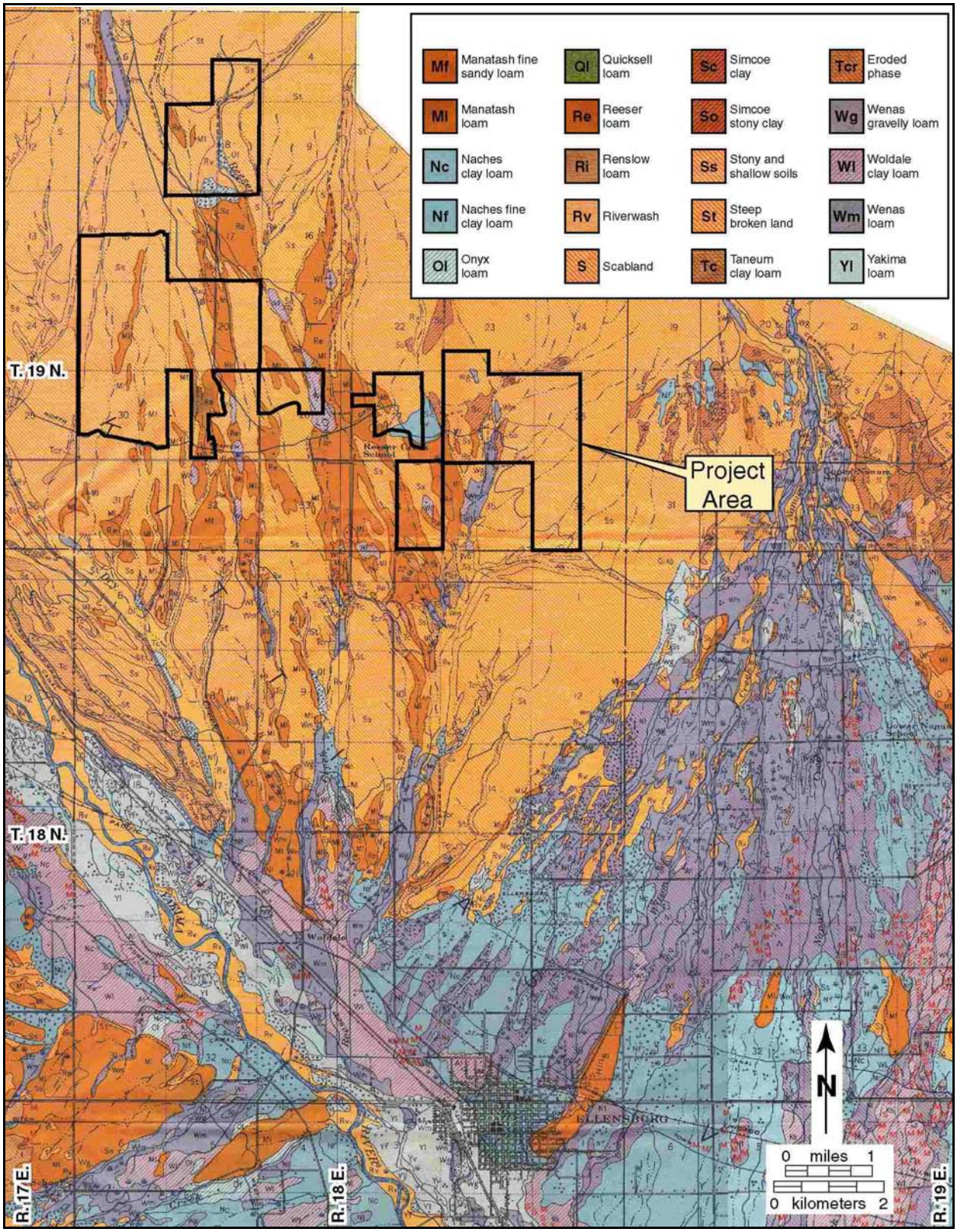

Figure 2.2. 1945 Soil Map of Kittitas County. Soil bodies are elongated in direction of major distributary channels on fans in vicinity of project area.

Figure 2.3. View south from T. 19 N., R. 19 E., Section 30, NW¼, showing topography of surface of Thorp Gravels.

The last official county soil survey was published in 1945 on the basis of fieldwork completed in the late 1930s. Soils in the project area belong to the Manastash, Woldale, Reeser, Naches, and the Simcoe series, with the bulk of the project area given over to shallow stony soils locally called Scabland (Smith et al. 1945). The shallow stony soils typically consist of a thin clayey layer overlying cemented gravels of the Kittias Drift or the Thorp Gravels.

2.3 Fauna

Steelhead trout and salmon were once numerous in the Yakima River and its tributaries. Chinook, coho, and sockeye salmon traveled up the Yakima and Naches rivers to spawn, and sockeye spawned in Cle Elum, Kachess, and Keechelus Lakes near the headwaters of the Yakima River, and in Bumping Lake in the Naches River watershed. Above the mouth of the Yakima River the total quantity of potentially exploitable fish diminishes with distance up the Columbia River and the number of spawning tributaries entering downstream. Resident fish, including Dolly Varden and rainbow trout, whitefish, and lampreys, also live in streams and lakes of the area (Schalk 1982).

Mule deer, antelope, mountain sheep, and bison probably constituted the principal large herbivores of importance in the prehistoric economies of this region. Mountain sheep require

rock faces in their habitat and may have been restricted to scabland tracts and rugged basalt faces along the Columbia River and the major canyon systems tributary to it within the central Plateau. The hunting of ungulates in upland forests during the fall generally is assumed to be a part of the "ethnographic pattern" in the Plateau but earlier uses of upland environments are still poorly understood archaeologically (Schalk 1982:7).

Bison remains have been recovered from archaeological contexts in the southern Columbia Basin that have been dated through most of the Holocene Epoch, though it is generally believed that they were always present in relatively limited numbers (Schalk 1982). Shroedl notes an apparent increase in abundance between 4000 and 1500 B.P. It is expected that bison, like several other herbivores, would be more abundant during wetter intervals in the past, and the suggested increase in their frequency in post-Altithermal sites may reflect such a climatic episode (Schroedl 1973).

2.4 Paleoenvironments

The retreat of the Cordilleran ice sheet saw the establishment of pioneer tundra-like vegetation associations on the newly exposed terrain. Pollen data retrieved from Bonaparte Meadows in the Okanagan Valley (Mack et al.) to the north indicates that the initial species to arrive in the newly deglaciated terrain were dominated by non-arboreal plants such as *Artemisia* (sagebrush) and Gramineae (grasses) accompanied by low amounts of pollen from trees such as whitebark pine (*pinus albicaulis*) and western white pine (*pinus monticola*). Mack et al. (1979) surmised that the area around Bonaparte Meadows was characterized by open vegetation in which trees were a minor constituent. The presence of pollen from whitebark and western white pine indicate the climate was cooler and moister than today.

In the southwestern Columbia Basin, pollen retrieved from Carp Lake shows that the southwestern basin during the last glacial maximum (about 23,500 to 10,000 years ago) was characterized by periglacial steppe or tundra vegetation with climate conditions too cold to support forests at low altitudes. Besides the absence of temperate aquatic taxa, high amounts of spruce pollen imply that subalpine communities grew closer to the site than today but pine or spruce parkland was probably not widespread in the Basin because cold and dry conditions would have limited tree growth (Barnosky 1985). A marsh developed at the lake around 13,500 B.P. and was soon followed by the arrival of temperate riparian taxa. Modern steppe is inferred to have developed by 10,000 B.P. with the onset of warmer conditions (Barnosky 1985).

The pollen records from the Okanogan highlands show that warming was delayed until after 10,000 B.P.; as late as 9000 B.P. cool humid conditions persisted in some valleys along the northern tier of the basin. Pollen data from the northeastern Basin indicate cool conditions prior to 9500 B.P. Mesic conditions obtaining just south of the ice sheet apparently did not extend to the southwestern part of the Basin and the central Columbia Basin is inferred to have been a dry open landscape (Barnosky 1985).

Following the early colonization of the newly deglaciated terrain, a period of warming ensued and reached its maximum in the early Holocene between 12,000 and 6,000 years ago (Whitlock 1992). Beginning about 10,000 years ago and persisting to about 6900 B.P., the early vegetation assemblages that had colonized the area around Bonaparte Meadows in the Okanogan Highlands were replaced by sagebrush, grasses, and lodgepole and ponderosa pine, with sagebrush the dominant vegetation. The presence of these species suggest the

development of a sagebrush steppe under a climate regime characterized by conditions that were warmer and drier than at present. Mack et al. (1979) also noted an erosional hiatus of about 1000 years between about 8300 B.P. and 7000 B.P. that may indicate a period of severe drought in the vicinity of Bonaparte Meadows. The record at Simpson Flats also parallels trends at Bonaparte Meadows during the early part of this period, but the rest of the pollen record is interrupted by a poorly age-bracketed erosional hiatus that may correlate with the gap observed at Bonaparte Meadows (Mack et al. 1979).

The sudden increase in pine pollen around 8500 B.P. at Carp Lake in the southwestern portion of the basin suggests that forests developed around the lake as the forest/steppe ecotone moved downslope to its present position south and east of the lake. However, this phase of postglacial cooling is not well supported by pollen data from other localities. For example, from 6900 B.P. to 4800 B.P. Bonaparte Meadows to the north saw continued and increasing warming climate indicated by abundant sagebrush and grass pollen accompanied by few (rare) conifer pollen. Pines were probably located much further upslope than they are today and alluvial bottoms and stream channels below about 3281 feet (1000 m) elevation were probably dominated by sagebrush (Mack et al. 1979). During this period, the northern frontier of the Columbia Basin sagebrush-dominated steppe was probably between 30 miles (50 km) to 60 miles (100 km) beyond its modern limit (Mehringer 1985; Whitlock 1992). Continued warming is also indicated in the pollen record at Simpsons Flat, but the local vegetation appears to have been dominated by Ponderosa pine with a grass understory, similar to the composition of the modern *Pinus ponderosa* Zone (Franklin and Dyrness 1973).

Climate conditions changed rapidly in the Pacific Northwest beginning about 5000 years ago and is recorded by sharp increases of fir and spruce pollen suggesting conditions had quickly become cooler and moister. About 4800 B.P. swift climate change at Bonaparte Meadows in the Okanogan Valley is indicated by a rapid drop in the amount of sagebrush pollen (sagebrush representation drops almost completely out of the record) while lodgepole and ponderosa pine pollen, and possibly Douglas fir, shows dramatic increases. Mack et al. (1979) believe these changes represent the formation of the modern Douglas fir forest in the Okanogan valley and signals a change to less-warm and dry conditions; however, there is no evidence for a short-term reversal to slightly cooler and moister conditions coincidental with neoglaciation observed at other localities in the Pacific Northwest (see also (Mehringer 1985, Whitlock 1992). At Simpsons Flat (Mack et al. 1978) a brief reversal in climate to slightly cooler moister conditions between about 4500 and 3100 B.P. is denoted by increases in fir and spruce pollen (probably from grand fir and engelmann spruce). This brief period of cooler climate is probably coincidental with the onset of neoglaciation.

2.5 Cultural Setting

2.5.1 Prehistory

The culture-historical syntheses that have been developed for the Columbia Plateau in general, and the mid-Columbia region in particular, are derived primarily from data retrieved during excavations in deeply stratified archaeological sites in alluvial settings along the Columbia and Snake Rivers. The focus on excavation of sites in riverine settings was due to the need to establish a chronological framework for understanding culture change in the Plateau and by the fact that most of the fieldwork conducted under the auspices of professional archaeological research in the Columbia Basin was carried out as “salvage” prior to imminent inundation by

large hydroelectric public works projects (Galm et al. 1981). Much of the contemporary understanding of the archaeological record is still couched in terms of these early historical sequences. Several of these have been published (see Galm et al. 1981 for a detailed discussion of these schemes) but the sequence developed for the Vantage region will be followed in the following discussion of the major cultural changes on the Plateau in the last 10,000 years.

The earliest inhabitants of North America, known as Paleoindians, are believed to have arrived between 13,000 and 12,000 years ago. Their presence is marked by the appearance of a distinctive fluted spear point known as Clovis. The earliest radiocarbon ages associated with these types of points across the West date to about 11,500 years ago. The closest known occurrence of Clovis points is north of the project area near the town of Wenatchee where Clovis points were found in direct association with Glacier Peak volcanic ash dating to 11,250 B.P. (Mehringer 1989). The Clovis people are believed to have been highly mobile hunters whose economy was primarily focused on hunting mega-fauna species (such as the mammoth) that became extinct soon after the end of the last glaciation. Other projectile points, such as large stemmed, shouldered, and lanceolate styles, also are found in western North America and closely follow, or are contemporaneous with, the fluted points. In the Plateau, stemmed and lanceolate projectile points known as Windust or Western-stemmed have been found in sites and dated between 11,000 and 8000 years ago.

The early Windust phase of occupation in the Plateau has been documented by components ranging in age from 11,000 to 8000 B.P. at Windust Caves, Marmes Rockshelter, Granite Point, and Lind Coulee. Artifact assemblages considered typical of this phase include lanceolate and oval knives, a distinctive shouldered point known as Windust, large scraper planes, and utilized flakes. Edge-ground cobbles, bone awls, needles and atlatl spurs, and antler and shell artifacts are often found in the assemblages.

The Vantage phase is a Plateau-wide phenomenon that dates from about 8000 to 4500 B.P. and is considered to correspond to the Cascade phase defined on the lower Snake River by Leonhardy and Rice (1970). Artifact assemblages associated with this time period include the lanceolate “Cascade” style project point, lanceolate and triangular knives, scrapers, edge-ground cobbles, atlatl weights, bone awls, needles, and atlatl spurs. Few Vantage phase sites have been found in upland settings, suggesting that the major economic focus of people living during the Vantage phase was on the major river valleys. The time span of the phase coincides with the warmer Altithermal climatic period which may have made the uplands drier and a less productive hunting and gathering ground. Cascade-style projectile points have been found by private collectors around the shores of Lake Keechelus and Kachess (DePuydt 1990).

The Frenchman Springs phase persisted from about 4500 to 2500 B.P. and is characterized by an apparent increase in population, the proliferation of pithouses, and greater utilization of upland environments compared to the prior Vantage phase. Such apparent cultural shifts may be a response to increased mesic conditions following the early postglacial warming trend. Housepit sites are found along the Columbia River and its tributaries as well as on terraces of small streams, at comparatively high elevations, and out in the middle of the basin. Other sites and isolated artifacts are found on all the major landforms and ecological zones of the southern Plateau. The presence of large, nonportable plant processing mortars in upland sites indicate a more intensive use of upland environments. Artifact assemblages include greater proportions of crypto-crystalline (CCS) material as toolstone and include greater numbers of groundstone and

cobble tools. Stemmed and corner-notched points predominate and hopper mortars and pestles become much more common. Net sinkers indicate greater emphasis on fishing than in the preceding phase. These traits are considered to represent the early emergence of the Plateau cultural pattern which continued until the historic period (Ames et al. 1998; Galm et al. 1981).

The Cayuse phase begins around 1000 B.P. with the appearance of small, corner-, basal-, and side-notched projectile points. This phase is marked by an increase in population indicated by a shift to larger, semipermanent, nucleated villages along the Columbia and Snake Rivers, an increased emphasis on fishing, and the continued exploitation of upland resources. This is considered to represent the full development of the ethnographic pattern that persisted up until the arrival of the horse (Ames and Marshall 1980-1981). Cayuse Phase sites have been found in a broad array of environmental settings and landforms such as ridgelines, natural springs, mountain benches, and small tributary streams in the Cascades Range. A number of specialized functions and seasonality have been ascribed to these sites including root gathering, hunting, fishing, and lithic quarrying. Artifact assemblages consist of end scrapers, lanceolate and pentagonal knives, net weights, pestles, grinding stones, hopper mortar bases, and cobble implements. Wood shafts, cordage, and mats have also been recovered along with bone shafts, bone beads, bone points, and shell (DePuydt 1990).

The horse was introduced about 200 years ago at the end of the Cayuse phase bringing in its wake new technology and tools, and a greater degree of mobility that allowed groups such as the Yakama to travel west down the Columbia River to Fort Vancouver and east to the Plains. Prior to direct contact with whites, European and American trade goods such as metal knives and brass bells made their way to central Washington from the Pacific coast and the Plains through native trade networks. Along with the horse and trade goods, disease also entered the Columbia Basin with devastating effects. The earliest smallpox epidemic probably spread westward from the Missouri River in 1775; a measles epidemic in Yakama territory in 1852-1853 killed two out every five Yakama. Between 1805 and 1853, the Yakama population declined from an estimated 7000 people to 2000 (Campbell 1989; Schuster 1990:43-51).

2.5.2 Ethnohistory and Ethnography

The project falls within an area known as the Plateau culture area (Walker 1998) which is broadly defined as the area drained by the Columbia and Fraser Rivers. The region is bordered on the south by the Great Basin culture area, the Northwest Coast to the west, the Subarctic to the north, and the Plains on the east. The Plateau encompasses several large linguistic groups – the Interior Salish and the Sahaptin include the most members, but other smaller groups are represented by the Athapaskans, Kootenai, and Cayuse. Elements of Plateau cultural patterns include linear settlement patterns in riverine settings, reliance on a diverse resource base that incorporated anadramous fish and extensive game and root resources, a complex fishing technology similar to the one employed on the Northwest Coast, mutual cross-utilization of subsistence resources among the various groups comprising the populations of the area, extension of trade networks through institutionalized trading partnerships and regional trade fairs, limited political integration, and relatively uniform mythology, art styles, and religious beliefs (Walker 1998).

The Yakama, Kittitas, Klikitat, Taitnapam, and Wanapam were closely related Sahaptin speakers but politically independent bands and villages of families who once occupied

contiguous territories in the south-central part of the state of Washington. The project area falls within the traditional use area of the Kittitas who occupied a number of villages along the upper Yakima River near the project area. Four of these villages are located near the project area (Table 2.1). The largest settlement was about one mile upriver from the present town of Thorp across from the mouth of Taneum Creek. Four miles below Thorp was a village of about 400 people and another of approximately the same size was located about seven miles northeast of Ellensburg. Another major village was near the mouth of Teanaway Creek. Two miles below Ellensburg on the west side of the Yakima River was Kittitas, which was a favorite summer gathering place (Ray 1936; Schuster 1998:327-328; Spier 1936).

Table 2.1 Nineteenth Century Kittitas Villages in the Vicinity of the Desert Claim Wind Power Project.

VILLAGE NAME	DESCRIPTION
na′nam	About 400 people located on Naneum Creek approximately 7 miles northeast of Ellensburg.
yum*i*′c	About 400 people located about 4 miles below Thorp on the east side of the Yakima River.
kla′la	About 500 people located about 1 mile above Thorp opposite the mouth of Taneum Creek.
tia′naw*i*ns	About 50 people located at mouth of Teanaway Creek.

There is some uncertainty regarding the distribution and identity of peoples occupying the upper Yakima River basin during the 19th century in part due to the position of the Kittitas Valley on the boundary between the two major linguistic groups of the Interior Salish speakers to the north and Sahaptin speakers to the south. As a result, the Sahapatin-speaking Kittitas are considered most closely related linguistically to the Yakima to the south but maintained close relations with the Interior Salish-speaking Wentachi to the north.

Evidence introduced at the Indian Claims Commission hearings (Chalfant 1974) based on fieldwork by Teit was used to propose that most of the area north and west of the Columbia River was occupied by Salish speakers during the early and mid-19th century. When disease decimated their population these people were subsequently gradually displaced or absorbed by Sahaptin speakers. Early observers in the area generally designated these groups by the name *Pisquows* and the term was used to refer to all people living along the Columbia River from about the Methow River south to Priest Rapids. Later usage tended to be restricted to a single group living on the Wenatchi River. It appears that there were originally six bands of *Pisquows*, four who lived south of the Wenatchee Mountains and two on the east side of the Columbia River. The four groups who lived south of the Wenatchee Mountains were found by Lewis and Clark on the Klictitat River and were subsequently observed on the upper Yakima River between Selah Creek and Kachess Lake; the principal group was the *Pcwanwapam* who were centered around Ellensburg(Chalfant 1974). Chalfant (1974) proposed that these groups be called the *Pisquows proper* for the period of the early 19th century. Their gradual assimilation into the Sahaptin stocks, and their more recent identity as Kittitas or *Pcwanwapam*, as well as their inclusion in the Yakima Treaty under the term *Pisquows* distinguishes them from the Wenatchi proper and other Salish bands on the Wenatchee, Entiat, and Chelan Rivers. Their distinction from Wenatchi is further seen in the 1855 treaty itself, in which the *Wenatshapam* and *Pisquouse* are named separately, although the terms are often applied to the same group (Chalfant 1974:331).

Winter villages were usually located along the Columbia River and its major tributaries and tended to be located near the confluences of larger tributaries because of milder winter

temperatures and availability of firewood. In the Yakima Valley, villages followed this same trend and were usually located where tributaries joined the river. Villages were rarely moved and, though the number of people living in them varied from year-to-year and season-to-season, villages tended to be characterized by stable populations over the long run. The number of inhabitants in a village varied throughout the year depending on locally available resources. For example, some villages near important root-digging grounds, such as Kittitas, were most populous in May-June. Another village near the south end of Lake Cle Elum was an important summer camp where people congregated in June and July to fish for salmon (DePuydt 1990).

The annual round in the Columbia Basin during the ethnographic period was organized around the winter village and summer stays at various resource locations. In the spring groups who had wintered together dispersed and headed to root gathering, hunting, and fishing locations. During the earliest part of the spring season, root collecting was the primary focus and people living in the Kittitas Valley would have been able to find root plants such as *Lomatium* on rocky slopes and bitterroot in the hills to the south, north, and east of the valley. Camas was available in meadows where more moisture was available (Ray 1936). The fishing season began when the spring chinook salmon run started and fish, including chinook, sockeye, and summer steelhead, were harvested through the summer. Other food items gathered during the summer were golden currant, gooseberry, dogwood, serviceberry, and chokecherry. During the fall hunting forays to the uplands were organized (DePuydt 1990). Food gathered and processed for storage was brought back to the winter village and stored.

The Kittitas, Lower Yakima, Priest Rapids Wanapum, Wenatchi, and the Columbia would gather at the villages of *N'camca'mcin* and *Cilaxan* near the present town of Kittitas to gather camas, trade, dance, and race horses. After meeting at these camas grounds, the Kittitas would either move to Wenatchapam on the Wenatchee River near Leavenworth for the second major run of salmon or to various spots along the Yakima River and at the mouths of Keechelus, Kachess, and Cle Elum Lakes. The outlet of Cle Elum Lake was the most popular of the upper Yakima River fishing locations with as many as 1000 people congregating in July (DePuydt 1990; Ray 1936).

Except for the fishing camps, summer (or temporary) camps were located in the uplands or open prairie areas. The preferred shelter used in these camps was the conical mat house constructed as a tipi-like framework of poles covered with tule mats. The conical mat house was used during the spring, summer, and fall harvesting periods.

The effect of White contact upon the Indians of Washington was, of course, tremendous. Villages were decimated by newly introduced diseases, food resources were destroyed or reduced so materially by hunters and settlers that tribes frequently starved, and their best land was taken by homesteaders (Smith 1953).

By the 1850s Yakama political influence had coalesced around two groups separated by Wenas Creek as a response to threats of white encroachment. South of the creek lived the Lower Yakama, led by Kamiakin and his brothers. To the north were the Upper Yakama, or Kittitas, led by Teias and Owhi (Schuster 1990). Such consolidation of influence probably contributed to the shape of the treaty negotiations with Isaac Stevens during the Walla Walla Council at Camp Stevens in 1855. The result of the treaty was the new Yakama Nation comprised of 14 formerly independent bands or tribes which were thereafter treated as if they were a single political entity (Schuster 1990).

According to the treaty's terms, the people of the Yakama Nation ceded 29,000 square miles to the U.S. government and retained a tract of about 2,000 square miles for their "exclusive use and benefit". The government promised to establish two schools as well as two blacksmith shops, a gunsmith shop, a carpenter's shop, a wagonmaker and plowwright's shop, a sawmill, and a flour mill. A doctor and a hospital were also provided (Schuster 1990).

2.5.3 History

Settlement began gradually in the Kittitas Valley during the mid-nineteenth century, encouraged somewhat by passage of the Donation Land Act of 1850 and the Homestead Act of 1862 but mostly by mining booms in Idaho and southern British Columbia. The first real influx of settlers into Kittitas Valley was in 1869 following discovery of gold in Swauk Creek in 1867. By 1875 claims were being worked along the Yakima and Cle Elum Rivers and Ellensburg began to take shape as a major supply center for mines in the region during the 1870s and 1880s.

2.5.3.1 Stock Raising

Mining activity in the early 1860s stimulated the livestock business in the Pacific Northwest, and during the late 1860s and the early 1870s there was a steady movement of cattle from western Oregon to the grass lands of eastern Oregon and eastern Washington. However, cattle prices started to drop in 1872 and low prices persisted until the end of the 1870s; at the same time, sheepmen and farmers were arriving in the region and successfully agitating against large cattle herds running on open range. By 1880 free range in eastern Washington had virtually disappeared.

Cattle were first brought into Yakima Valley in 1861, and between 1861 and 1869 cattle drives passed through the Kittitas Valley to the Cariboo mines on the Fraser River. Beginning in 1869 and persisting until 1879, Yakima cattle were summer grazed in the Kittitas Valley and then driven over Snoqualmie Pass in the fall to Puget Sound markets. No hay was put up for winter feed and subsequently heavy losses were experienced during the severe winter of 1880-1881 (Whitley 1949). During the period 1861-1881, the typical farmstead consisted of a cabin, a corral, and an orchard. Gardens and small grain fields were planted but the practice of storing hay for winter feed did not become general until after the disastrous winter of 1880-1881 (Whitley 1949:24).

The devastation wreaked on the cattle herds during the winter of 1880-1881 spelled the end of the open range. In the Kittitas Valley, stockmen began to irrigate alfalfa and clover to put up winter feed for the cattle. As the markets in the mining districts dried up, cattle were increasingly driven to Puget Sound or to the Willamette Valley. Some cattle were also shipped to Montana to stock the growing cattle industry in eastern Montana (Oliphant 1932). Moving cattle out of the valley to other markets was made much easier when the Northern Pacific mainline was constructed through the valley in 1886 on its way to Tacoma. Ellensburg was made the headquarters for the Cascade Division of the NP and the region experienced another influx of, mostly urban, population. The Chicago, Milwaukee, St. Paul and Pacific railroad completed its transcontinental line through the valley and over Snoqualmie Pass in 1909.

Stock driveways were established to uplands along ridgelines and other easily traveled routes to move livestock from winter feed areas to summer pasturage. Due to overgrazing by cattle,

sheep became more common on degraded rangeland and eventually became more important than cattle as they fared better in the mountains and were more efficient grazers.

As late as the turn of the century the winter range of grazing lands in the basins draining the eastern Cascades slopes were still considered to be in poor condition. The better portions were fenced, but the rest had been grazed to a point where it was almost impossible for cattle to make a living, and sheep could find only a few weeks of grazing. Improvement in range conditions from 1903 to 1952 was instigated by ownership and control of the range through fencing, mechanized farming, and land conservation practices. The most influential of these three factors was the reduction of grazing pressure as horses were replaced following the introduction of mechanized farming (Chohlis 1952).

2.5.3.2 Agriculture

It took some time for early arrivals in Kittitas Valley to adapt to the fact that the valley is, in fact, arid. Some of the earlier farmers, being from the Willamette, Walla Walla, or Klictitat areas, tried to raise wheat and other crops more suited to those areas (Nesbit and Gates 1946) but by 1905, acres planted in wheat had diminished dramatically and were replaced with high-quality timothy hay which was in great demand in the Puget Sound area. Orchard trees were also discovered to do well in the valley if water could be supplied so that apples, pears, and other temperate fruits and vegetables were planted (Figure 2.4).

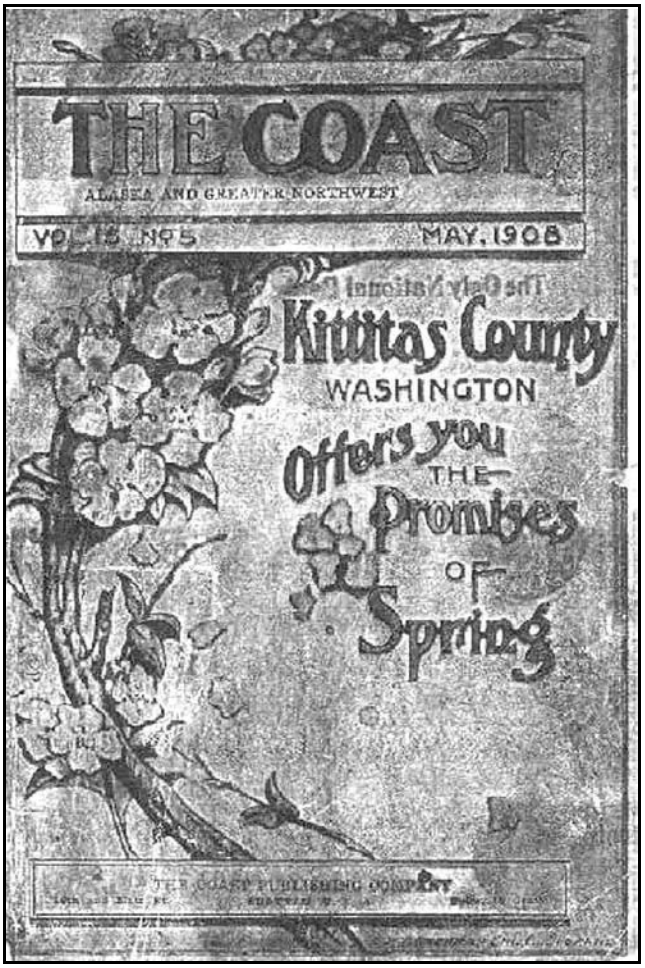

Figure 2.4. A 1908 magazine cover advertising Kittitas Valley.

Partially irrigated land in the valley derives from creek rights, but the water from this source gives out usually by the middle of June and it was quickly observed that the major stumbling block to the development of agriculture was the lack of moisture during the late summer drought. Early irrigation systems were simply diversion of creeks into private or partnership ditches but as more complex and expensive projects were required to respond to the demand for more irrigated acreage, private irrigation companies were organized by local farmers and bankers. Prior to involvement of the Bureau of Reclamation in the irrigation projects, the irrigation of Kittitas Valley was by private means. The early irrigation networks tended to be small and irrigated modest patches of land but were soon followed by larger, more complex projects. The Town Canal in Ellensburg was built in 1885 by the City of Ellensburg and was

capable of irrigating 12,000 acres. The West Kittitas Canal was built in 1889 and could irrigate 10,000 acres. Finally, the Cascade Canal was built in 1903-04 and was planned to irrigate 25,000 acres. Several other small ditches, irrigating an aggregate of 7000 acres, were also operating during the time of the larger ditches (Whitley 1949). The years 1890 to 1910 marked the formative period in reclamation history in Washington. By 1909 the number of irrigated farms in the region had risen to 5716, up from 2316 in 1899 and 714 in 1890 (Nesbit and Gates 1946).

The greatest development in the irrigation networks occurred when the Bureau of Reclamation (BOR) was established under the National Reclamation Act in 1902. The BOR began topographic surveys in 1905 for a high line (eventually the North Branch and South Branch Canals) to irrigate lands above the privately irrigated lands but the project was considered too expensive at the time and was deferred until later. Work on the North Branch Canal started in 1928 (Morrison-Knudson was the contractor) and was completed in 1929. Water was first turned into the canal in 1931, but actual water deliveries were delayed until 1932 because of a break in the Yakima River tunnel (Figure 2.5).

Irrigation substantially increased land values which made farms in reclamation projects some of the most expensive in the state. In Kittitas County the value of irrigated land ranged between 100 and 150 dollars per acre so that farming on irrigated land placed a high premium on commercialized, highly capitalized agriculture utilizing intensive methods and crops that brought relatively high returns. The average size of an irrigated farm in Kittitas County in 1910 was about 108 acres. Kittitas County's farmers accounted for three-fourths of the irrigated timothy hay produced in the state in 1910 and three-fifths of the irrigated clover (Nesbit and Gates 1946).

Before World War I the principal market for agricultural products from Kittitas County was the expanding urban market in Puget Sound. These urban markets also encouraged the development near the cities of small, intensely cultivated tracts on which a wide variety of fruits and vegetables were grown to supply luxury foods to urban markets (Nesbit and Gates 1946).

Irrigation and the completion of the Northern Pacific and the Great Northern Railways to Puget Sound during the 1880s and 1890s brought striking changes in eastern Washington and the West in general. The effect of the railroads on the interior areas of Washington transformed agriculture from a small-holder subsistence enterprise to a capitalistic, commercial enterprise (Nesbit and Gates 1946).

By the mid-twentieth century the Project area was characterized by a well-developed mixed-farming complex with hay growing and grazing, along with some grain production, the dominant activity. Ranches were located on the fans and slopes above the North Branch canal where the poorer soils were located and where there was easy access to good rangeland in the Wenatchee Mountains. Whitley in 1949 observed that many of the farm buildings were of cheap construction and in poor repair. He also comments that this area was the least desirable part of the valley and utilized only for pasturage and even that was of very poor quality. Soils were considered so shallow and stony that they would have been of little value if water were pumped to the area (Whitley 1949).

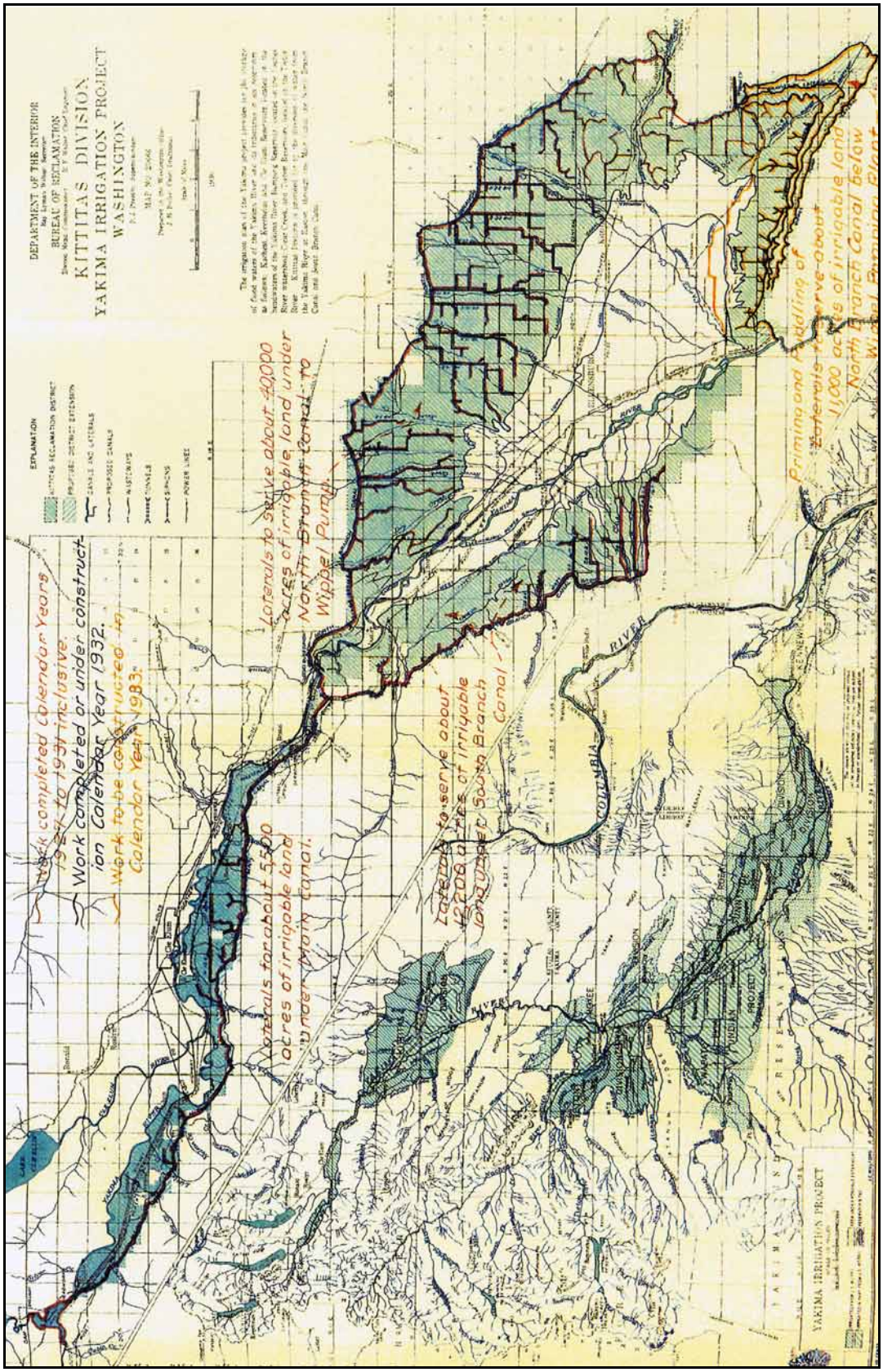

Figure 2.5. Map of the Kittitas Division, Yakima Irrigation Project, in 1930 (Pfaff 2002:Figure 12).

2.5.4 Previous Archaeological Research

Prehistoric archaeological materials have been found in Caribou and Little Caribou Creeks draining the foothills north of Kittitas Valley, in the Trail Creek system in the foothills to the northeast, and at Grissom's Ranch within the valley proper (Hollenbeck and Carter 1986). The limited amount of excavation in the upper Yakima River valley currently precludes a complete understanding of prehistoric land use patterning in the valley, but a Clovis point found near Lake Cle Elum and later-period Cascade-like points (Vantage phase) found in the Keechelus-Cle Elum area indicate the upper Yakima basin was visited beginning soon after deglaciation and used to at least the mid-Holocene (summarized in DePuydt 1990). Cultural resources investigations for fiber optic and power transmission lines passing through the valley have identified other archaeological and historical sites related to settlement, mining in the Cle Elum vicinity, stock raising, logging, railroads, and the development of irrigation.

Twelve cultural resources projects have been wholly or partially located within one mile of the project area (Table 2.2).

Table 2.2 Previously Completed Cultural Resources Projects Within One Mile of the Desert Claim Wind Power Project Area.

AUTHOR(S)	DATE	REPORT TITLE	RESULTS (Sites recorded within one mile)
Archaeological Frontiers, Inc.	2002	Cultural Resources Survey of the Proposed BPA Schultz-Hanford Area Transmission Line Right-Of-Way, Kittitas, Grant, and Benton Counties, Washington.	-
Bicchieri, Barbara	1994	Reecer Canyon Quadrangle Random Survey: A Report to the Archaeological and Cultural Task Group of the Yakima Resources Management Cooperative.	+
Chapman, Judith S., and John L. Fagan	1999	Cultural Resources Survey of Irrigation Features Within the Proposed Level 3 Fiber Optic Line in Kittitas and Yakima Counties, Washington.	-
DePuydt, Raymond	1990	A Cultural Resources Survey Along Puget Sound Power and Light's Proposed Upgrade of the Wanapum-Hyak Electrical Transmission Line.	-
Historical Research Associates, Inc., and Dames & Moore, Inc.	1996	Results of a Cultural Resources Assessment for Olympic Pipe Line Company's Proposed Cross Cascades Petroleum Products Pipeline, Washington.	-
Madden, Shan	1999	Johnson Thin Cultural Resource Inventory #06-17-03/99-02	+
Miller, Fennelle de Forest	2000	"Lillard Hill Lithics": Archaeological Field Testing of Site 45KT1718, Kittitas County, Washington.	+
Miller, Fennelle de Forest and Morris Ubelacker	1994	Archaeological and Cultural Resources Management Cooperative Interim Report 1993, With Revised Workplan 1994.	-
Ozbun, Terry L. and John L. Fagan	2000	Archaeological Monitoring, Level 3 Fiber Optic Project, Washington Segment of Seattle to Boise City Pair	-
Ozbun, Terry L., Julie Schablitsky, Judith S. Chapman, and John L. Fagan	2000	Cultural Resources Survey of Route Modifications and Shovel Testing of Sites for Level 3's Proposed Fiber Optic Line from Seattle to Boise, Central Washington Reroutes Addendum 2.	-
Pinyerd, David	2002	Cultural resources survey of the US Cellular Ellensburg II Site #388320.	+
Thompson, Gail	1998	Archaeological Survey of Selected Areas Along the Proposed BPA Seattle-to-Spokane Fiber Optic Cable Project in King, Kittitas, Douglas, and Grant Counties, Washington.	-

Thirty-four prehistoric and historic sites have been recorded within the project area or within one mile of the project boundaries (Table 2.3). Of these, 23 sites are prehistoric lithic scatters (n =

7) or isolated artifacts (n = 16) recorded on the Wenatchee National Forest in the foothills just to the north (Madden 1999; Bicchieri 1994). The ten previously recorded historic cultural resources include two sites that are within the boundaries of the project: the Springfield Farm, recorded in 1976, and the North Branch Canal, previously inventoried (Pinyerd 2002) but recorded on Washington State Inventory forms during this project. Six other historic buildings also have been inventoried. Four of the buildings (OAHP 19-863 through -866) are part of the Green Canyon farm/ranch complex and the other two are a single-family residence and an agricultural building on Smithson Road, respectively. Two historic sites have been recorded in the foothills and include a possible sheepherders camp (FS 1898) and a cairn with associated fencing debris (45KT1049h).

Table 2.3 Previously Recorded Cultural Resources Within the Project Area and Within a One Mile Radius Around the Project Boundaries.

SMITH-SONIAN (45KT-)	OTHER NUMBERS[a]	DESCRIPTION	LANDFORM	REFERENCE
513h		Robbins Homestead/Springfield Farm; within project boundary.	Fan	Lentz 1976
1032		Lithic scatter: flakes and a core	Foothills	Bicchieri 1994
1035		Isolate: Biface midsection	Foothills	Bicchieri 1994
1036		Isolate: CCS interior flake	Foothills	Bicchieri 1994
1037		Isolate: CCS interior flake	Foothills	Bicchieri 1994
1038		Two chert exterior flakes	Foothills	Bicchieri 1994
1039		Isolate: CCS biface fragment	Foothills	Bicchieri 1994
1040		Isolate: CCS flake	Foothills	Bicchieri 1994
1041		Isolate: CCS interior flake	Foothills	Bicchieri 1994
1042		Isolate: CCS biface tip	Foothills	Bicchieri 1994
1043		Isolate: CCS interior flake	Foothills	Bicchieri 1994
1044		Isolate: CCS interior flake	Foothills	Bicchieri 1994
1045		Isolate: CCS chunk	Foothills	Bicchieri 1994
1046		Isolate: CCS exterior flake	Foothills	Bicchieri 1994
1047		Isolate: CCS flake	Foothills	Bicchieri 1994
1048		Isolate: CCS interior flake	Foothills	Bicchieri 1994
1049h		Rock cairn and historic fencing debris	Foothills	Bicchieri 1994
1053		Isolate: CCS chunk	Foothills	Bicchieri 1994
1054		Lithic scatter	Foothills	Bicchieri 1994
1718		Lithic scatter	Foothills	Miller 2000
-	FS 1873	Lithic scatter	Foothills	Madden 1999
-	FS 1895	Lithic scatter	Foothills	Madden 1999
-	FS 1898	Historic camp, possibly sheepherders camp	Foothills	Madden 1999
-	FS 1899	Logging sled runner	Foothills	Madden 1999
-	FS 1900	Lithic scatter	Foothills	Madden 1999
-	FS 2001	Isolate: CCS tertiary flake	Foothills	Madden 1999
-	OAHP 19-862	Single-family house	Fan	Pinyerd 2002
-	OAHP 19-863 to -866	Green Canyon Ranch complex	Fan	Pinyerd 2002
-	OAHP 19-867	North Branch Canal	Fan	Pinyerd 2002
-	OAHP 19-868	Agricultural storage building	Fan	Pinyerd 2002

[a] FS: Numbers assigned by the Wentachee National Forest; OAHP: Historic structure inventory number.

3. RESEARCH PERSPECTIVES (EXPECTATIONS)

Expectations for the discovery of cultural resources within the Project were developed from information about known sites in the general area and immediate vicinity, ethnohistoric sites and subsistence practices, historic period activities, and landform characteristics.

3.1 Prehistoric Expectations

The Project is located on the surface of a large alluvial fan complex that connects the forested uplands of the Wenatchee Mountains with the riverine environment of the Yakima River flood plain. In general, sites located in the non-riverine portions of the valley probably represent a very narrow range of activities. If the fan surface was used as a transit way between the valley bottom and the uplands, then sites would be expected to be small dispersed lithic scatters that may include hunting weapons or expedient tools left behind after field processing of resources that were encountered in transit. Long-term residential sites are not expected and lithic toolstone procurement areas are expected to be higher in elevation above the Project and located near fanhead trenches of streams emerging from the mountains. The areas between sites would be expected to be characterized by a light-density scatter of isolated flakes and discarded tools that represent foraging localities or discarded tools and tool manufacture debris. Sites are expected to be found in well-drained areas close to active channels, but site locations are expected to shift as channels laterally swept across the fan surface.

A few sites may be found representing longer-term stays for groups who maintained a base camp on the fan during periods of wetter-than-normal spring seasons. These sites may have been formed as people pursued ungulate species lingering at lower elevations due to availability of palatable browse or harvested edible roots from patches that expanded in response to increased moisture.

3.2 Historic Expectations

Historic sites associated with the development of the Kittitas Valley are expected to be related to settlement, stock raising, and agriculture. Early settlers would be expected to have small farmsteads with perhaps only a few buildings and structures until the development of irrigation and improved transportation networks granted farmers and ranchers in the valley access to more markets and greater participation in the national economy. As a result, larger site complexes such as ranches would be expected as small-holders expanded or were bought out by better capitalized farmers and ranchers. Artifacts and sites associated with construction of the North Branch Canal are expected in the southern portion of the Project, and debris scatters may be found along the routes of possible stock driveways to the Wenatchee Mountains that passed through the project area.

Specific historic archaeological remains may be found such as foundations, changes in vegetation, and surface remains which may provide information about the ways the land has been used. Standing buildings and structures, canals and other irrigation features, stock driveways, and debris piles are likely to be found indicating previous uses of the land. The spatial distribution of features and surface disturbances may also be found to yield information about the evolution and past uses of the land. Small-scale elements also likely to be found may

be fruit trees, individual beverage and food cans, abandoned machinery, and fenceposts; these would mark the location of historic activities, but lack significance or integrity as archaeological sites.

4. METHODS

Prefield research involved a search of records at the NWAA offices, and research conducted among materials housed at the Washington Office of Archaeology and Historic Preservation (OAHP). NWAA also contacted the Yakama Nation to provide information about the project and to solicit information regarding concerns the tribes may have had about cultural resources in the Desert Claim Wind Power Project area (Appendix A). The results of historical research are presented in Appendix B. The field survey employed transects with crew members spaced at 30-meter intervals. Most transects were oriented east-west or north-south because the gentleness of the terrain and the abundance of local landmarks (roads and fences) made it easy to maintain transects and to locate starting and ending points for the transects. Maps depicting the locations and orientation of the transects are collected in Appendix C; project maps are located in Appendix D.

Sites were defined as 5 or more objects within a 30-meter area unless two or more artifact classes were represented among the artifacts. If two artifact classes were represented within the 30-meter area, then that locality was recorded as a site even if the total artifact counts were less than 5 items. Isolates were places where there were less than five objects within a 30-meter area. Complex objects such as machines, cars, stoves, stockponds, and piles of various types (fence jacks, field clearing piles, and wood piles) were counted as discrete single objects.

Prehistoric and historic sites were recorded using Washington State Archaeological Inventory (WASI) forms; completed forms are attached as Appendix E. Prehistoric and historic isolates were recorded using forms specifically developed for the project by NWAA and are also attached to the site records in Appendix E. Site recording procedures included description of site location and local physical context, a summary of the site contents, partial inventory of artifacts, and descriptions of features comprising the site contents. Site overviews and selected artifacts were photographed using print film or digital formats; photographs are included with the site records and archived at NWAA offices. For each site a scaled sketch map was drawn showing the site boundaries, local landmarks, and the distribution of features, artifact concentrations, and selected artifacts. Isolate records include a brief description of the artifact accompanied by a brief description of its location and setting and a photograph of the item.

Sites and isolates were located with reference to U.S.G.S. topgraphic 7.5 minute series maps and by reference to the UTM grid. The UTM grid locations were collected in the field using a hand-held Garmin 12 XL (with an announced maximum horizontal error of about 30 feet; actual error is considerably less due to high-quality satellite reception during the field work). The location data collected by the GPS unit was digitally stored and the coordinates were also transferred to the field forms; location data acquired during field work are presented in Appendix F. At the end of each day, the day's data points were downloaded and sent to NWAA's Seattle office. The digital format photos were also downloaded daily and stored electronically. Digital photos are identified by a number that indicates the day the photo was taken (the "roll" number) and the frame number for that day.

Separate numbering systems were employed in the field to readily distinguish sites from isolates. The sites were designated with the prefix DC-03 followed by the number of the site in the order that the site was recorded. Sites, both historic and prehistoric, are designated as DC-03-1 through DC-03-31. The isolates were numbered in the same fashion but the suffix "ISO" was attached to the number to indicate that the number referred to an isolate. Isolates were recorded on standard NWAA forms which included location information and a brief description

of the item and its context of discovery. Photographs of all isolates were recorded and are archived at the NWAA main office. (Isolate forms are attached as part of Appendix E). Finally, after analyzing all the forms, the sites and isolates were renumbered to the same numbering system.

5. RESULTS

Thirty-one archaeological prehistoric and historic sites were recorded during the course of fieldwork (Figures 5.1 and 5.2; Table 5.1). Three dual component sites (DC-03-5, -06, and -22) were found during the survey. One previously recorded site (45KT513) was relocated and the site record updated. Seventy-five prehistoric and historic artifact isolates were also newly recorded (Figure 5.3). Additionally, 51 rockpiles, categorized as field-clearing piles or fencejacks were noted but not recorded (Figure 5.4). Figure 5.2 also shows channels and irrigation ditches that distribute water from the natural streams in the area north of North Branch Canal.

The following brief descriptions summarize the salient properties of each site and are divided into prehistoric and historic sections. Descriptions for sites that contain both historic and prehistoric archaeological materials (dual component) are repeated in each section.

5.1 Prehistoric Resources

DC-03-05: Prehistoric Lithic Scatter and Historic Bridge

This site is a dual component site containing prehistoric and historic cultural material at the confluence of Currier Creek and an unnamed intermittent drainage. The prehistoric component consisted of 38 pieces of debitage, a core, and a projectile point covering an area measuring 60 meters north-south by 45 meters east-west. Except for one flake of petrified wood, all the cultural materials were composed of CCS. The projectile point was found atop a bulldozed mound of dirt and rocks indicating the point had been displaced from its original context. The projectile point is a small side-notched point that dates to within the last 2,000 years.

Historic archaeological materials were sparse and limited to a shell cartridge and a wooden bridge spanning the seasonal channel.

DC-03-06: Prehistoric Lithic Scatter and Historic Debris Scatter

The site is a low-density scatter of seven CCS prehistoric artifacts dispersed among two stock ponds and an associated scatter of historic artifacts. The flakes were found northeast of the larger stock pond.

DC-03-08: Prehistoric Lithic Scatter

The site is a dispersed moderate-density prehistoric lithic scatter on a gently sloping interfluve overlooking the junction of two intermittent drainages. A total of 32 lithic artifacts were found in an area measuring 70 meters north-south by 20 meters east-west. Among the artifacts observed onsite were 14 flakes, 15 pieces of shatter, one utilized flake, one retouched flake, and a core. All of the shatter was andesite and the rest of the archaeological materials were composed of andesite or CCS.

Figure 5.1 Withheld from Publication

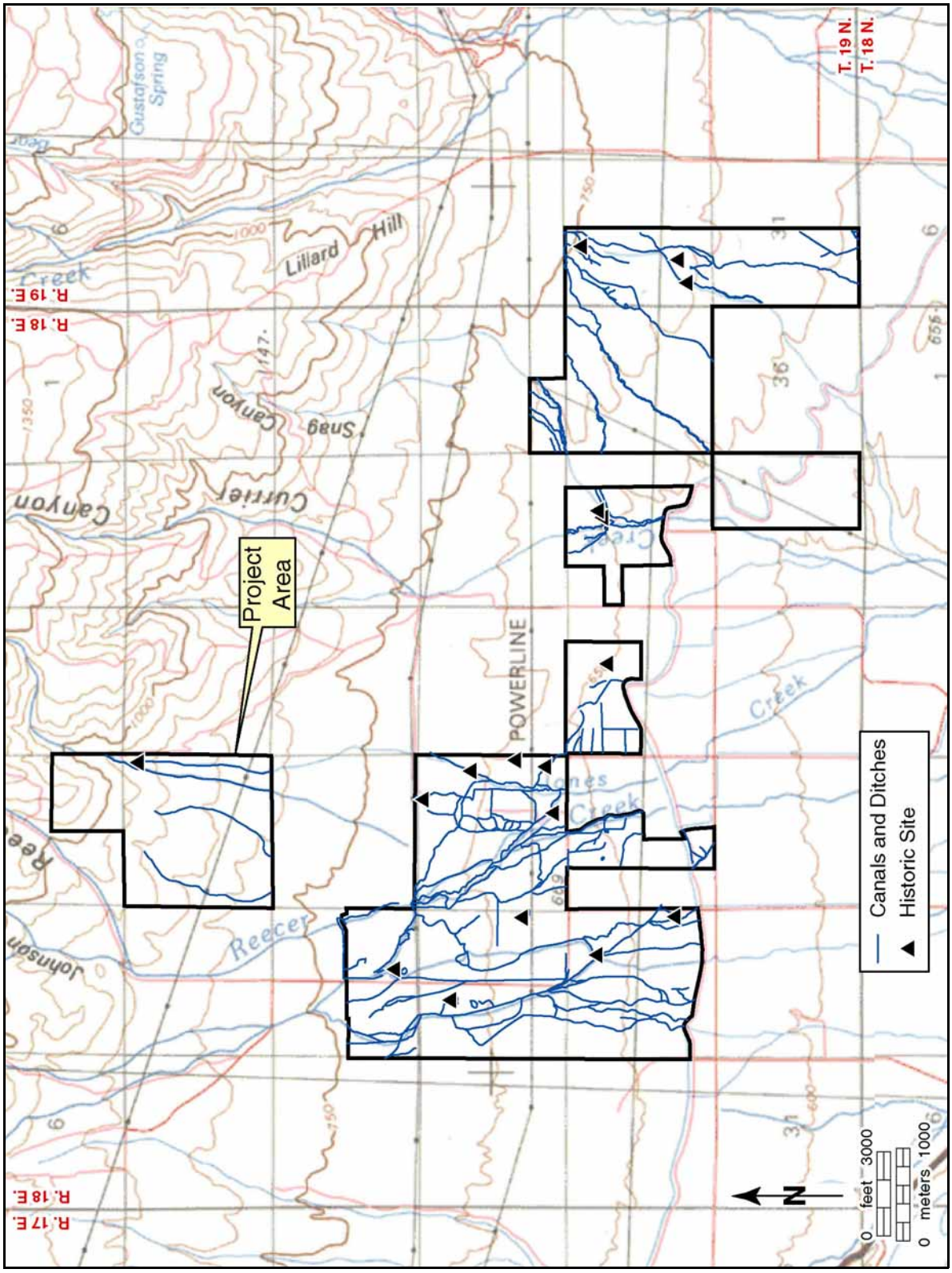

Figure 5.2. General locations of historic sites in relation to canals and irrigation ditches that distribute stream flow (USGS Wenatchee, Wash., 1:100,000 scale, 1975; canal locations courtesy of Ecology and Environment Inc.).

Table 5.1. Summary Properties of Cultural Resources Newly Recorded or Updated During Archaeological Field Investigations, Desert Claim Wind Power Project, Kittitas County, Washington.

FIELD NO. (DC-03-_)	COM-PONENT	DESCRIPTION	AGE	THEME
Sites:				
1	H	Historic debris scatter near cattle track	1900 - 1940	Stock Raising
2	H	Historical debris scatter and depression	1900 - 1930	Agriculture / Settlement
3	H	Morrison Homestead	1880 - 1940	Agriculture / Settlement
4	H	Historic can dump	1940s	Agriculture
5	H/P	Lithic Scatter and historic bridge	Late Prehistoric / Early 20th C	Prehistoric / Settlement
6	H/P	Historic debris and prehistoric lithic scatter	Prehistoric/ 1900 - 1950	Prehistoric / Stock Raising
7	H	Small historic scatter	1940 - 1955	Agriculture
8	P	Lithic scatter	Prehistoric	Prehistoric
9	H	Historic debris scatter	1940 - 1960	Agriculture
10	P	Lithic scatter	Prehistoric	Prehistoric
11	P	Lithic scatter	Prehistoric	Prehistoric
14	H	Historic debris	1880 - 1930	Agriculture / Settlement
15	H	Historic structures and historic debris	1900 - 1940	Agriculture / Settlement
16	H	Historic debris scatter	1920 - 1945	Agriculture
17	P	Lithic scatter	Late Prehistoric	Prehistoric
18	H	Historic debris scatter	1900 - 1940	Agriculture
19	P	Lithic scatter	Prehistoric	Prehistoric
20	H	Historic cabin and historic debris scatter	1880 - 1930	Agriculture / Settlement
21	P	Lithic scatter	Prehistoric	Prehistoric
22	H/P	Springfield Farm (45-KT-513h update) / prehistoric lithic scatter	1880 – 1950 / Prehistoric	Agriculture / Settlement Prehistoric
23	H	Historic debris scatter	1925 – 1950	Agriculture
24	P	Lithic scatter	Prehistoric	Prehistoric
25	H	Roan Farm	1900 – Modern	Agriculture / Settlement
26	H	Historic farm (White Ranch)	1900 – Modern	Agriculture / Settlement
27	P	Lithic scatter / procurement site	Prehistoric	Prehistoric
28	H	Hodges Residence	1925 - Modern	Agriculture / Suburban Development
29	P	Lithic scatter	Prehistoric	Prehistoric
30	P	Lithic scatter	Prehistoric	Prehistoric
31	H	North Branch Canal	1926 - Modern	Irrigation Development
Isolates:				
32	P	One brown CCS flake	Prehistoric	Prehistoric
33	P	One CCS flake	Prehistoric	Prehistoric
34	H	Church-key opened beer can	1935 - 1950	Agriculture
35	H	Hole-in-top can, flattened	1900 - 1940	Agriculture
36	P	One CCS primary flake	Prehistoric	Prehistoric
37	P	One CCS primary flake	Prehistoric	Prehistoric
38	P	One CCS edge-modified flake	Prehistoric	Prehistoric
39	H	Five sheet metal fragments, possibly a piece of farm machinery.	1900 - 1960	Agriculture
40	P	One CCS primary flake	Prehistoric	Prehistoric
41	H	One cook-stove	1900 - 1950	Agriculture
42	P	One CCS tertiary flake	Prehistoric	Prehistoric
43	P	One CCS flake	Prehistoric	Prehistoric
44	P	One CCS flake	Prehistoric	Prehistoric
45	P	One CCS flake	Prehistoric	Prehistoric
46	P	Two tertiary flakes: one CCS, one basalt	Prehistoric	Prehistoric
47	P	One CCS primary flake	Prehistoric	Prehistoric
48	H	Blasting powder container, E.I. DuPont de Nemours & Company black blasting powder can	1924 - 1930	Irrigation Development
49	H	Blasting powder container, E.I. DuPont de Nemours & Company black blasting powder can	1924 - 1930	Irrigation Development
50	H	Blasting powder container, E.I. DuPont de Nemours & Company black blasting powder can	1924 - 1930	Irrigation Development

Table 5.1. Summary Properties of Cultural Resources Newly Recorded or Updated During Archaeological Field Investigations, Desert Claim Wind Power Project, Kittitas County, Washington.

FIELD NO. (DC-03-_)	COM-PONENT	DESCRIPTION	AGE	THEME
51	H	Bottle fragments with mark, possibly from the Fairmount Glass Works, Fairmount, Indiana	1889 - 1930	Agriculture / Settlement
52	P	One CCS flake	Prehistoric	Prehistoric
53	H	One crushed bucket, blasting powder container, E.I. DuPont de Nemours & Company black blasting powder can	1924 - 1930	Irrigation Development
54	P	One CCS biface/preform with cortex	Prehistoric	Prehistoric
55	P	One CCS core	Prehistoric	Prehistoric
56	P	One CCS tertiary flake	Prehistoric	Prehistoric
57	P	One CCS primary flake	Prehistoric	Prehistoric
58	P	One CCS tertiary, biface thinning flake	Prehistoric	Prehistoric
59	H	Cart or trailer	1920 - 1960	Agriculture
60	P	One fine-grained volcanic rock flake	Prehistoric	Prehistoric
61	H	One broken (11 fragments) baby formula bottle with a picture of a baby head with "We Help To Raise Them" under it; marked "Field" on bottom; possibly Enfimil brand.	1940 – 1960	Agriculture
62	P	One CCS flake	Prehistoric	Prehistoric
63	P	One CCS exhausted core	Prehistoric	Prehistoric
64	P	One CCS secondary flake	Prehistoric	Prehistoric
65	P	One CCS flake	Prehistoric	Prehistoric
66	P	One CCS flake	Prehistoric	Prehistoric
67	P	One CCS flake	Prehistoric	Prehistoric
68	P	One CCS tertiary flake	Prehistoric	Prehistoric
69	P	One CCS corner-notched projectile point, broken	Prehistoric	Prehistoric
70	H	A pile of wooden fence posts and barbed wire	1900 - 1960	Agriculture
71	H	A pile of wooden fence posts and coiled barbed wire	1900 - 1960	Agriculture
72	H	One bucket	1900 - 1960	Agriculture
73	H	Farm machinery fragments	1920 - 1960	Agriculture
74	P	One CCS tertiary flake	Prehistoric	Prehistoric
75	H	Two metal harrow sections	1900 - 1960	Agriculture
76	P	One CCS flake	Prehistoric	Prehistoric
77	P	One flake, possibly edge modified	Prehistoric	Prehistoric
78	P	Four CCS flakes	Prehistoric	Prehistoric
79	H	Wagon bed and axle fragments	1900 - 1940	Agriculture
80	H	Farm machinery fragments, possibly a hay loader	1900 - 1960	Agriculture
81	P	One CCS flake	Prehistoric	Prehistoric
82	H	Farm machinery, axle of hay loading machine	1900 - 1960	Agriculture
83	H	Wood and metal sled fragments	1920 - 1960	Agriculture
84	P	Two CCS flakes	Prehistoric	Prehistoric
85	P	One CCS tertiary flake	Prehistoric	Prehistoric
86	H	Disker attachment for a tractor	1920 - 1960	Agriculture
87	P	One CCS flake fragment	Prehistoric	Prehistoric
88	H	Sheet metal body of unknown machinery	1920 - 1960	Agriculture
89	P	One CCS biface fragment	Prehistoric	Prehistoric
90	P	Three CCS flakes	Prehistoric	Prehistoric
91	P	One CCS biface fragment, possible projectile point fragment	Prehistoric	Prehistoric
92	P	One CCS flake	Prehistoric	Prehistoric
93	P	One CCS secondary flake	Prehistoric	Prehistoric
94	P	One CCS flake	Prehistoric	Prehistoric
95	H	Red brick wrapped with bailing wire	1900 - 1960	Agriculture
96	P	One CCS flake	Prehistoric	Prehistoric
97	P	One CCS biface	Prehistoric	Prehistoric
98	P	One CCS core	Prehistoric	Prehistoric
99	P	One CCS core	Prehistoric	Prehistoric

Table 5.1. Summary Properties of Cultural Resources Newly Recorded or Updated During Archaeological Field Investigations, Desert Claim Wind Power Project, Kittitas County, Washington.

FIELD NO. (DC-03-_)	COM-PONENT	DESCRIPTION	AGE	THEME
100	P	One CCS tertiary flake	Prehistoric	Prehistoric
101	H	Irrigation dike	1900 - Modern	Agriculture
102	H	3 flattened milk buckets without handles	1900 - 1940	Agriculture
103	P	One CCS biface fragment, probably a projectile point tip	Prehistoric	Prehistoric
104	H	Stock pond complex including a pond, wood dock to a gate valve, a drainage channel, a ditch, the wood bridge over the ditch, and a headgate	1900 - Modern	Agriculture
105	P	One CCS tertiary flake	Prehistoric	Prehistoric
106	H	Stock pond complex including a pond, a cement wall, a cement and wood headgate, and a gate valve.	1900 - Modern	Agriculture
107	H	Stock pond complex including a pond, culvert, a wooden dock, and a gate valve.	1900 - Modern	Agriculture

DC-03-10: Prehistoric Lithic Scatter

This site is a moderate-density lithic scatter occupying an area measuring 30 meters north-south by 10 meters east-west on a flat between Reecer Creek to the east and an unnamed drainage to the west. A total of 26 flakes and 1 projectile point tip, all composed of CCS, were observed.

DC-03-11: Prehistoric Lithic Scatter

Site DC-03-11 is a very small lithic scatter located near an unnamed drainage/irrigation ditch that flows into a pond to the south. The site materials consisted only of a core and a flake located less than one meter apart. Both artifacts are CCS of different colors.

DC-03-17: Prehistoric Lithic Scatter

This site is a large, elongate lithic scatter measuring 240 meters north-south by 40 meters east-west on the right (west) bank of Reecer Creek. The site consists of a scatter of over 90 flakes with seven pieces of shatter, an edge-modified flake, four cores, three projectile points, one biface fragment, and a possible cairn. The projectile points included one small side-notched point and two corner-notched points. All of the points were small with neck-widths measuring less than 1 cm; stylistic attributes indicate the points had been manufactured within the last 2000 years. The cairn contained about 30 basalt cobbles and boulders and measured approximately 1.4 meters north-south and 2.0 meters east-west; it stood about 15 cm high.

Four artifact concentrations were defined during site recordation. Concentrations 1 through 3 were small, averaging about 10 flakes in a 5- to 10-meter-diameter area, but Concentration 4 consisted of twenty-seven flakes within a 5-meter-diameter area. The only complete projectile point on the site was found in Concentration 4. All of the artifacts were made from CCS in a variety of colors, translucence, and textures.

Ground visibility was limited due to the presence of thick sage, brush, and grass cover so that the site may be more extensive than recorded.

Figure 5.*3* Withheld from Publication

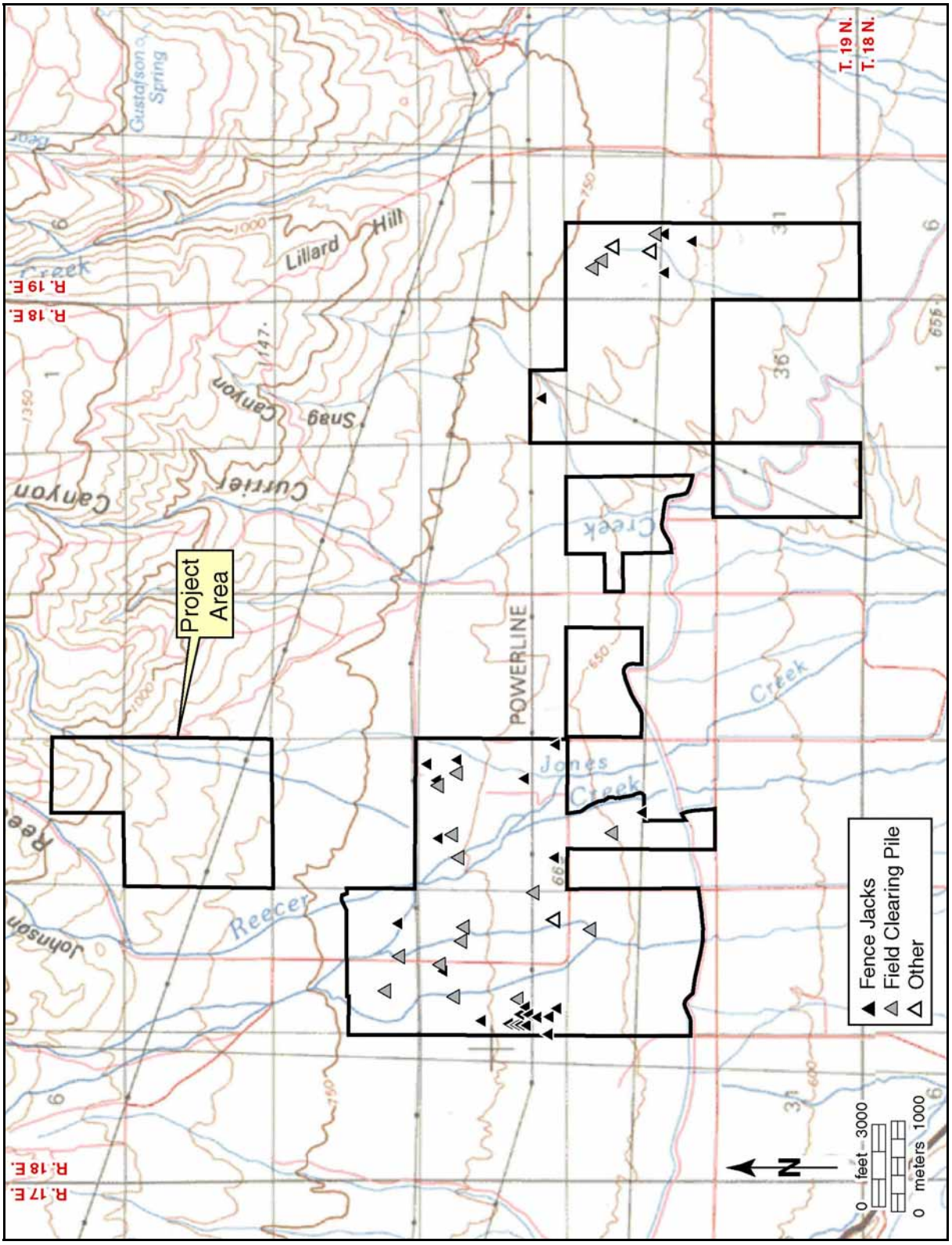

Figure 5.4. General locations of rock piles within the project boundary (USGS Wenatchee, Wash., 1:100,000 scale, 1975).

DC-03-19: Prehistoric Lithic Scatter

The site is a small (92 m^2) lithic scatter comprising 10 flakes and one unifacially modified tool fragment located on the east bank of Jones Creek near the mouth of Robbins Canyon. All the flakes are less than 3 mm in size and eight are tertiary flakes. The site is located at the interface between the foothills and the gently sloping fan surface.

Surface visibility was poor and the site boundaries are based on exposures of artifacts in cattle tracks. The high amount of material observed in very small surface exposures suggests the site is more extensive than recorded.

DC-03-21: Prehistoric Lithic Scatter

This site is a dispersed light-density lithic scatter occupying a low-lying topographic high approximately 400 meters west of Reecer Creek and directly under the BPA power transmission lines. An unsurfaced access road traverses the southern half of the site and the base of one of the transmission tower pylons is within the site boundaries.

Archaeological materials observed at the time of site recording included three flakes, three cores, one retouched flake, and a projectile point fragment. Seven of the artifacts were manufactured from CCS; the eighth (the retouched flake) had been fabricated from andesite.

The projectile point was found in exposed mineral soil on the south edge of the dirt road. Surface visibility in the site area was limited and the actual site boundaries may be more extensive than those recorded

45KT513H (DC-03-22): Springfield Farm/Robbins Homestead and Prehistoric Lithic Scatter

The site consists of four structures and a historic debris scatter associated with the Springfield Farm. The prehistoric component, consisting of a lithic scatter and associated fire-modified rock, was found in the course of updating the site record.

The prehistoric archaeological material was observed in small areas of exposed ground around the bases of the fruit trees and in rodent backdirt mounds surrounding the trees. The prehistoric material includes 27 flakes, a tested cobble, an edge-modified flake, and an unifacially modified tool fragment. In addition to the flaked stone material, about 25 fragments of fire-cracked rock were also observed. All but four of the flakes were found within 10 meters of the fruit trees. Material types represented among the artifacts included CCS, petrified wood, and basalt.

DC-03-24: Prehistoric Lithic Scatter

The site consists of a dispersed low-density lithic scatter on a gentle scabland slope characterized by few low-lying biscuit mounds. An unnamed drainage lies approximately 200 meters east of the site. Five flakes and one projectile point fragment were found within an area measuring 60 meters north-south by 20 meters east-west lying adjacent a fenceline. The project point was a small corner-notched fragment and stylistic attributes indicate it was manufactured within last 2000 years.

DC-03-27: Prehistoric Lithic Procurement Site

The site is a large (400 meters north-south by 275 meters east-west) lithic procurement site on an interfluvial ridge between two ephemeral channels. Abundant chert nodules and early-stage reduction debris were found on an eroded surface. Plentiful raw material in the form of chert nodules, the presence of early stage reduction debris, and abundant debitage of the same material type suggest the site is a lithic procurement location. There is no evidence that raw material was quarried to obtain the nodules. The chert nodules and associated flaking debris were red and yellow.

Archaeological materials observed during site recording included raw material nodules, cores, edge-modified flakes, a biface, tested nodules, and abundant flakes and shatter; all artifacts were composed of the same CCS that comprises the nodules. Most of the debitage was composed of a course-grained CCS with colors ranging from brown to gray. Sizes of flakes of this CCS were usually between 3 and 10 cm long. Smaller-sized flakes tended to be a finer grade of CCS with colors that were brown, red and yellow. Three artifact concentrations were identified within the site. The maximum density of lithic debitage was 20 items per square meter within Concentration 1 and the density of material between concentrations averaged about 5 per square meter.

DC-03-29: Prehistoric Lithic Scatter

The site is a small prehistoric lithic scatter. The site consists of two cores and a retouched flake. Both of the cores have been retouched on many of their edges. All of the CCS artifacts were found within 3 meters of each other. The site is near the fenceline separating Sections 25 (T19N, R18E) and Section 30 (T19N, R19E).

DC-03-30: Prehistoric Lithic Scatter

The site was found on the surface of a two-track road paralleling the east-west fenceline that separates Sections 24 and 25. One core and one flake, both of CCS, were found within one meter of each other.

5.2 Historic Resources

DC-03-01: Historic Debris Scatter

The site is a small high-density historic debris scatter located on the slope of a small rise overlooking an intermittent drainage. The overall dimensions of the site were 130 feet along its north-south axis and 80 feet along its east-west axis. A substantial portion of the artifacts were locally concentrated along a cattle track leading to the nearby seasonal channel. A visual estimate of artifact density for the artifacts in the cattle track was about 100 items per square meter which dropped off rapidly downslope below the concentration to about 10 artifacts per square meter.

Some of the artifacts observed within the site boundaries include an enamel pan, leather shoe parts, metal cans, metal machinery, and lead piping. Glass artifacts were dominated by aqua, amethyst, brown, clear or green bottle fragments but there were also several white glass canning lid fragments. Ceramic artifacts included earthenware, porcelain and terra cotta

fragments and many of the fragments were tableware fragments decorated with ornate designs. Metal cans were varied and represented uses as containers for food, blasting powder, paint, and fuel. Some of the food containers were hole-in-top cans. Some metal machinery parts were also represented in the site assemblage and included a jack stand, tractor parts, and seat springs along with other metal objects such as wire, a funnel, and buckets.

DC-03-02: Historic Debris Scatter

This site is an excavated depression on a small knoll with an associated small historic debris scatter north of the knoll. The depression measures about 15 feet in diameter and 3 feet deep. The interior of the depression contained three hewn timbers; two of the timbers were fastened with a large round-head nail and a bolt with a square nut.

Approximately 30 items were found in the debris scatter. Some of the more distinct artifacts included a belt buckle, a lock box and tumbler, and a shoe eyelet. The ceramics were primarily earthenware dish fragments. Glass fragments were predominantly amber or amethyst bottle glass with one amethyst glass fragment a medicine bottle neck. The metal artifacts were dominated by hole-in-top cans.

DC-O3-03: The Morrison Homestead

The Morrison Homestead site is located on a relatively flat area at the headwaters of two small intermittent drainages. The site consists of the remains of at least two structures, several rock alignments, a debris scatter, and an orchard within an area measuring 560 feet north-south by 650 feet east-west.

Two debris concentrations and six features were identified. The debris concentrations included domestic and farming artifacts. The domestic artifacts included cast iron stove parts, a door lock and tumbler, glass fragments, ceramic tableware fragments, metal cans, a scale, two barrel hoops, an enamelware basin, white glass canning lid fragments, and a cooking pot. The color of the bottle fragments was amethyst, clear and aqua. Farm implements and machinery artifacts included horse buggy parts, a plow share, axe heads, harness parts, a plow hitch, a file, a barn shovel, an engine manifold, bailing wire, horseshoes, leaf springs, bricks, a wagon wheel hub, a sickle bar, binder parts, and a hoe. In the southwest portion of the homestead is an apple and plum orchard covering an area of approximately five acres.

DC-03-04: Historic Debris Scatter

This site is an historic debris scatter near an unnamed intermittent drainage that joins Currier Creek. The scatter contains approximately 15 cans within a 30-foot-diameter area. The cans had been flattened and all but two were sanitary type cans.

DC-03-06: Prehistoric Lithic Scatter and Historic Debris Scatter

The site is a small scatter of historic and prehistoric material near two ponds built around a spring. The ponds were dry at the time of site recordation. The historic debris consisted of window glass fragments, sheet metal scraps, a tin can, and some lumber. The prehistoric lithic scatter was located northeast of the larger pond.

DC-03-07: Historic Debris Scatter

The site is in an agricultural field near the North Branch Canal and consists of a small scatter of historic cultural material confined within a 30-foot-diameter area. Artifacts included shards of bottle glass, ceramic sherds, and metal can fragments. Glass colors were cobalt blue, brown, clear, and green. The ceramics were earthenware and included tableware sherds decorated with a yellow design coated with a clear glaze. The total number of artifacts was less than 100.

DC-03-09: Historic Debris Scatter

This site is a historic debris scatter along the edge of an excavated depression under the BPA transmission lines. The site covers an area 230 feet north-south by 200 feet east-west. The depression is oblong and the historic debris was distributed in two main concentrations along the southern and western margins of the depression. Two dirt roads are located adjacent the site to the east and the south, respectively.

Both of the artifact concentrations contained mixtures of historic and modern materials. Concentration 1 consisted of ceramics, glass insulators, bottle glass fragments, several types of tin cans, two spark plugs and a belt buckle. The can types included food tins, and paint and aerosol containers. Many of the ceramic earthenware dish fragments had a decorative design. Aqua, brown, cobalt blue, and clear bottle glass colors were represented among the glass fragments. Concentration 2 included six possible beer cans that had been opened with church keys and two food tins.

Most of the cultural material at the site dates between 1900 and the1950's based on maker's marks on artifacts such as glass insulators, spark plugs, and bottles. Some of the bottle glass has bubbles and one bottle had a push-up base created by bottle manufacture techniques used during the early 20 century.

DC-03-14: Historic Debris Scatter

The site is a large and dispersed historic debris scatter consisting of five features, four artifact concentrations, and an associated light scatter of artifacts representing the remains of a farmstead dating to the early 20th century. The features include two collapsed structures, an abandoned fence line, a foundation, and a depression. The artifact concentrations contain ceramic, glass, and metal artifacts representing predominantly residential or domestic debris.

Feature 1 consists of a former fenceline consisting of an alignment of rockpiles spaced at intervals 10 feet apart. The rockpiles are constructed of basalt cobbles and boulders stacked in 3-6 tiers with wood cribbing and barbed wire. Feature 2 is a three-sided rock alignment measuring 10 feet by 16 feet and may represent the remains of a structure foundation. Scattered fragments of milled wood, three red bricks, and shards of window pane glass are in the vicinity of the foundation. Feature 3 is a small collapsed 3-sided crib structure constructed of rounded poles measuring 10 feet by 16 feet. The interior of the structure contains a pile of milled wood which may be the remains of the nearby Feature 2 structure. A thick shard of green bottle glass and a shard of amethyst glass were observed near this feature. Feature 4 is a large pile of milled wood that probably represents another collapsed structure. Two concrete fragments that may represent the remains of a foundation were observed at the northwest corner of the lumber pile. Both round-head and square-head nails were embedded in the

boards. Feature 5 is a two-foot-deep depression measuring 10 feet in diameter of unknown function.

Artifact Concentration 1 consists of ceramic, glass, and metal debris found in a 16-foot-diameter area. The artifacts include amethyst and clear glass, a roll of chicken wire, three metal buckets, pieces of barbed wire, a baking powder can lid, a metal pipe, a stove burner, two barrel hoops and six pieces of ceramic tableware. Concentration 2 is a small historic dump occupying a 10-foot-diameter area. Artifacts observed in the concentration included 4 metal cans, 1 Mason jar lid, ceramic plate fragments, and amethyst glass. Concentration 3 is16 feet in diameter and includes a wood frame (possibly a truck bed) and miscellaneous metal parts and glass debris. The bottle glass fragments were from Mason jars, a Bromo Seltzer bottle, and a mentholatum bottle. Concentration 4 is also 16 feet in diameter and consists of a brick pile and a few metal and glass objects located north of Feature 3.

DC-03-15: Homestead

The site is the remains of a farmstead and includes structural remains, farm machinery, and several debris dumps that were identified within an area encompassing approximately three acres. Structural remains indicating the possible location of the main residential area are in the west half of the site adjacent to a channel that empties into a stock pond; the remains of a demolished barn are in the northeast corner of the site. The remainder of the site consists of debris dumps and scattered artifacts. The current property owner, Mr. Roan, said that he razed the barn a few years ago.

A total of four features and six artifact concentrations were defined. Feature 1 is the demolished barn and associated artifacts which included leather tack as well as fragments of window glass and bottle glass. Feature 2 is a chicken coop that is the only standing structure on the site. Feature 3 is a foundation measuring 45 feet by 32 feet and extending from three to five feet deep below the surface. Artifacts associated with this feature included bricks, concrete fragments, charred wood, metal pipes, ceramic fragments, glass shards, and butchered bone. Feature 4 is a small collapsed structure.

In general, the artifacts were a mixture of residential debris, farm machinery objects, or piles of fence building materials. Residential objects included glass and ceramic fragments, metal cans, and a kerosene lantern. Glass fragments included window glass along with jar and bottle glass of the following colors: amethyst, cobalt blue, clear, and green. One of the bottles was a Heinz mustard jar, another a milk of magnesia bottle, and there were several canning jars. The ceramic artifacts were sherds of earthenware and stoneware dishes, some of which had decorative designs and glazes. There was also a white ceramic electrical fuse. Metal artifacts included food tins that had been opened with a church key opener. Metal machinery parts included an automobile axle and a variety of parts from other farm implements. There was also a McCormick-Deering binder minus the trailer, and a buggy undercarriage.

DC-03-16: Historic Debris Scatter

This is a small (115 feet by 30 feet) historic debris scatter close to where the BPA transmission lines cross Pheasant Road. The largest of the three artifact concentrations recorded on the site was Concentration 1, which consisted of a roasting pan, paint cans, Quaker State oil cans, a coffee can, two hole-in-top evaporated milk cans, an enamel basin, a black earthenware pot,

stove pipe fragments, farm machinery parts, two oil filters, bottle and jar glass, ceramic tableware fragments, a broken toilet tank lid, a piece of braided steel cable, a button, a Carbide Pit Generator housing, a mop wringer, and a few bundles of bailing wire. Artifact Concentration 2 consisted of two tin cans and three metal springs from a car seat. Concentration 3 consisted of three paint cans, a large tin bucket, and a square can. Some of the metal cans were opened with a church key.

DC-03-18: Historic Debris Scatter

The site is on a small knoll near Pheasant Road just south of a recently excavated trench. Artifacts observed during recording include metal, glass and ceramic within an area 140 feet by 80 feet. Over 90 percent of the cultural material was found at the north end of the site where over 100, mostly sanitary, tin cans were found. Coffee, milk, and tobacco cans were represented. Other metal artifacts observed included an enamel cup, the tooth of a hay rake, and a Boyds zinc canning lid top. Bottle glass colors included amethyst, aqua, black, and clear. One of the bottles is a Heinz condiment container. There were a few ceramic fragments from an earthenware plate.

Some of the glass contained bubbles indicative of older bottle glass manufacturing techniques. The amethyst glass dates to prior to 1917. The artifacts observed onsite represent a mix of material from the early and mid-20th century.

DC-03-20: Cabin and Historic Debris Scatter

This historic site is a small cabin (15 feet by 19 feet), three debris concentrations, and a scatter of hole-in-top cans located on the west bank of Jones Creek near the mouth of Robbins Canyon.

The cabin is close to the creek and is surrounded by dense vegetation and trees. The cabin measures 15 feet by 9 feet and was constructed with vertical milled siding and capped with a gabled roof. The doorway faces south with windows on both sides of the door. A green and white sign by the door reads: “Pack Rat Bed and (Get Your Own Damn) Breakfast”. The interior contained a wood-framed loft and was furnished with two wooden tables and a wooden counter. There was also a square chimney flue. The cabin was constructed using 4-inch-long wire nails with a few square nails used to fasten the siding.

Three artifact concentrations were identified during site recording. Concentration 1 consisted of paint cans and numerous metal food cans that included two cans closed using soldered seams. Artifacts observed in Concentration 2 consisted of window pane glass fragments, metal cans (including one hole-in-top), and ceramic sherds. Concentration 3 is located at the northern end of the site and was the largest concentration of the three. Among the artifacts comprising this scatter were numerous bottle glass fragments, a white canning jar lid, and over 20 hole-in-top metal cans.

The rest of the site area is characterized by a light-density scatter of hole-in-top cans and other can fragments along with amethyst, aqua, brown, clear, and olive bottle glass shards.

45KT513H (DC-03-22): Springfield Farm/Robbins Homestead and Prehistoric Lithic Scatter

The site consists of four structures and a historic debris scatter associated with the Springfield Farm. A prehistoric component consisting of a lithic scatter and associated fire-modified rock was also found while the site record was being updated (summarized in Section 5.1 above).

The Robbins cabin was initially recorded in 1974 for the Washington State Historic Inventory Project by Mrs. Manson F. Backus of Bellevue, Washington, who had owned the property with her husband for four years between 1946 to 1950. The Springfield Farm, including the Robbins cabin, was recorded in 1976 by Florence Lentz of the Washington Office of Archaeology and Historic Preservation and the farm was assigned the Smithsonian Trinomial 45KT513H. At the same time, the farmstead was nominated for the National Register of Historic Places by Florence Lentz. The site is now on the State Register of Historic Places

When NWAA personnel visited the site in August, 2002, during a reconnoiter of the Desert Claim project area, Mr. J. P. Roan, the current owner, told the crew that the Robbins cabin had been disassembled, moved, and reassembled at the Ellensburg, Washington, fairgrounds (Verbal communication to Ken Juell from J. P. Roan, August 16, 2002). When the farm was visited by the NWAA field crew in July, 2003, to update the site record and assess the current condition of the site, four structures were still standing: the granary, the Robbins boys bunkhouse, the creamery, and a log cabin thought to be a blacksmith's shop. In addition to these structures, the house foundation, fruit trees, planted willow trees, a well, a powerline, and mounds of rubble were still discernible.

DC-03-23: Historic Debris Scatter

The site is a small historic debris scatter located adjacent to Pheasant Road in an area measuring 30 feet north-south by 15 feet east-west. The debris included one gas or oil burner, a one-gallon rectangular steel antifreeze can ("Everready Prestone"), a one-gallon motor oil can, several bundles of bailing wire, one steel coffee can, four barrel hoops, a length of stove pipe, one piece of woven wire screen, one fragment of clay drain tile and one clear glass bottle base.

DC-03-25: Roan Farm

The site is an operating farm complex occupying a long gentle slope just north of Reecer Creek Road. According to the current owner, this farm is a part of the original Springfield Farm (DC-03-22) and some of the outbuildings date to the time of operation of that farm between the late 19th and early 20th centuries (Verbal communication from J. P. Roan to Leslie Norman [NWAA], July, 2003).

There are six currently standing historic structures on the site at the time of site recording: a creamery, a barn, a shop, a chicken coop, a granary, and a hog shed. Recent structures (less than 50 years old) include a mobile home, three corrugated metal grain silos, and a pumphouse. (The original farmhouse was originally located west of the mobile home but burned down in the 1960s according to J. P. Roan). Fragments of amethyst glass and one completely brass .12 gauge shotgun shell were observed on the bare ground around the SW corner of the shop.

The buildings are clad using either vertical board-and-batten or horizontal shiplap plank. The roofs of the structures are all gabled and most have been re-roofed with aluminum or composite

shingles except for the hog pen and the granary which still retain their wood shake roofs. Presumably, the barn and the creamery roofs were wood-shaked prior to renovation. The foundations were not visible on any of the structures except for the chicken coop which sits on a concrete foundation. Wire nails were observed in all of the structures except for the hog pen and the creamery which are currently not in use.

DC-03-26: White Ranch

This site is a large farm complex surrounded by pasture land and an irrigated alfalfa field on a long gentle slope. There was no evidence (such as a foundation, or a pile of collapsed wood) indicating a residence had been constructed on the farm; all the buildings recorded are associated with farm equipment and supplies storage. The complex includes eight standing structures, fenced pastures, a grain silo, and numerous pieces of farm machinery and other farm implements used for haying and stock raising. Some of the farm equipment observed during site recording included a bailer, manure spreader, cart, and grain drill.

The structures include a modern barn and seven historic structures: a machine shed, two utility sheds, two bunkhouses, fuel shed, and a tack shed. The three-sided shed is the largest of the historic buildings (60 feet by 15 feet) and has a recently installed tin roof. There are two small bunkhouses of which one has a small stall attached to it, presumably for a ranch hand to assist with the birthing of farm animals. The fuel shed is a small structure that may have been used as a privy at one time but now is used to hold a gas tank. A small wood building near the pasture was probably used as a tack shed. Most of the structures are log or post frame construction with lumber siding and are in good to fair condition. Only wire nails were used in construction. The two small utility sheds are currently in use.

DC-03-28: Hodges Residence

This site is a historic residence with two outbuildings located on the west side of Lower Green Canyon Road. (The house is currently occupied.) The main house and one shed on the property appear to be more than fifty years old. There is also a modern garage on the southeast corner of the property.

The main house is a one-story L-shaped side and back gable structure with a single front door. The poured concrete foundation is partially above ground. There are three concrete steps up to the front door. There are several windows on the main floor and in the basement. In general the windows were square single panels with sash and side lights. The house sides are covered with wood shingles. A new shop/garage has been added to the southeast corner of the house.

The shed is a 16 feet by 12 feet wood framed structure with a wood shingle roof resting on a poured concrete foundation. A wood and zinc roofed porch has been added to the east side of the shed.

The structures probably date from about 1930 to 1950.

DC-03-31: The North Branch Canal

The site is the North Branch Canal. The North Branch Canal was the last project in the Kittitas Irrigation District to be constructed and now managed by the Kittitas Reclamation District. A total of thirteen archaeological features were found along the portions of the canal within the project. The features were either bridges or culverts.

5.3 Other Resources

DC-03-12: Modern Lithic Scatter - Rockhounding Locality

The site is located on a gently sloping expanse of rocky scabland and is bisected by a dry intermittent drainage. Over two hundred pieces of lithic debitage were observed within an area measuring 100 meters by 60 meters. The debitage consisted mostly of shatter and split cobbles and pebbles with few flakes. All of the material was CCS and highly variable in color, texture, and translucence. Much of the surface in the site area showed evidence of recent excavation.

The site appears to be the result of modern rock hound activity. The artifacts exhibited features typical of those produced by a rock hammer including the absence of prepared platforms, shattering impacts, crushed platforms, and a lack of weathering on exposed surfaces. Only one flake in the site area exhibited attributes suggesting it may date to the prehistoric time period.

DC-03-13: Modern Lithic Scatter - Rockhounding Locality

The site is situated between two unnamed drainages that flow into separate stock ponds to the south. The site is a small dispersed lithic scatter consisting of a total of seven flakes and a split pebble core.

5.4 Discussion

This section presents a preliminary exploratory analysis of prehistoric site patterning with regard to the distribution of selected classes of artifacts or archaeological materials among the sites. The purpose of this analysis is to gauge the potential for the prehistoric sites to contribute to local and regional prehistory. If the sites do have such contributing properties, then they will be considered significant and will warrant further scientific treatment.

5.4.1 Prehistoric Site Patterning

Preliminary patterning among the 13 prehistoric sites was analyzed by partitioning the sites into a simple four-class typology based on site size and the number of artifact classes recorded for each site. The class boundaries were assigned at major breaks in the distribution modes for site area and the number of artifact classes represented on each site. Membership in one of the four classes was assigned according to the size of the site and the number of classes represented within the site boundaries. Sites were divided into “large” or “small” classes based on area, and were “simple” or “complex” based on the number of artifact classes found on the site. Table 5.2 shows the presence/absence data of the occurrence of classes on the sites. Row and column totals show the number of classes observed at each site and the number of

Table 5.2 Presence-Absence Occurrence of Artifact Classes and Archaeological Materials Among Prehistoric Sites Recorded During the Desert Claim Wind Power Project.

SITE (DC-03-)	ARTIFACT CLASS									NUMBER OF CLASSES
	FLAKE	PROJECTILE POINT	BIFACE	UTILIZED FLAKE	RETOUCHED FLAKE	SCRAPER	CORE	TESTED COBBLE	FMR[B]	
5	0.042	1	-	-	-	-	1	-	-	**3**
6	1	-	-	-	-	-	-	-	-	**1**
08	1	-	-	1	1	-	1	-	-	**4**
10	1	1	-	-	-	-	-	-	-	**2**
11	1	-	-	-	-	-	1	-	-	**2**
17	1	1	1	-	1	-	1	-	-	**5**
19	1	-	-	-	-	1	-	-	-	**2**
21	1	1	-	-	1	-	1	-	-	**4**
22	1	-	-	-	1	1	-	1	1	**5**
24	1	1	-	-	-	-	-	-	-	**2**
27	1	-	1	1	-	-	1	1	-	**5**
29	-	-	-	1	1	-	-	-	-	**2**
30	1	-	-	-	-	-	1	-	-	**2**
Total Sites	**12**	**5**	**2**	**3**	**5**	**2**	**7**	**2**	**1**	

[a] 1 = present; blank = absent.
[b] FMR = fire-modified rock

sites at which a particular artifact class is present, respectively. The table shows that, as expected, most (12, or 92%) of the sites contain flakes. Among the formal tool classes, cores are the most represented among the sites (7 sites) followed by retouched flakes (5 sites) and projectile points (5 sites). The rest of the artifact classes are distributed at low levels among the sites. No site contained all nine of the artifact classes, but three sites (23%) included five classes and just over half (n = 7, 54%) of the sites consisted of two or one classes.

Table 5.3 shows how the typology is set up, the site type definitions, and the number of sites included in each type. Table 5.4 shows the application of the site types to the prehistoric sites found during the project. In terms of complexity, the sites are about evenly divided between simple and complex sites but complexity does not appear to be a function of size since complex sites are evenly divided among small and large sites. Indeed, regression of the number of classes against site area indicates almost no correlation between site area and number of classes (r^2 = .16). Small, simple sites (Type I) are the most common site type (n = 6) and large, simple sites are the most poorly represented in the sample (n = 1).

Table 5.3 Four-part Classification Scheme for Prehistoric Sites Discovered During Field Survey.

COMPLEXITY:	SIZE	
	Small (≤4000 m^2)	Large (>4000 m^2)
Simple (≤2 classes)	I (n =6)	II (n = 1)
Complex (≥3 classes)	III (n = 3)	IV (n = 3)

Table 5.4 Assignment of Site Type to Prehistoric Sites Based on Site Area and Number of Classes.

SITE (DC-03-_)	AREA (M^2)	NO. OF CLASSES	TYPE I	TYPE II	TYPE III	TYPE IV
5	2602	3			X	
6	12214	1		X		
8	1039	4			X	
10	119	2	X			
11	1	2	X			
17	13627	5				X
19	92	2	X			
21	983	4			X	
22	10044	5				X
24	710	2	X			
27	75898	5				X
29	4	2	X			
30	1	2	X			
		Total:	6 (46%)	1 (8%)	3 (23%)	3 (23%)

The second step in the examination of the site patterning is to suggest the kind of activities that may have been performed at the site based on the formal characteristics of the site assemblages. Table 5.5 lists some informal interpretations of various lithic artifact types that commonly occur on prehistoric archaeological sites and Table 5.6 compares the formal site type against a list of possible activities that may have been performed at the site based on the presence or absence of artifact types.

Table 5.5 Suggested Functional Interpretations of Lithic Tool Classes Found on the Desert Claim Prehistoric Sites (derived from Salo 1985, Elston and Bullock 1994).

OBJECTS	FUNCTION(S)	ACTIVITY
Scrapers	Soft scraping	Fabricating
Debitage	Flaking	Tools used in manufacturing, and manufacturing byproducts
Cores	Flaking	
Bifaces (through middle stages)	Flaking	
Retouched flakes	Soft scraping	General Utility Tools
Late stage bifaces	Penetration/cutting	
Edge-modified pieces	Soft scraping	
Projectile points	Piercing	Weaponry

The variety exhibited among the sites in terms of possible activities represented by the artifact classes suggests that some sites may have functioned as camps from which forays were made to target specific resources; other sites appear to be localities created by people using the fan as a travel route from the Yakima River to the Wenatchee Mountains. Further analysis and research would be able to inform on the detailed relationships between the landform and land use patterns, and would provide data contributing to understanding regional land use patterns. Similar pattern analyses, though using slightly different classificatory systems and addressing slightly different research problems, have been used in nearby areas, most notably on the Yakima Firing Range (Benson et al. 1989; see also Miss and Campbell 2001). The results of the Desert Claim cultural resources survey appears to have potential to complement and contribute to these earlier studies.

Table 5.6 Inferred Functions of Prehistoric Sites.

SITE (DC-03-_)	NO. OF CLASSES	SITE TYPE	RANGE OF ACTIVITIES REPRESENTED
5	3	III	Flaking and piercing: Hunting, manufacturing
6	1	II	Flaking: Manufacturing byproducts
8	4	III	Scraping and flaking: Manufacturing, general processing
10	2	I	Piercing: Hunting
11	2	I	Flaking: Manufacturing byproducts
17	5	IV	Flaking, scraping, and piercing: Hunting, manufacturing, general processing
19	2	I	Flaking and scraping: Manufacturing byproducts, general processing
21	4	III	Flaking, scraping, piercing: Hunting, manufacturing, general processing
22	5	IV	Flaking and scraping: Hunting, manufacturing byproducts, general processing (site materials also includes FMR)
24	2	I	Flaking and piercing: Manufacturing byproducts, hunting
27	5	IV	Flaking and scraping: Manufacturing byproducts, general processing (lithic procurement site)
29	2	I	Scraping: General processing or fabricating
30	2	I	Flaking: Manufacturing byproducts

The variety exhibited among the sites in terms of possible activities represented by the artifact classes suggests that some sites may have functioned as camps from which forays were made to target specific resources; other sites appear to be localities created by people using the fan as a travel route from the Yakima River to the Wenatchee Mountains. Further analysis and research would be able to inform on the detailed relationships between the landform and land use patterns, and would provide data contributing to understanding regional land use patterns. Similar pattern analyses, though using slightly different classificatory systems and addressing slightly different research problems, have been used in nearby areas, most notably on the Yakima Firing Range (Benson et al. 1989; see also Miss and Campbell 2001). The results of the Desert Claim cultural resources survey appears to have potential to complement and contribute to these earlier studies.

5.4.2 Historic Site Patterning

The range of variation among the historic sites was examined by using a simple classification that categorized sites based on the presence of structures (Table 5.7). Three classes were defined: 1) sites that were debris scatters with no evidence for structures (n = 8) , 2) sites with remains of structures but no standing structures or buildings (n = 3), and 3) sites with standing structures and buildings (n = 7). Although not a building as such, North Branch Canal is included in the third class because it is a still extant built feature of the landscape.

Table 5.7 also provides data from documentary sources showing when the claim was purchased or proved up and shows the role that the Northern Railroad land holdings played in settling this portion of Kittitas Valley (Figure 5.5). The documentary evidence combined with the archaeological remains found at the historical sites with structural remains or standing structures and buildings indicate that the historical archaeological data garnered during this project has the potential to inform on changes in historic land use. Much of the data appears to fall at the beginning of the period when the rest of the valley was beginning to pass from subsistence farming to increasingly intensive, highly capitalized farming that characterizes the twentieth century.

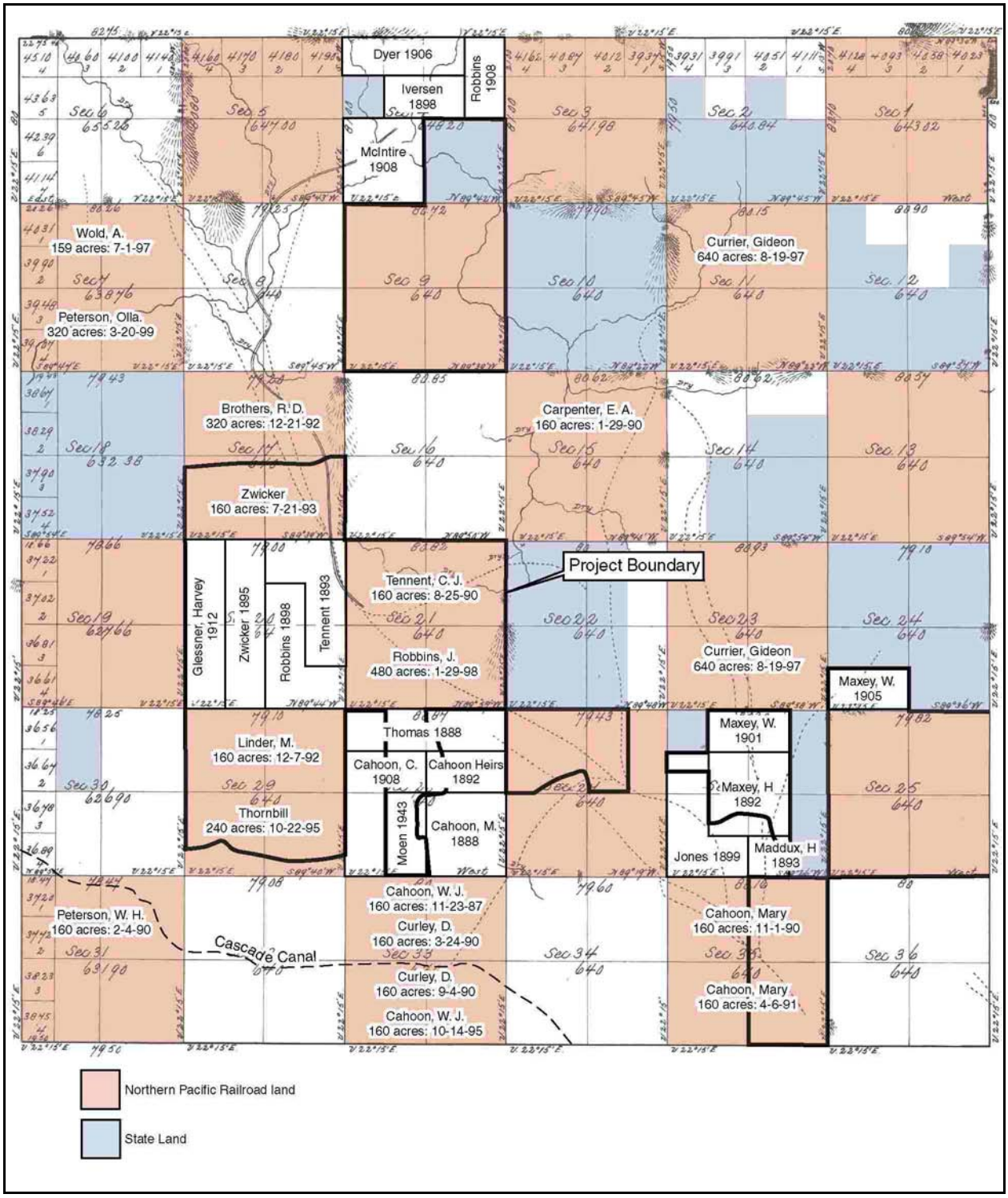

Figure 5.5. 1869 GLO plat of T. 19 N., R. 19 E., showing homestead boundaries (see also Appendix B)

Table 5.7 Classification of Historical Sites Based on Presence of Structures with Additional Data on Initial Homesteaders in the Project Area.

SITE (DC-03-_)	DESCRIPTION	HOMESTEAD DATA			
		NAME	DEED TYPE	DATE	ACRES
Sites with standing structures or buildings:					
15	Farmstead: foundation, razed barn, chicken coop, another collapsed structure.	Zwicker, Barthel	Northern Pacific	1895	160
20	Cabin and debris scatter of cans, window glass, and ceramics.	No data			
22	Springfield Farm/Robbins Homestead	Tennant, Charles	Northern Pacific	1890	240
25	Roan Farm with six standing structures: creamery, barn, ship, chicken coop, granary and hog shed.	Robbins, John	Northern Pacific	1898	480
26	White Ranch: machine shed, two utility sheds, fuel shed, and tack shed.	Thornhill, John	Northern Pacific	1889	240
28	Single family residence.	Thornhill, John	Northern Pacific	1895	240
31	North Branch Canal	Constructed in the late 1920s, first water delivery in 1932.			
Sites with structural remains:					
2	Debris scatter with possible root cellar	No data			
3	Homestead site (Zumbrunner/Morrison)	Zumbrunner, Victor	Homestead	1906	160
14	Homestead: Collapsed structure, foundation, and depression.	Zwicker, Barthel	Homestead	1895	160
Debris scatters:					
1	Cans and other metal fragments, glass, ceramic				
4	Can scatter				
6	Window glass, tin can, lumber				
7	Bottle glass, ceramics, can fragments				
9	Ceramics, bottle glass, ceramics				
16	Diversity of objects along with glass, metal and ceramic fragments.				
18	Metal cans and bottle glass				
23	Concentration of objects				

6. EVALUATION AND RECOMMENDATIONS

Washington state laws addressing cultural resources include the Indian Sites and Resources Act (RCW 27.53) and the Indian Graves and Records Act (RCW 27.44). The first Act prohibits disturbance or excavation of historic or prehistoric archaeological resources on state or private land without a permit from the state. The second Act prohibits knowingly disturbing a Native American or historic grave.

State laws provide no measure of significance for sites since they were crafted with the intention of preventing damage to all. Nonetheless, some properties have greater scientific or historic value than others and federal criteria for significance provide a useful way to measure this value. Under federal guidelines (36 CFR part 800) properties must be at least 50 years old, possess integrity of physical characteristics, and meet at least one of four criteria of significance. Significance is present for properties that are A) associated with events that have made a significant contribution to the broad patterns of our history; B) that are associated with the lives of persons significant in our past; C) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or D) that have yielded, or are likely to yield, information important in prehistory or history. Historic properties may include archaeological sites, buildings, structures, districts, or objects.

Table 6.1 presents recommendations of significance based on these criteria. Prehistoric and historic archaeological sites are generally evaluated using criterion D, and for the prehistoric sites, the determination of significance was buttressed by the preliminary data analysis presented in Chapter 5. This exploratory analysis indicates that some of the prehistoric sites in the project area possess enough archaeological information to fulfill the data requirements of archaeological research questions that seek to link archaeological contexts to past human activities.

Table 6.1 Determination of Significance for Cultural Resources Newly Recorded or Revisited in the Desert Claim Wind Power Project Area.

FIELD NO. DC-03-	COM-PONENT	DESCRIPTION	AGE	THEME	SIGNI-CANCE
Sites:					
1	H	Historic debris scatter near cattle track	1900 - 1940	Stock Raising	N
2	H	Historical debris scatter and depression	1900 - 1930	Agriculture / Settlement	N
3	H	Zumbrunner/Morrison Homestead	1880 - 1940	Agriculture / Settlement	Y
4	H	Historic can dump	1940s	Agriculture	N
5	H/P	Lithic Scatter and historic bridge	Late Prehistoric / Early 20th C	Prehistoric / Settlement	N
6	H/P	Historic debris and prehistoric lithic scatter	Prehistoric/ 1900 - 1950	Prehistoric / Stock Raising	N
7	H	Small historic scatter	1940 - 1955	Agriculture	N
8	P	Lithic scatter	Prehistoric	Prehistoric	Y
9	H	Historic debris scatter	1940 - 1960	Agriculture	N
10	P	Lithic scatter	Prehistoric	Prehistoric	N
11	P	Lithic scatter	Prehistoric	Prehistoric	N

Table 6.1 Determination of Significance for Cultural Resources Newly Recorded or Revisited in the Desert Claim Wind Power Project Area.

FIELD NO. DC-03-	COM-PONENT	DESCRIPTION	AGE	THEME	SIGNI-CANCE
14	H	Historic debris	1880 - 1930	Agriculture / Settlement	Y
15	H	Historic structures and historic debris	1900 - 1940	Agriculture / Settlement	Y
16	H	Historic debris scatter	1920 - 1945	Agriculture	N
17	P	Lithic scatter	Late Prehistoric	Prehistoric	Y
18	H	Historic debris scatter	1900 - 1940	Agriculture	N
19	P	Lithic scatter	Prehistoric	Prehistoric	N
20	H	Historic cabin and historic debris scatter	1880 - 1930	Agriculture / Settlement	Y
21	P	Lithic scatter	Prehistoric	Prehistoric	Y
22	H/P	Springfield Farm (45-KT-513h update) / prehistoric lithic scatter	1880 – 1950 / Prehistoric	Agriculture / Settlement Prehistoric	Y
23	H	Historic debris scatter	1925 – 1950	Agriculture	N
24	P	Lithic scatter	Prehistoric	Prehistoric	N
25	H	Roan Farm	1900 – Modern	Agriculture / Settlement	Y
26	H	Historic farm (White Ranch)	1900 – Modern	Agriculture / Settlement	Y
27	P	Lithic scatter / procurement site	Prehistoric	Prehistoric	Y
28	H	Hodges Residence	1925 - Modern	Agriculture / Suburban Development	Y
29	P	Lithic scatter	Prehistoric	Prehistoric	N
30	P	Lithic scatter	Prehistoric	Prehistoric	N
31	H	North Branch Canal	1926 - Modern	Irrigation Development	Y

Although some of the lithic scatters can provide information on prehistoric lithic technology and land use, extremely small sites with low artifact counts and little diversity in tool types are viewed as having exhausted their data potential. These sites are, therefore, considered to have less importance than other prehistoric sites. Historical properties with standing structures or buildings are most often evaluated using criteria A or C. Integrity standards require that a historical property be attributable to the period through documentation or artifacts, be identifiable as one of the contributing property types, and have integrity of physical association of features and artifacts. For this project certain features and the farmsteads provide a good representation of lifeways of the late 19th/early 20th century during the early period of settlement and when agriculture was developed in the Kittitas Valley.

The isolates are not included in the following discussion because there is no evidence that they are significant beyond this recording. They provide no additional research opportunities nor meet the standards of either the historic criteria that would make them potentially eligible for inclusion on the NRHP. The historical isolates include flattened food and beverage tins, fragments of glass vessels, fragments of domestic utilitarian and fine ceramic ware types, abandoned machinery, and fragments of other metal tools and artifacts.

SEPA Checklist Item 13 (*Historic and Cultural Preservation*) provides suggestions for ways of mitigating adverse effects to historic properties. These can take several forms, including, but not limited to,

- Avoidance of the site,
- Maintaining or restoring the integrity of the site or landmark to the extent possible,
- Relocating the structure or artifact,
- Meeting tribal needs for the sanctity of the location.

However, SEPA does not discuss the case of unavoidable impacts. Significant sites containing information that can contribute to history or prehistory in the region will require appropriate treatments that will ensure recovery of information capable of addressing the prehistoric and historic research needs of the region.

Five prehistoric sites were deemed to possess enough information to contribute to scientific and cultural understanding of human land use, settlement, and subsistence in the Kittitas Valley. The discovery of a prehistoric component at the Springfield Farm (DC-03-22) containing fire-modified rock was an unexpected, and important, discovery based on low prior expectations about the possibility of residential site types to be present on the fan surface. The large lithic procurement site (DC-03-27) has potential to make an important contribution to scientific knowledge about toolstone procurement and its inclusion in the seasonal round. The remaining three sites, in addition to possessing the formal and functional properties described in Chapter 5 above, exhibit discrete, well-bounded, high-density clusters of artifacts that can potentially inform about re-use of localities in the landscape.

Nine of the historic cultural resources recorded or updated during the survey were deemed to possess artifacts and features that made them important to understanding regional history. The majority of these sites still retain standing structures and buildings. The Morrison homestead (DC-03-03) is the exception, but retains enough information about the farmstead lay-out that detailed study of the homestead can inform about the spatial arrangement and use of space on one of the earlier homesteads in the project. The historical sites also retain enough artifacts and features to provide information on spatial arrangement and use; additionally, the sites retain enough time-diagnostic artifacts and features to document changing land use through time.

The single-family residence (DC-03-28) is particularly interesting in light of historic land use practices above the North Branch canal because it may represent an early suburban encroachment on land formerly exclusively devoted to agricultural and livestock production.

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