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Colorado Water Resources  
Power Development Authority

SUPPLEMENTAL REPORT:

CULTURAL RESOURCE INVESTIGATIONS  
IN STAGE ONE AREAS OF THE  
BASIN STUDY EXTENSION,  
CACHE LA POUFRE HYDROELECTRIC PROJECT,  
LARIMER COUNTY, COLORADO

by

Marcus P. Grant  
Christian J. Zier  
Robert G. Rosenberg

Prepared for

Envirosphere Company  
Bellevue, Washington

and

Colorado Water Resources and Power Development Authority  
Denver, Colorado

by

Centennial Archaeology, Inc.  
Fort Collins, Colorado

Principal Investigator: Christian J. Zier

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## ABSTRACT

Class I (overview) and Class III (intensive) cultural resource inventories were conducted for the Cache la Poudre Hydroelectric Project basin extension study in eastern Larimer County, Colorado. Class I background research was undertaken within a contiguous 82-square-mile area that includes Stage 1, 2, and 3 facilities (mainstem reservoir, Glade Reservoir, and Forebay reservoir, respectively). Class III survey was carried out in a 6,390-acre area consisting of the proposed mainstem reservoir floodpool and a half-kilometer-wide buffer zone. Three hundred acres in two separate parcels within the Class III area could not be surveyed due to denial of access by private landowners.

Class I research indicated the presence of 39 previously recorded cultural resources, of which 25 are prehistoric and 14 are historic. One site, an historic ice house, is enrolled on the National Register of Historic Places (NRHP). Most of the remaining known sites have not been assessed per NRHP eligibility criteria. Only a very small portion of the Class I study area had been systematically surveyed for cultural resources.

Twenty-nine sites were recorded as a result of the Class III survey. Another site is known to occur within the survey area, bringing the total to 30. Of this number, 10 are prehistoric and 20 are historic. Prehistoric sites consist of open camps and lithic scatters with and without hearths and stone circles, and rock shelters with deeply stratified deposits. They span the Paleo-Indian through Late Prehistoric stages. Historic sites include homesteads, miscellaneous structures and structural remnants, bridges, canals, a mine, and a recently abandoned water filtration facility. They date from the late 19th to late 20th century. Eighteen isolated finds were also recorded, of which eight are prehistoric and 10 are historic.

Six of 29 newly recorded sites are assessed as eligible for NRHP inclusion. The single previously recorded site could not be reevaluated but is potentially NRHP-eligible. Of six significant sites, four are prehistoric and two are historic. All would be partially or completely inundated if the mainstem reservoir were built as presently proposed, and impacts would be severe. Recommended mitigation measures consist of varying combinations of excavation, instrument mapping, photographic documentation, and archival research. Estimated mitigation costs range from \$3,500 to \$40,000 per sites, with a total estimated cost of \$94,500.

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## CHAPTER ONE

### INTRODUCTION

#### Project Description and Study Objectives

The Northern Colorado Water Conservancy District (hereafter NCWCD) initiated feasibility studies in 1986 for reservoir storage and hydroelectric power generating facilities along the Cache la Poudre River drainage in Larimer County, Colorado. These studies are an outgrowth of investigations begun in the early 1980s to determine the viability of providing additional water storage in the Cache la Poudre Basin to help minimize the effects of drought in northeastern Colorado and improve the management of water resources in this region. NCWCD has been granted a preliminary permit from the Federal Energy Regulatory Commission (FERC) to consider hydroelectric power generating components in the configurations of proposed projects. The initial project configuration consisted of three reservoirs: Glade Reservoir, the Cache la Poudre Afterbay (Grey Mountain) Reservoir, and the Cache la Poudre Forebay Reservoir (NCWCD 1987).

Feasibility studies for the project were initiated in 1986 using funding from a private entity interested in marketing the electric power that could be generated from the hydroelectric facilities. However, NCWCD recognized the necessity of considering all viable alternatives for water supply and potential hydroelectric power generation before finalizing plans for a particular project. Therefore in 1985, concurrent with preparing the application for an FERC Preliminary Permit, NCWCD submitted an application to the Colorado Water Resources and Power Development Authority (hereafter Development Authority) to perform a basin-wide study to independently evaluate alternative measures that would provide for the efficient and environmentally sound development of water and hydroelectric power resources in the Cache la Poudre Basin. It was the specific intent of this basin-wide study to identify and evaluate any alternative measures, including nonstructural and conservation measures as well as structural measures, that might be less costly and have fewer environmental impacts than the project proposed by NCWCD in the FERC preliminary permit application. The Development Authority accepted NCWCD's application and initiated the Cache la Poudre Basin study during the summer of 1985.

The Development Authority's Cache la Poudre Basin Study was completed in 1986 and confirmed a number of the conclusions NCWCD had reached concerning water supply storage and the potential for hydroelectric power generation in the Poudre Basin. First, the Basin Study demonstrated the need for additional water supply storage in northeastern Colorado to minimize the economic consequences of a major drought. Secondly, although 32

nonstructural, water conservation, and water management measures were identified and evaluated, the Basin Study concluded that even if the viable nonstructural measures were to be implemented, the need for additional water supply storage would not be eliminated. Thirdly, based on prefeasibility evaluations of five damsites on the mainstem of the Cache la Poudre River below Poudre Park, one damsite on the South Fork, three damsites on the North Fork (including replacement or modification of two existing dams), and one off-channel damsite, a preferred configuration of a multiple-purpose water supply project was recommended based on consideration of pertinent economic, environmental, and engineering factors. The configuration of the recommended project was very nearly the same as the project configuration proposed by NCWCD and described in the preliminary permit application to FERC. The main difference between the project configuration originally proposed by NCWCD and the preferred configuration of the Development Authority's Basin Study was the location of the mainstem damsite, which in the latter study is just below the confluence of the mainstem and the North Fork of the Cache la Poudre River.

Using funding provided by the private entity interested in marketing the hydroelectric generating capacity of the proposed project, NCWCD initiated consultations with a number of Federal and State resource agencies and began detailed studies to assess various impacts on key environmental resources to test project feasibility. However, during the months following publication of the Development Authority's final report in January 1987, the private entity involved in marketing the hydroelectric generating capacity of the proposed project was unable to continue financing the NCWCD's environmental studies due to changing economic conditions.

Because of the resulting funding restrictions, it became necessary for NCWCD to temporarily suspend studies concerning the pumped-storage hydroelectric components of the proposed project. Additionally, without potential revenues from the pumped-storage hydroelectric generating capacity of the project, a reevaluation of the water supply components of the proposed project was also appropriate. Because of the need to complete key environmental studies in order to test the feasibility of any water storage project in the Poudre Basin, NCWCD applied to the Development Authority for funding to extend the Basin Study. The Development Authority agreed to extend the Basin Study to complete the key environmental studies and perform additional engineering and economic analyses to preliminarily assess the feasibility of a water storage project in the Cache la Poudre Basin without pumped-storage hydroelectric components.

To facilitate the preliminary feasibility evaluation, NCWCD has proposed that the Cache la Poudre Project, as originally configured, be divided into three separate and distinct stages. Each stage would be studied, evaluated, and implemented separately, if feasible. The three stages are described as



follows (NCWCD 1987):

Stage 1: The first stage consists of the mainstem water storage reservoir and a conventional hydroelectric plant of about 20 MW capacity for power generation from flow releases to the Poudre River. The mainstem reservoir would be located downstream of the community of Poudre Park and could provide approximately 200,000 acre-feet of water storage at a normal reservoir water surface elevation of 5630 ft. with a surface area of about 1,250 acres. The reservoir could be formed by constructing a dam at the Grey Mountain site two miles downstream of the confluence of the mainstem and North Fork of the Cache la Poudre River, or by constructing a dam just below the confluence which would result in 50,000 acre-feet less water storage. If Stage 2 is implemented, the mainstem reservoir would also provide the means of diverting water into storage in Glade Reservoir. If Stage 3 is implemented, the mainstem reservoir would also serve as the afterbay for the pumped-storage hydroelectric plant.

Stage 2: The second stage would consist of the Glade Reservoir, which would provide water storage in a natural depression called the Hook and Moore Glade north of Ted's Place off of the Poudre River. The facilities necessary to divert water from the Stage 1 mainstem reservoir would also be included in Stage 2. Glade Reservoir could provide approximately 320,000 acre-feet of water storage at a normal reservoir water surface elevation of 5600 ft. with a surface area of about 2,500 acres.

Stage 3: The third stage would consist of the pumped-storage hydroelectric plant and necessary transmission facilities. The power plant could be constructed at or below ground surface on the north shore of the mainstem reservoir and could have a generating capacity of approximately 2100 MW. The third stage would also include the Cache la Poudre Forebay Reservoir for the operation of the pumped-storage hydroelectric plant. This reservoir would provide 30,000 to 50,000 acre-feet of storage covering 200+ acres at a normal reservoir water surface elevation of 7000 ft.

Funding provided by the Development Authority for the extension of the Basin Study has been used primarily to examine the Stage 1 project described above. Available data suggest that the Stage 1 mainstem reservoir offers the most economic potential for water storage. Environmental studies being completed during the Basin Study Extension are intended to quantify a wide array of resources, to assess the potential impacts of the proposed project on those resources, and to identify possible mitigation measures (NCWCD 1987). Cultural resources investigations are one element of this study.

The objectives of cultural resources investigations are as follows:

- (1) To conduct background research for the purpose of identifying known sites in the project vicinity, areas that have been previously inventoried, and critical cultural

issues that may adversely affect project plans;

- (2) To conduct intensive inventory of areas to be affected by the project, and identify and record all cultural resources;
- (3) To evaluate all cultural resources per significance criteria of the National Register of Historic Places (36 CFR 60);
- (4) To assess the nature and degree of project impacts to all significant sites;
- (5) To assess the feasibility of the project in terms of cultural resource concerns;
- (6) To propose mitigation strategies (including alternatives) for all threatened significant sites; and
- (7) To prepare a final report of all cultural resource investigations.

Although the cultural resources investigations described in this report were designed principally as an element of the overall feasibility study, they were undertaken in such a manner that compliance needs will be partially satisfied should project plans move forward. (A discussion of the legal basis for the study may be found in a later subsection.)

#### Cultural Resources Scope-of-Work

Cultural resources investigations are designated Task 13 of the Basin Study Extension. The cultural resources Scope-of-Work (SOW) is comprised of eight subtasks. These are:

<u>Subtask No.</u>	<u>Description</u>
13a	Agency Consultation
13b	Project Area Background Research
13c	Field Investigations
13d	Data Processing and Analysis
13e	Significance Evaluation and Effects Assessment
13f	Mitigation Measures
13g	Feasibility Assessment
13h	Task Report

Agency Consultation (Subtask 13a), which entailed solicitation of USDA-Forest Service and State of Colorado/Office of Archaeology and Historic Preservation (OAHP) comment on the initial SOW, was undertaken in advance of the other subtasks. The results of all work conducted under Subtasks 13b through 13g are subsumed under the final subtask, Task Report (13h). This information is presented in the appropriate report sections.

It is important to note that the geographical scope of the study shifted dramatically between Subtask 13b (Project Area Background Research) and Subtask 13c (Field Investigations). Because of its long-term relevances to the Cache la Poudre River Basin study and the relative ease with which data could be collected, background research was conducted within a contiguous block of 82 square miles (52,480 acres) encompassing all facilities associated with the three project stages described above. Conversely, field investigations were undertaken only within the Stage 1 mainstem reservoir floodpool and an associated narrow buffer zone identified specifically for the cultural resources study. The area examined in this phase of the study is just under 10 square miles (6390 acres), less 300 acres excluded due to denial of access by landowners. Study area boundaries and legal locations of affected lands are described below.

#### Project Area Location

The project area is located in east-central Larimer County, Colorado (Figure 1). The parcel targeted for general background research (Subtask 13b) is irregularly shaped. The eastern boundary lies approximately 3 miles to the east of U.S. Highway 287 where that route traverses the Hook and Moore Glade; the northern boundary, which is stepped, runs from North Poudre Reservoir No. 15, westward across Highway 287 just north of Owl Canyon, and southwestward to a point in Hewlitt Gulch 3.5 miles north of Poudre Canyon; the western boundary parallels Hewlitt Gulch on its west side; and the southern boundary trends easterly and southeasterly from lower Hewlitt Gulch to the north end of Horsetooth Reservoir, through the community of Bellevue, and then northeasterly to a point just east of Curtis Lake. Legal descriptions of lands included in this phase of the study are as follows:

T7N, R69W, Section 6  
T7N, R70W, Section 1  
T8N, R69W, Sections 4-9, 16-18  
T8N, R70W, Sections 1-6, 8-16, 23-26, 36.  
T8N, R71W, Sections 1, 12  
T9N, R69W, Sections 4-9, 16-21, 28-33  
T9N, R70W, Sections 1, 9-16, 21-36  
T9N, R71W, Sections 23-26, 35-36

Map coverage of these areas is provided by the Buckeye, Horsetooth Reservoir, Laporte, Livermore, Poudre Park, and Wellington, Colorado USGS 7.5' Quadrangles.

The intensively surveyed area associated with the mainstem reservoir begins approximately 2 miles upstream from the mouth of Poudre Canyon and extends upstream to the north and west along the mainstem of the Cache la Poudre River some 6 miles to Poudre Park (Figure 2). The survey area also includes the lower 6 miles

Figures 1 and 2

of the North Fork of the Cache la Poudre River, which extends northward from its point of confluence with the mainstem in Poudre Canyon. The intensively surveyed area, including the aforementioned buffer zone, varies in width from less than 0.25 miles to nearly 2 miles. Legal descriptions of lands included within the mainstem reservoir survey area are as follows:

T8N, R70W: Section 3, NE 1/4, W 1/2 of SW 1/4;  
Section 4, all but portion of E 1/2 of NE 1/4;  
Section 5, all but portion of S 1/2 of S 1/2;  
Section 6, N 1/2, SE 1/4, W 1/2 of SW 1/4;  
Section 7, NE 1/4 of NE 1/4;  
Section 8, E 1/2 of E 1/2;  
Section 9, all but SW 1/4 of SW 1/4 and SE 1/4 of SE 1/4;  
Section 10, W 1/2 of W 1/2;  
Section 16, N 1/2 of N 1/2.

T8N, R71W: Section 1, E 1/2, E 1/2 of W 1/2.

T9N, R70W: Section 9, SE 1/4;  
Section 10, SW 1/4;  
Section 15, NW 1/4, W 1/2 of SW 1/4;  
Section 16, all but W 1/2 of W 1/2;  
Section 21, all but W 1/2 of W 1/2;  
Section 22, W 1/2 of NW 1/4, SW 1/4;  
Section 27, W 1/2;  
Section 28, all but NW 1/4 of NW 1/4 of NW 1/4;  
Section 29, S 1/2 of NE 1/4, SE 1/4;  
Section 31, S 1/2;  
Section 32, S 1/2, NE 1/4;  
Section 33, all;  
Section 34, W 1/2, SW 1/4 of NE 1/4, NW 1/4 of SE 1/4.

T9N, R71W: Section 36, SE 1/4 of SE 1/4.

Map coverage of the field survey area is provided by the Laporte, Livermore, and Poudre Park USGS 7.5' Quadrangles.

#### Project Administrative Data

All cultural resource investigations were funded by the Colorado Water Resources and Power Development Authority. The Development Authority retained Envirosphere Company of Bellevue, Washington to coordinate and manage several subconsultants performing various environmental studies. Envirosphere in turn entered into a subcontracting agreement with Centennial Archaeology, Inc. (CAI) (Purchase Contract No. ES-7247, dated July 10, 1987). All cultural resource investigations were undertaken by CAI personnel with the exception of historical overview and evaluation studies, which were handled by Robert G.

Rosenberg under a consulting agreement with CAI. Christian J. Zier served as Principal Investigator and Marcus P. Grant as Field Supervisor. Daniel A. Jepson acted as Crew Chief, and Robert G. Rosenberg as Project Historian. Full-time field crew members were William N. Fallon and Anna P. Harrison. Short-term crew members were Andrea M. Barnes and Elaine Olson. Charles M. Prewitt, Project Manager, administered cultural resource and other environmental studies for Envirosphere Company. Overall management of this and other studies was provided by Karl Dreher, NCWCD, and Blaine Dwyer, Colorado Water Resources and Power Development Authority.

Background research was conducted between June 7 and August 14, 1987. Field investigations were initiated on August 18 and concluded October 6. The remaining subtasks were conducted between early October 1987 and late January of 1988.

All field investigations were conducted under the terms of a Cultural Resource Special Use Permit issued to Centennial Archaeology, Inc. by USDA-Forest Service/Arapaho, Roosevelt and Routt National Forests (expiration date, April 1989) and Archaeological Permit No. 87-7 issued by the State of Colorado/Colorado Historical Society (expiration date, December 31, 1987).

Field notes and other records resulting from the study are filed permanently with Centennial Archaeology, Inc. in Fort Collins, Colorado. Artifacts collected during fieldwork are curated permanently by the University of Colorado Museum, Boulder.

#### Legal Background of the Study

Cultural resources investigations on Federally-owned and managed lands, and those potentially affected by undertakings requiring Federal licensing, are supported by a battery of statutes which seek to preserve and protect properties of archaeological and historical significance.

The Act for the Preservation of American Antiquities (1906), often referred to simply as the "Antiquities Act", first established the Government's responsibility for protection of prehistoric and historic remains on Federally owned or administered lands. This act established a permitting system to enable qualified institutions to study cultural properties while mandating that persons in violation be fined or imprisoned. The Archeological Resources Protection Act (ARPA) of 1979 essentially serves to update and strengthen the original act. ARPA sets requirements for permitting, mandates assessment of impacts, and stipulates penalties for violations of its terms.

The Reservoir Salvage Act of 1960 specifies that an attempt shall be made to recover historical or archaeological data

affected by construction of a dam by any Federal agency or Federally licensed agency. Any reservoir greater than 5000 acre-feet or 40 surface acres is subject to the terms of the statute (McGimsey 1972:117).

Cultural resource inventories on Federal lands are required specifically under the National Historic Preservation Act (NHPA) of 1966 (as amended; PL 96-515, 1980). NHPA is perhaps the single most significant piece of legislation of its kind. This act created the National Register of Historic Places in its modern form, and in Section 106 mandated that "The head of a Federal Agency having...jurisdiction over a proposed Federal or Federally assisted undertaking...shall prior to the approval of the expenditure of any Federal funds on the undertaking...take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register." Executive Order 11593 of 1971 (Protection and Enhancement of the Cultural Environment) specifically invokes NHPA but also makes reference to the National Environmental Policy Act (below) and earlier statutes in directing that Federal land-holding agencies inventory their lands for cultural properties and make appropriate nominations to the National Register.

The Section 106 process, set forth in 36 CFR Part 800 (revised as October 1, 1986), provides for coordination among the Advisory Council of Historic Preservation (ACHP), the appropriate State Historic Preservation Officer (SHPO), and the Federal agency involved in an undertaking. The objectives of the process are to identify and evaluate cultural properties, assess effects, facilitate consultation among key Federal and state entities, and ultimately to provide direction such that an undertaking may proceed. Recent changes reduce the overall involvement of ACHP, and encourage joint agency-SHPO evaluations of National Register eligibility.

It was the intent of the National Environmental Policy Act (NEPA) of 1969 to create an atmosphere of national environmental concern. In Title I it states that "...it is the continuing responsibility of the Federal Government to use all practicable means...to improve and coordinate Federal plans, functions, programs, and resources to the end that the nation may...preserve important historic, cultural, and natural aspects of our national heritage..." NEPA leaves little doubt that archaeological properties are to be considered an element of the environment as defined by the law.

The Archeological and Historic Preservation Act (AHPA) of 1974 (PL 93-291) established procedural guidelines and set monetary limits for Federal agencies involved in undertakings that threaten cultural resources. The act applies in cases where agencies are directly engaged in undertakings or where Federal licensing is involved. The act directs that up to one percent of the total funding appropriated for an undertaking may be expended

on mitigation of adverse impacts to known National Register sites. The one percent limitation may be waived, per Section 208(3) of the 1980 amendments to the NHPA (PL 96-515). In emergency discovery situations the Department of Interior's Department Consulting Archaeologist (DCA), acting under AHPA, may make decisions as to National Register significance and, if appropriate, direct that immediate mitigative actions be carried out. No funding limit exists under AHPA for emergency discovery situations.

Most recently, the American Indian Religious Freedom Act (AIRFA) of 1978 has mandated that Federal agencies and departments protect and preserve Native American religious cultural rights and values. In practice, AIRFA has developed into a set of procedures whereby tribal representatives are notified and asked to comment on federally-related actions which may adversely affect known sites of religious or cultural value. The Archeological Resources Protection Act (ARPA) of 1979 (above) specifically references AIRFA with respect to protection of culturally significant sites.

Certain responsibilities toward cultural resources in the context of the Cache la Poudre Basin Study Extension are outlined in a Memorandum of Understanding between the USDA-Forest Service and the Northern Colorado Water Conservancy District, dated April 4, 1986. In the Memorandum the NCWCD agreed to insure that the cultural resource contractor was in possession of a valid permit to conduct field studies, and that a written proposal be submitted to the Forest Service for approval.

Cultural resources on State of Colorado lands are protected under Colorado Revised Statute 24-80-401 through 409 (1973). This statute places responsibility for issuance of permits to perform archaeological and paleontological investigations on State lands with the Colorado Historical Society, and declares that violation of any portion of the act shall be regarded as a misdemeanor.

## Project Management Summary

### Summary of Results

Class I-level background research performed on a continuous 82-square mile (52,480-acre) encompassing facilities associated with the three stages of the Cache la Poudre Project identified 39 previously recorded cultural resources. Twenty-five of these sites are prehistoric (aboriginal) and the remaining 14 are historic (Euro-American). Seven are potentially eligible for inclusion on the National Register of Historic Places (NRHP) although no sites within the study area are presently enrolled on the NRHP. The Class I research demonstrated that most of the study area has not been systematically inventoried for cultural



resources.

Class III inventory was conducted within the Stage 1 mainstem reservoir and an associated half-kilometer-wide buffer zone, a total area of 10 square miles (6390 acres). A small portion of this area was excluded from the inventory for reasons described below. The approach to inventory combined intensive examination of all areas exhibiting slopes of ten degrees or less with reconnaissance survey of steeper slopes.

Twenty-nine sites were recorded as a result of the field inventory. Another site had been recorded previously within the survey area, raising the total to 30. Of this number, 20 are prehistoric and ten are historic. Eighteen isolated finds (IFs) were also recorded of which eight are prehistoric and ten are historic. Subsequent to the inventory four sites were formally test excavated to facilitate assessments of significance. Six sites (four prehistoric, two historic) are evaluated as eligible for NRHP inclusion and are recommended for various forms of mitigative action. The remaining 23 newly recorded sites and all 18 IFs are not NRHP-eligible, and no further management actions are recommended with regard to these resources. The single previously recorded site within the survey area was not evaluated per National Register criteria and no management recommendations are provided. Recommended mitigation measures include protection/avoidance, detailed documentation of historical architecture, and partial excavation, depending upon the characteristics of the individual cultural resources and the nature of the impacts that would be likely to accrue if the undertaking proceeded to the construction phase.

#### Research Constraints

Class I background investigation was typically constrained by a general lack of prior survey coverage throughout most of the research area. As a result, it is difficult to provide accurate estimates as to the abundance, nature, and distribution of archaeological and historical sites within the area. The single limitation imposed on field inventory was the denial of access to certain private lands in Poudre Canyon. Three hundred acres comprising 4.7% of the Class III survey area were not inspected because of this problem. Some unsurveyed areas have a higher than average probability of containing cultural resources because they occur in inner canyon settings with relatively gentle slopes.

## CHAPTER TWO

### ENVIRONMENT

#### General Environmental Setting

The study area encompasses portions of the adjoining canyons of the Cache la Poudre River and North Fork of the Cache la Poudre River, located within the foothills of the northern Colorado Front Range (Figures 3, 4). This area lies in the Southern Rocky Mountains physiographic province immediately west of the Plains-Foothills transition zone.

The Cache la Poudre River traverses the Colorado Front Range from west to east, originating in the Alpine zone of the Laramie Mountains. The river terminates within the Plains-Foothills transition zone, entering relatively open, rolling terrain immediately east of the study area. The North Fork of the Cache la Poudre River also originates within the Alpine zone of the Laramie Mountains and follows a course eastward through a deep canyon. The drainage flows into relatively open terrain north of the town of Livermore, Colorado, then turns southward through a narrow canyon that traverses the interior eastern margin of the foothills for approximately 6 miles and empties into the Cache la Poudre River in Poudre Canyon. Elevations within the immediate project area range from approximately 5,250 ft (1600 m) to 6,500 ft (1,981 m).

Both streams within the study area are characterized generally by sinuous channels bounded by narrow flood terraces and enclosed by precipitous canyon walls (Figure 3). Segments of both canyons are relatively wide (Figure 4) with broad, well developed terraces along the canyon floors. Both canyons are also characterized by steep, constricted segments in which nearly vertical canyon walls descend directly to the incised river channels.

Terrain along the rims of both canyons ranges from spiny ridge crests to upland parks. Along the sides of both canyons, steep slopes are often interrupted by small protruding finger ridges and hanging terraces which are nearly level. Within Poudre Canyon directional exposure has a direct bearing on the steepness, soil development, and vegetation cover of the canyon walls. North-facing canyon walls are characterized by relatively well developed soils supporting dense pine forests, and irregular slopes strewn with massive boulders. Soils on south-facing canyon walls tend to be shallow and rocky, capable of supporting only sparse vegetation; slopes are relatively constant and free of larger boulders. These differences are due primarily to the relatively small amount of sunlight that strikes north-facing slopes, which results in a much lower rate of evaporation than occurs on south-facing slopes (Cacek 1973:143). Since the canyon

Figures 3 and 4

(1 page)

of the North Fork of the Cache la Poudre River flows north to south through the study area, this trend is markedly less pronounced.

## Geology

The Southern Rocky Mountains are composed of Precambrian rocks that are a complex mixture of gneiss and granitic materials (Tweto 1980:37). Major components of these materials had formed by approximately 1,750 million years before present (m.y.b.p.) (Peterman and Braddock 1967). The Laramide Orogeny, responsible for the formation of the mountain range, occurred approximately 60 m.y.b.p. This uplift forced the metamorphosed materials of the Basement Complex through overlying sedimentary materials that had formed on the late Mississippian and Pennsylvanian sea floor, and which now constitute portions of the High Plain surface. The uplifted sedimentary materials were carried away by erosion, leaving the exposed granitic core, which has subsequently been shaped by glaciation and canyon cutting (Cacek 1973:22).

Vertical displacement along major fault lines began approximately 7 m.y.b.p. and continued into the early Pleistocene. This uplifting and settling brought the summits of the Rocky Mountains and the foothills to approximately their present elevations (Richmond 1974).

The most common formations throughout the study area are knotted mica schists, feldspathic granites, and gneiss. Formations of siliceous and sedimentary rock are not present, although a low hogback of arkosic sandstone flanks the eastern slope of the foothills adjacent to the study area.

During the present survey, rounded cobbles of arkosic sandstone were noted scattered along a ridge crest within the NE 1/4 of NE 1/4 of Section 9, T8N, R70W. However, no indication of an intact sandstone formation was found in this area. The absence of sedimentary materials within the study area and within adjacent portions of the Front Range probably had a direct bearing on the activities of prehistoric groups utilizing the region, since tool stones such as cherts and quartzites are scarce in the foothills.

Another geologic factor which affected prehistoric utilization of the region is the formation of rock shelters and caves suitable as habitation sites. Such features occur rarely in the blocky granitic materials characteristic of the study area. Small caves or cavities, formed by the erosion of relatively soft sediments from a more resilient matrix, are least common within the study area. Two such features were found. One, located at the base of a vertical canyon wall on the floodplain of the North Fork of the Cache la Poudre River, contains buried archaeological materials and has been recorded as

a site.

More common are small rock shelters formed by two or more massive granitic blocks or slabs that have tumbled together to form a sheltered area, and those formed by protruding shelves of bedrock along the bases of hill slopes. Small shelters formed by several massive blocks or slabs are fairly common on north-facing slopes in Poudre Canyon. However, only two such features within the survey area contain sufficient level ground to have permitted human habitation, and archaeological materials were found in only one. Both are located on very steep slopes 150 m or more above the Cache la Poudre River.

Three protruding bedrock shelves were examined as potential sheltered site locations of which one, located on an upland terrace at the base of Poudre Canyon, was found to contain at least 1.90 m of colluvial sediments and a minimum of two buried archaeological components.

#### Soils

The USDA Soil Survey of the Larimer County area identifies two major soil associations within the eastern margin of the foothills. Warm, well-drained areas between elevations of 5,400 feet and 7,000 feet are characterized by occurrences of the Kirtely-Purner-Haplustalls Association. Cooler soils on mountain sides tend to be characterized by occurrences of the Wetmore-Boyle-Rock outcrop Association.

Soils noted throughout the study area vary greatly in response to such factors as slope, exposure, elevation, and hydrologic regimes. The deepest soils were encountered along the terraces of the Cache la Poudre River and North Fork of the Cache la Poudre River. These sediments tend to be silty to sandy loams rich in organic materials. Such soils are usually underlain by more clayey sediments which are in turn underlain by boulders deposited by the rivers' ancestral channels. Although such deposits are usually deep, test excavations at a stratified site on the North Fork of the Cache la Poudre River suggest that these soils are subject to frequent redistribution by alluvial action. Consequently, the deeper soils do not necessarily represent the earliest sediments nor are they necessarily the most likely to contain intact archaeological deposits.

Moderately deep to deep soils were encountered on upland terraces above the floodplains of the major drainages and adjacent to canyon slopes. These sediments are usually a mixture of eolian and alluvial materials, dominated by sandy to gravelly loams underlain by compacted clayey sands. They typically support open grassland vegetation with scattered pine forests. Test excavations at several archaeological sites suggest that these types of sediments contain some of the earliest undisturbed

soil horizons and, under certain conditions, harbor deeply stratified archaeological deposits.

Soils which occur on south-facing slopes of Poudre Canyon tend to be very shallow and rocky. These sediments are composed of unsorted colluvium, constantly redistributed by slope wash and other erosional factors. They usually support sparse grassland or shrub vegetation. Examination of natural cut banks and soil profiles exposed in prospect pits indicates that these sediments have minimal potential for the preservation of buried archaeological materials. Soils occurring on north-facing slopes are shallow to moderately deep sandy loams, often with a high frequency of colluvial material. The soils are typical of sediments found in pine forests where decomposing forest duff creates a mantle of acidic humus overlying the earlier colluvial sediments. Examination of natural cut banks and soil profiles exposed in prospect pits indicates that these soils are occasionally underlain by a well-defined shallow C horizon. These sediments have little potential for the preservation of archaeological deposits.

Shallow to moderately deep soils were encountered on narrow ridge tops and hanging terraces. These sediments are primarily a mixture of unsorted colluvium and eolian fines. Such soils tend to be very rocky and usually support short grasses and woody shrubs. Examination of natural cut banks and soil profiles exposed in prospect pits indicates that these soils have little potential for preservation of archaeological deposits.

Soils occurring along canyon rims are highly variable. In many areas, the canyon rims are characterized by spiny outcrops of granitic bedrock that are essentially devoid of soils. However, portions of the canyon rims are rolling upland parks which support mature pine forests with open grasslands interspersed. Soils in these areas tend to be well developed, moderately deep to deep sandy loams of primarily eolian origin. Examination of natural cutbanks indicates that such soils often lack a discernible B horizon, but may be several meters deep. Although no stratified sites were encountered on canyon rims, these soils appear to have a good potential for the preservation of archaeological deposits.

#### Climate

The climate of northeastern Colorado is influenced strongly by the presence of the Rocky Mountains. Most moisture-laden air enters the area from the west and northwest. Upward movement of this air along the western slope of the Rockies causes cooling and subsequent precipitation. Descending the eastern slope of the mountains, the air expands and precipitation decreases. Consequently, much of northeastern Colorado lies in a rainshadow of the Rocky Mountains (Cacek 1973:26). Smaller amounts of

moisture-laden air also enter Colorado from the southeast. These air masses condense along the eastern slope of the Rockies, resulting in locally heavy precipitation often referred to as "upslope" moisture.

Generally, precipitation increases with elevation. This is demonstrated by differences in mean annual precipitation rates at Grover, Colorado in the Pawnee National Grassland, which receives 13.30 inches of precipitation; Fort Collins, which receives 14.19 inches; and Estes Park, which receives 16.07 inches (Cacek 1973:27).

The regional climate as a whole has been described as semi-arid "middle-latitude steppe" (Trewartha 1981). However, some researchers feel that topographic variation creates such a range of microclimates along the Front Range that no single climatic designation is adequate (Hansen et al. 1978:1-5).

Differences in altitude and exposure exert the greatest degree of influence on microclimates in the foothills environment. This is demonstrated by marked changes in vegetation communities occurring over short linear distances in response to elevation changes and differences in exposure. Winds tend to reach the greatest velocities along the plains east of the Front Range and within the Alpine zone along the crest of the Rocky Mountains. At intermediate elevations winds are moderated by timber and uneven terrain. Consequently, severe weather tends to be a limiting factor for plant, animal, and human populations above timberline and throughout the plains region, but is a less critical factor within foothills and montane settings (Cacek 1973:28).

For the foothills area west of Fort Collins, a mean low daily temperature of about 12 degrees F. occurs usually in January, while a mean high daily temperature of about 84 degrees F. can be expected in July and August. Most precipitation falls between the months of April and September. In a normal year, the last spring frost can be expected to occur in early May and the first fall frost can be expected to occur in mid-to-late September (Hendon 1984:48).

#### Flora

Floral communities occurring within the study area are divisible into four broad categories: riparian, grassland, shrub slope, and tree slope. Riparian communities are limited to well watered areas along the edges of the larger drainages. Grassland communities occur primarily on relatively level areas above the floodplains of major drainages, on upland ridge crests, and within upland parks along canyon rims. The shrub slope community occurs primarily on south-facing slopes and in other exposures where the soil is too shallow to support mature forest

communities. The tree slope community occurs primarily on north-facing slopes and in other exposures where soils are deep enough to support mature forests.

The riparian vegetation community occurs primarily within 30 m of the Cache la Poudre River and the North Fork of the Cache la Poudre River. However, riparian vegetation was also noted along the bottoms of several gulches feeding into both rivers. Willow, cottonwood, and juniper are common along the banks of most drainages, while alder, mountain maple, wild plum, and chokecherry are restricted to certain locations along the Cache la Poudre River and North Fork of the Cache la Poudre River and the confluences of the rivers' large tributaries. Snowberry is the dominant shrub in this community, particularly along the larger tributaries of the two rivers. Rabbitbrush, gooseberry, and skunkbrush also occur within riparian vegetation zones, particularly at the bases of rocky gulches. Kentucky bluegrass, Japanese chess, and downy chess are the major grasses. The grassland community occurs discontinuously throughout the study area, encompassing the full range of elevations and exposures, but confined to relatively level settings. Grasses are the major component of this community. Blue grama, wheatgrass, and Japanese chess are dominant, with lesser occurrences of Indian ricegrass, cheat grass, and thrion. Forbs, prickly pear, ball cacti, and small shrubs such as snakeweed and fringe sage occur less frequently.

The shrub slope community encompasses a large percentage of the survey area. This community occurs on all south-facing slopes as well as other exposures which are not forested or dominated by grassland vegetation. Mountain mahogany is the dominant shrub and is extremely dense in some areas. Bitterbrush and rabbitbrush are also common in this community. Isolated stands of gooseberry and skunkbrush also occur, usually around rocky outcrops near summits and ridge crests. Downy chess is the major understory, with lesser occurrences of prickly pear, sage, and forbs.

The tree slope community occurs almost continuously along north-facing slopes throughout the study area. This is typically a coniferous forest dominated by ponderosa pine. Although the most densely wooded areas occur on north-facing slopes, western exposures are also heavily wooded, particularly along portions of the North Fork of the Cache la Poudre River. Juniper and Douglas-fir are interspersed among the ponderosa pine in many areas, and blue spruce occur occasionally. Forbs, grasses, and shrubs occur very sparsely within this community. Ground cover is made up mainly of pine duff, mosses, and ferns.

An inventory of plant species identified in 1986 in the immediate Poudre Park area (Anderson 1986), which lies at the western edge of the study area, may be found in Table I.



TABLE I  
 PLANT SPECIES OF THE POUUDRE PARK AREA  
 (From Anderson 1986)

Family	Genus/Species	Common Name
Aceraceae	<i>Acer glabrum</i>	Mountain Maple
Alliaceae	<i>Allium textile</i>	Wild Onion, Textile Onion
Anacardiaceae	<i>Rhus trilobata</i>	Skunkbrush
Anacardiaceae	<i>Toxicodendron rydbergii</i>	Western Poison Ivy
Apocynaceae	<i>Apocynum sibiricum</i>	Siberian Dogbane
Betulaceae	<i>Alnus tenuifolia</i>	Alder
Boraginaceae	<i>Mertensia lanceolata</i>	Narrow-leaved Mertensia
Boraginaceae	<i>Osmodium molle</i> var. <i>occidentale</i>	False Gromwell
Cactaceae	<i>Opuntia polyacantha</i>	Prickley Pear
Caprifoliaceae	<i>Symphoricarpos</i> spp.	Snowberry
Caryophyllaceae	<i>Cerastium arvense</i>	Field Mouse-Ear
Compositae	<i>Achillea lanulosa</i>	Yarrow
Compositae	<i>Antennaria</i> spp.	Pussytoes
Compositae	<i>Arctium minus</i>	Burdock
Compositae	<i>Artemisia campestris</i> spp. <i>caudata</i>	Sagewort Wormwood
Compositae	<i>Artemisia dracunculus</i>	Wild Tarragon
Compositae	<i>Artemisia frigida</i>	Pasture Sage

TABLE I  
(Continued)

PLANT SPECIES OF THE POUUDRE PARK AREA  
(From Anderson 1986)

Family	Genus/Species	Common Name
Compositae	<i>Artemisia ludoviciana</i>	Prairie Sage
Compositae	<i>Aster falcatus</i>	White Prairie Aster
Compositae	<i>Aster laevis</i>	Smooth Aster
Compositae	<i>Chrysothamnus nauseosus</i>	Rabbitbrush
Compositae	<i>Cirsium arvense</i>	Canada Thistle
Compositae	<i>Cirsium</i> spp.	Thistle
Compositae	<i>Conyza canadensis</i>	Horseweed
Compositae	<i>Erigeron</i> spp.	Daisy Fleabane
Compositae	<i>Gutierrezia sarothrae</i>	Broom Snakeweed
Compositae	<i>Haplopappus spinulosus</i>	Ironplant Goldenweed
Compositae	<i>Heterotheca villosa</i>	Golden Aster
Compositae	<i>Liatris punctata</i>	Dotted Gayfeather
Compositae	<i>Senecio spartiodes</i>	Broom Groundsel
Compositae	<i>Solidago</i> cf <i>canadensis</i>	Canada Goldenrod
Compositae	<i>Solidago</i> spp.	Goldenrod
Compositae	<i>Taraxacum</i> spp.	Dandelion
Compositae	<i>Tragopogon dubius</i>	Western Salsify
Cruciferae	<i>Camelina microcarpa</i>	Littlepod Falseflax

TABLE I  
(Continued)

PLANT SPECIES OF THE POUDRE PARK AREA  
(From Anderson 1986)

Family	Genus/Species	Common Name
Cruciferae	Erysimum spp.	Wallflower
Cruciferae	Nasturtium officinale	Watercress
Cruciferae	Thlaspi arvense	Penny Cress
Cyperaceae	Carex spp.	Sedge
Equisetaceae	Equisetum arvense	Field Horsetail
Equisetaceae	Equisetum laevigata	Scouring Rush
Euphorbiaceae	Euphorbia cf robusta	Rocky Mountain Spurge
Fumariaceae	Corydalis aurea	Golden Smoke
Geraniaceae	Geranium spp.	Geranium
Gramineae	Agropyron desertorum	Crested Wheatgrass
Gramineae	Agropyron spp.	Wheatgrass
Gramineae	Agrostis spp.	Bent Top
Gramineae	Alopecurus geniculatus	Water Foxtail
Gramineae	Aristida longiseta	Red Threeawn
Gramineae	Bouteloua gracilis	Blue Grama
Gramineae	Bromus inermis	Smooth Brome
Gramineae	Bromus japonicus	Japanese Chess
Gramineae	Bromus tectorum	Downy Chess
Gramineae	Elymus canadensis	Canada Wild Rye

TABLE I  
(Continued)

PLANT SPECIES OF THE POUUDRE PARK AREA  
(From Anderson 1986)

Family	Genus/Species	Common Name
Gramineae	<i>Glyceria grandis</i>	American Mannagrass
Gramineae	<i>Koeleria cristata</i>	Junegrass
Gramineae	<i>Poa pratensis</i>	Kentucky Bluegrass
Gramineae	<i>Poa</i> spp.	Bluegrass
Gramineae	<i>Spartina pectinata</i>	Prairie Cord-grass
Gramineae	<i>Sporobolus cryptandrus</i>	Sand Dropseed
Gramineae	<i>Stipa comata</i>	Needle and Thread
Gramineae	<i>Stipa viridula</i>	Green Needle-grass
Grossulariaceae	<i>Ribes aureum</i>	Golden Currant
Grossulariaceae	<i>Ribes inerme</i>	Common Gooseberry
Juncaceae	<i>Juncus</i> spp.	Rush
Labiatae	<i>Nepeta cataria</i>	Catnip
Leguminosae	<i>Astragalus</i> spp.	Milkvetch
Leguminosae	<i>Dalea</i> spp.	Prairie Clover
Leguminosae	<i>Melilotus alba</i>	White Sweet Clover
Leguminosae	<i>Oxytropis lambertii</i>	Colorado Locoweed
Leguminosae	<i>Thermopsis divaricarpa</i>	Golden Banner
Leguminosae	<i>Vicia americana</i>	American Vetch
Lemnaceae	<i>Lemna</i> spp.	Duckweed

TABLE I  
(Continued)

PLANT SPECIES OF THE POUUDRE PARK AREA  
(From Anderson 1986)

Family	Genus/Species	Common Name
Liliaceae	Leucocrinum montanum	Sand Lily
Liliaceae	Smilacina stellata	Few-flowered False Solomon's Seal
Malvaceae	Sphaeralcea coccinea	Scarlet Globemallow
Nyctaginaceae	Oxybaphus linearis	Narrowleaf Umbrellawort
Onograceae	Epilobium spp.	Willow-Herb
Onograceae	Oenothera spp.	Evening Primrose
Papervaceae	Argemone spp.	Prickley Poppy
Pinaceae	Juniperus scopulorum	Red Cedar
Pinaceae	Pinus ponderosa	Ponderosa Pine
Pinaceae	Pseudotsuga menziesii	Douglas Fir
Polygonaceae	Eriogonum effusum	Bushy Eriogonum
Polygonaceae	Rumex crispus	Curly Dock
Polygonaceae	Rumex venosus	Veiny Dock
Polypodiaceae	Woodsia oregana	Oregon Woodsia
Ranunculaceae	Cleamatis ligusticifolia	Western Virgins Bower
Ranunculaceae	Delphinium cf nelsonii	Larkspur
Ranunculaceae	Thalictrum dasycarpum	Purple Meadow-Rue

TABLE I  
(Continued)

PLANT SPECIES OF THE POUDRE PARK AREA  
(From Anderson 1986)

Family	Genus/Species	Common Name
Rosaceae	<i>Cercocarpus montanus</i>	Mountain Mahogany
Rosaceae	<i>Physocarpus monogynus</i>	Ninebark
Rosaceae	<i>Potentilla</i> spp.	Cinquefoil
Rosaceae	<i>Prunus virginiana</i>	Choke Cherry
Rosaceae	<i>Purshia tridentata</i>	Bitterbrush, Antelope-brush
Rosaceae	<i>Rosa</i> spp.	Wild Rose
Rubiaceae	<i>Galium boreale</i>	Bedstraw
Rubiaceae	<i>Galium spurium</i>	Bedstraw, False Cleavers
Salicaceae	<i>Populus angustifolia</i>	Narrowleaf Cottonwood
Salicaceae	<i>Populus sargentii</i>	Plains Cottonwood
Salicaceae	<i>Salix</i> cf <i>amygdaloides</i>	Peach-leaved Willow
Salicaceae	<i>Salix</i> cf <i>exigua</i>	Sandbar Willow
Saxifragaceae	<i>Heuchera</i> spp.	Alum-root
Scrophulariaceae	<i>Penstemon</i> spp.	Beard-tongue
Scrophulariaceae	<i>Verbascum thapsus</i>	Great Mullien
Scrophulariaceae	<i>Veronica americana</i>	American Speedwell
Umbelliferae		Unknown Umbel

TABLE I  
(Continued)

PLANT SPECIES OF THE POUUDRE PARK AREA  
(From Anderson 1986)

Family	Genus/Species	Common Name
Umbelliferae	Conium maculatum	Poison Hemlock
Urticaceae	Urtica dioica ssp. gracilis	Stinging Nettle
Violaceae	Viola spp.	Violet

## Fauna

The diversity of vegetation communities and microenvironments within the study area creates a wide range of wildlife habitats. Consequently, faunal populations within the study area as a whole are extensive and diverse. The following is not an exhaustive catalog of species found within the canyons of the Cache la Poudre River and North Fork of the Cache la Poudre River, but rather a summary of the most common and frequently sighted species.

A variety of raptors utilize both canyons and nest along the canyon rims and cliff faces. These include red-tailed hawk, Swanson's hawk, common nighthawk, and golden eagle. Bald eagles are seasonal visitors, and are usually seen between November and March. Other birds utilizing the area include blackbilled magpie, common crow, turkey vulture, and a variety of song birds. Migratory waterfowl occasionally utilize calmer stretches of both rivers.

Amphibians and reptiles common to the area include Woodhouse's toad, boreal chorus frog, red-lipped prairie lizard, milk snake, bull snake, garter snake, and prairie rattlesnake.

Small mammals are abundant throughout the area and include a variety of species of the genus Sylvilagus (cottontail), least chipmunk, Uinta chipmunk, rock squirrel, golden-mantled ground squirrel, deer mouse, Mexican wood rat, porcupine, raccoon, and striped skunk. Coyotes are the most common predators, and red fox are also present. Mountain lion and bobcat utilize the canyons of both upper streams, but are rarely sighted by humans.

Mule deer are the dominant large mammal within both canyons. Elk are present during the winter months. Black bear utilize the lower Poudre Canyon during the fall when wild plum and other fruits ripen, and probably during other seasons as well, but are seldom sighted. Bighorn sheep also occur, the study area constituting the extreme low-elevation end of their habitat range (Burt and Grossenheider 1976; Gilbert 1980).

### Prehistoric and Historic Resource Utilization Potential

Utilization of the study area by prehistoric groups probably represents a limited portion of a broader settlement-subsistence network. It is unlikely that prehistoric groups remained within the study area or immediate vicinity on a year-round basis. Hunting-gathering groups in mountain environments tended to be highly mobile, exploiting specific resources within different ecological zones. Short-term settlement within various ecological zones was probably keyed to the seasonal availability of plant and animal resources along the elevational continuum from the base of the mountains to the alpine summits (see Reeve



1980; Grant 1982).

It is likely that prehistoric groups passed through the study area during spring or early summer enroute to higher elevations and again during mid-to-late fall after descending from the alpine meadows. However, this scheme is extremely general and a wide range of variation in patterns of seasonal resource exploitation probably occurred. Moreover, because of the diversity of microenvironments within the study area, specific resources would probably have been available throughout the year.

In mid-spring the riparian vegetation zone along the edges of the Cache la Poudre River and North Fork of the Cache la Poudre River, within the lower elevations of the study area, would have provided the greatest number and widest diversity of edible plants. Both the plants and the grazing animals they attracted could have been exploited by hunter-gatherer groups.

By late spring and early summer, herbivores such as bison and mule deer would have grazed and browsed throughout the study area. As summer progressed, large mammals may have concentrated their activities at higher elevations and it is likely that prehistoric groups would have utilized the upper montane forests during this time. However, the study area would have remained productive and was probably subject to some degree of exploitation.

During late summer to early fall, fruits such as wild plum, gooseberry, and chokecherry matured throughout the forest and shrub vegetation zones within the study area, and a variety of edible seeds became available within the grassland vegetation zone. These resources were probably exploited extensively by prehistoric groups. With the onset of winter, large mammals such as mule deer, and possibly elk and bison, would have begun moving into the study area and adjacent regions. The extensive shrub slope vegetation communities within the study area would have provided important winter browse for the animals while the canyons would have provided shelter from winter storms for both human and animal populations.

In addition to biotic resources, the Cache la Poudre River drainage area provided raw lithic materials for use as tool stone. Quartzitic rocks occur in cobble form in the channels and terraces of both rivers, and were used in production of chipped and ground stone tools. Uplifted sedimentary rocks to the immediate east of the study area may also provide cherts and chalcedonies, although as noted previously, sedimentary rocks are scarce in the study area proper.

Historic utilization of the study area has focused on a variety of resources whose values were keyed to fluctuating market demands on both local and regional scales. Very generally, historic utilization of the study area is

characterized by a pattern of increasingly diversified resource exploitation through time.

The objects of economic interest have changed progressively from animal pelts to gold and timber to grazing land to mixed farming and ranching and finally to diversified ventures in tourism, housing development, and recreation. Ranching and, to a lesser extent mining and timbering, continue to be developed.

The earlier historic land use patterns have certain traits in common with prehistoric land use patterns. Both were characterized by short-term seasonal occupations with the intention of extracting specific resources that were not available elsewhere. This is particularly true of the fur trade. Early mining operations resulted in intensified settlement of mountain regions, but many areas continued to be abandoned during the winter months. Open range grazing was tied to the seasonal periodicity of different environmental zones.

With the development of better transportation networks as well as broader commercial outlets for locally produced materials, historic settlement and subsistence patterns became increasingly dissimilar to the prehistoric patterns. Throughout the historic period, a major difference between historic and prehistoric resource utilization has been one of economic focus. While prehistoric resource utilization resulted in consumption of the various resources by the exploiting group itself, historic exploitation has been geared toward the maintenance of external markets.

#### Historic Land Use Patterns and Present Condition of the Land

For practical reasons which are obvious, historic utilization of the study area is concentrated heavily along the floors of both canyons. Aside from occasional prospect pits or mines, the canyon slopes and rims have not been significantly affected by historic activities.

Historic utilization of the canyon of the North Fork of the Cache la Poudre River within the study area has been limited to relatively short-term homesteading during the late 19th and early 20th centuries as well as continuing use of the area as open range for beef cattle. There are no modern residences within the canyon of the North Fork of the Cache la Poudre River, and only two residences are located within sight of study area. Since the North Fork portion of the study area is surrounded by private land with restricted access and by National Forest land without developed hiking trails, the area has remained relatively unaffected by recreation. As a result of these factors, recent impacts to archaeological and historical sites within the North Fork area appear minimal.

Historic utilization of the canyon of the Cache la Poudre River within the study area has been extensive. The canyon has been accessible to tourism, recreation, and development since at least the 1880s. Numerous permanent residences are located within the study area along Colorado Highway 14; the surrounding National Forest lands contain some of the more popular recreational areas in northern Colorado. In addition, the area has been prospected extensively, limited timbering has occurred, and the river has been channelized and diverted. While the above factors have affected most of the level terrain along the canyon floor, the canyon slopes and rims are relatively unaffected by historic activities.

It is apparent that recent historic development has affected the preexisting archaeological record within Poudre Canyon. A greater area was surveyed within Poudre Canyon than within the North Fork portion of the study area, but only one prehistoric site was recorded within Poudre Canyon while eight prehistoric sites were recorded along the North Fork of the Cache la Poudre River. All but one prehistoric site recorded along the North Fork are located in the inner canyon. Virtually all historic development has occurred in a similar setting within Poudre Canyon.

Throughout the study area minor environmental changes have probably occurred within the last century due to both domestic grazing and changes in ground water levels and stream run-off resulting from commercial and domestic water usage. It is likely that a slight decrease in both the density and diversity of floral and faunal resources has occurred. Consequently, the study area's current condition is not entirely representative of either the prehistoric or early historic environment. However, aside from those portions of Poudre Canyon that have been altered significantly through recent development projects, the present environment probably does not differ greatly from conditions that have existed throughout the Holocene.

CHAPTER THREE  
CULTURAL BACKGROUND

Prehistoric Overview

Introduction

Prehistoric habitation and use of the study area must be regarded in the broader context of a settlement and subsistence network whose temporal and spatial dimensions are only partially understood at this time. The first formal cultural chronology for the general Northwestern Plains region was developed by Mulloy (1958). Mulloy's chronology was adopted by archaeologists working within northern Colorado. Based on data from several hundred sites in eastern Colorado, Wood (1967) formulated a cultural chronology for the Central Plains which built on Mulloy's work. Frison (1978) subsequently revised and refined Mulloy's Northwestern Plains chronology. Since cultural and physiographic boundaries are seldom distinct with regard to the archaeological record, Frison's chronology is considered generally applicable to plains and adjacent mountainous regions of north-central Colorado. The cultural chronology of northeastern Colorado as a whole and northern Larimer County in particular continues to be refined. Of particular significance in understanding the local cultural history are excavations at Spring Gulch (Kainer 1976), as well as intensive investigations of the Owl Canyon Rock Shelter (Burgess 1981) and Phoebe Rock Shelter (Thompson 1986), all of which are located short distances north and east of the study area.

Chronological outlines for northeastern Colorado have been prepared recently by Morris (1982:22) and by Eighmy (1984:12). Morris divides the regional cultural history into nine periods while Eighmy recognizes eight periods. These two chronologies are summarized in Table II. The chronological scheme presented below draws from both Morris and Eighmy but is organized in three major stages (Paleo-Indian, Archaic, and Late Prehistoric) with periods as internal subdivisions. Certain bracketing dates have also been revised.

Paleo-Indian Stage

The earliest firmly established and dated human occupation of the Central Plains and southern Rocky Mountains region is represented by the Paleo-Indian stage. This stage spans approximately the last 5,000 years of the Pleistocene epoch and is divided generally into three periods. The earliest period, known as Clovis, extends from approximately 12,000 years B.P. to 10,500 years B.P.; this is followed by the Folsom period which is in evidence until approximately 9,000 years B.P. Following Folsom is the more broadly defined Plano period which embraces a

TABLE II  
 RECENT PREHISTORIC CULTURAL CHRONOLOGIES  
 FOR NORTHEASTERN COLORADO

<u>Morris (1982)</u>	<u>Eighmy (1984)</u>
=====	
Paleo-Indian 12,000 - 8,000 B.P.	Paleo-Indian 12,000 - 7,500 B.P.
Early Archaic 8,000 - 6,000 B.P.	Early Archaic 7,500 - 5,000 B.P.
Middle Archaic 6,000 - 4,000 B.P.	Middle Archaic 5,000 - 3,000 B.P.
Late Archaic 4,000 - 2,000 B.P.	Late Archaic 3,000 - 2,000 B.P.
Early Ceramic 2,000 - 1,000 B.P.	Early Ceramic 2,000 - 1,000 B.P.
Middle Ceramic 1,000 - 600 B.P.	Middle Ceramic 1,000 - 275 B.P.
Late Ceramic 325 - 275 B.P.	
Contact 300 - 150 B.P.	Protohistoric/ Contact 275 - 150 B.P.
=====	

variety of projectile point types common to the Plains region. The Plano period terminates at approximately 7,000 years B.P.

Clovis Period: Although evidence of Pre-Clovis occupation dating as early as  $16,630 \pm 320$  years B.P. is reported from the Dutton, Selby, and Lamb Spring sites in eastern Colorado (Stanford 1979; Stanford et al. 1981), these data are considered inconclusive at this time. The earliest undisputed date of human occupation of eastern Colorado is a radiocarbon age of  $11,200 \pm 500$  years B.P. from the Dent site, located southeast of the study area (Cassells 1983:48). This date places the Dent site well within the temporal range of the Clovis period. Clovis artifacts from this and certain other localities throughout the Central and Northwestern Plains have been recovered in association with extensive deposits of mammoth bone. These associations are usually interpreted as indicating a primary dependence on mammoth as a food staple.

Folsom Period: At ca. 10,500 years B.P., Clovis-type projectile points were replaced by a smaller form known as Folsom. The change in projectile point morphology coincides with a shift away from primary dependence on mammoth and toward intensified procurement of Bison antiquus (Wormington 1957). Folsom materials have been recovered from the Lindenmeier site, a short distance northeast of the study area, in association with a radiocarbon age of  $10,780 \pm 375$  years B.P. (Haynes and Agogino 1960).

Plano Period: About 9,000 years B.P. Folsom projectile points were replaced by a different form known as Agate Basin (Frison 1978:31). The Agate Basin Complex is the first of an array of Plano, or late Paleo-Indian, manifestations characterized by parallel or parallel-oblique flaked projectile points and continued exploitation of now-extinct forms of bison.

Numerous Paleo-Indian sites are known within north-central and northeastern Colorado, including one within the study area boundaries. The Gordon Creek Burial (5LR99), Lindenmeier site, Johnson site, site 5LR1098, and a surface find of a fluted projectile point in Cedar Gulch (Grant n.d.) provide evidence of Paleo-Indian occupations within the immediate vicinity of the study area. The Plains-Foothills transition zone immediately east of the Front Range in particular has yielded abundant in Paleo-Indian materials (Cassells 1983:41).

#### Archaic Stage

Early Archaic Period: By approximately 7,000 years B.P., late Paleo-Indian stage projectile points were replaced by large side-notched points indicating the onset of the Early Archaic period of the Archaic stage. This period coincides with the Altithermal climatic episode. During this time, portions of North America were affected by an accelerated continental warming trend which resulted in major ecological changes (Antevs 1948, 1955). The

lifeway which developed in response to these conditions was characterized by increased dependence on small mammal and wild plant resources, apparently intensified occupation of foothill and montane localities, and possibly decreased exploitation of the Plains regions east of the Rocky Mountains (Kehoe 1981; Benedict and Olson 1978; Frison 1978). Early Archaic sites in general may be characterized as representing a broad spectrum hunting-and-gathering economy practiced by a relatively diffuse population. Ground stone artifacts, used for the processing of vegetal foods, first appear in significant quantities on Early Archaic sites.

Early Archaic sites have been investigated in regions adjacent to the study area, and at least one recorded site within the project area boundaries proper (5LR1098) exhibits an Early Archaic component. Sites located along the Front Range which contain extensive early Archaic components include the Magic Mountain and Lodaiska sites near Denver (Irwin and Irwin 1959; Irwin-Williams and Irwin 1966) and the Albion Boarding House site near Nederland (Benedict 1975, 1979). Surface finds of Early Archaic artifacts have also been made by E. A. Morris (personal communication to M. P. Grant, 1987) in the Rawah Lakes region, west of the study area.

Middle Archaic Period: By approximately 4,500 years B.P. the large side-notched projectile points of the Early Archaic period were replaced by lanceolate and shouldered forms, usually exhibiting bifurcated bases. These projectile points, representing the McKean Technocomplex, indicate the onset of the Middle Archaic period. During this time the harsh conditions of the Altithermal episode gave way to a cooler and more variable climate. Several minor glacial advances may have occurred along the Colorado Front Range during this period (Benedict 1978:86).

The basic hunting and gathering lifeway of the Early Archaic period appears to have continued throughout the Middle Archaic period, possibly with increased exploitation of Plains regions. Middle Archaic occupation is suggested by surface finds at site 5LR1098 within the project area boundaries, and is generally well documented in the project vicinity. Levels IV and V of the Spring Gulch site yielded Middle Archaic projectile points in association with other flaked stone artifacts, ground stone, and bone tools including incised bone objects (Kainer 1976:202). Stratum 3 at Phoebe Rock Shelter yielded McKean-type materials in association with hearths containing charred floral material and accompanying artifact assemblages similar to those encountered at Spring Gulch (Thompson 1986:158-161). The Dipper Gap site on the northeastern Colorado Plains east of the study area also yielded substantial evidence of Middle Archaic occupation (Metcalf 1973). The lower half of a McKean projectile point was observed by the senior author on the surface of site 5LR534, located west of the study area in Poudre Canyon, in 1980.

Late Archaic Period: Approximately 3,000 years B.P. Middle Archaic-type points were replaced by large and variable corner-notched forms indicative of the Late Archaic period. Projectile points of this type are often considered to be representative of the Apex Complex on the Colorado Front Range (Irwin-Williams and Irwin 1966). Morphologically similar specimens on the Northwestern Plains are regarded as part of the Pelican Lake Complex (Frison 1978).

Climatic conditions remained favorable throughout the Late Archaic period. Sites attributable to the period exhibit an increase in frequency over earlier sites. Whether this apparent increase in site frequency represents an expanding population as Fredlund (1979:19) and others have suggested, or is simply a result of better preservation and higher visibility because of more recent age, is uncertain. The basic hunting and gathering economy evident for earlier Archaic manifestations continued throughout the Late Archaic period.

The Late Archaic period may be represented by both surface and subsurface projectile points at site 5LR1098 and by other, as-yet-undated buried components within the project area. Other Late Archaic sites have been studied in the general project vicinity. Late Archaic components at Spring Gulch stratigraphically overlapped the Middle Archaic component within Levels III and IV (Kainer 1976:199). Similarly, Late Archaic materials were stratigraphically associated with Middle Archaic materials within Natural Stratum 3 of Phoebe Rock Shelter (Thompson 1986:161). Morris and Marcotte (1976) recovered two incomplete Late Archaic period projectile points from the lower levels during excavations at 5LR540 during the Joe Wright Reservoir project in upper Poudre Canyon. Two projectile points attributed to the Late Archaic period were observed on the surface of site 5LR550, also located west of the study area in Poudre Canyon (Grant 1978:15). Numerous sites in the Owl Canyon Pinon Grove a short distance northeast of the study area (unrecorded at this time) exhibit Late Archaic projectile points within the surface assemblages (R. J. Burgess, personal communication to M. P. Grant, 1987).

#### Late Prehistoric Stage

Early Ceramic Period: By approximately 2,000 years B.P. or slightly later large corner-notched projectile points were replaced by morphologically similar but significantly smaller specimens. The diminution of projectile point size indicates a shift from the use of the spear thrower or atlatl to the bow and arrow. This event is approximately contemporaneous with the introduction of ceramic technology to eastern Colorado, an innovation that may have been imported from horticultural areas to the east and north of the Colorado Plains (Cassells 1983:158-160).

Earliest ceramic occupation in Colorado in the foothills and



Plains is often referred to as Plains Woodland. This period is thought to represent an extremely attenuated Plains-oriented manifestation of Eastern Woodland cultures, or at least a diffusion of traits from that region. Along the Colorado Front Range within the South Platte River basin, the Plains Woodland occupation is represented archaeologically by small corner-notched, serrated projectile points and cord-impressed ceramic vessels with conical bases (Nelson 1971). These materials tend to occur most frequently in open campsites, but are often associated with stone enclosures (Anderson 1976). Sites of this period have also been found in association with high-altitude game drive systems (Benedict 1975).

Although the Early Ceramic period is contemporaneous with horticultural settlements in adjacent regions, there is little evidence of plant domestication in eastern Colorado during this time and none from northern Colorado. Most researchers feel that horticultural activities along the Front Range during the Plains Woodland period would have been marginal at best and were intended only to supplement a hunting and gathering economy (Cassells 1983:164).

Sites attributable to the Early Ceramic period are common throughout northeastern and north-central Colorado. Plains Woodland ceramic materials similar to types from central and western Nebraska were recovered from Levels I and II from Spring Gulch (Kainer 1976:194). Cord-impressed ceramics from the Owl Canyon Rock Shelter are associated with radiocarbon ages ranging from 670 to 1020 years B.P. (Burgess 1981:29). Evidence from both of these sites as well as from Phoebe Rock Shelter (Thompson 1986:157-158) indicates a mixed hunting and foraging subsistence.

While a majority of prehistoric sites for which temporal affiliation has been assessed within the study area have been assigned to the Late Prehistoric stage, few are attributed specifically to the Early Ceramic period. A radiocarbon-dated Early Ceramic component does exist at site 5LR1102, and both projectile points and ceramics suggest that a component of this age also exists at 5LR1098. Ceramic and lithic artifacts of probable Early Ceramic age have also been recovered from a large campsite located within Poudre Park (5LR512) near the western edge of the study area. Cord-marked ceramics are noted from 5LR532, a site located on Elkhorn Creek west of the study area. Certain sites recorded by Renaud during the 1930s and attributed by him to the "Western Camp Culture" may be of Early Ceramic affiliation as well. E. A. Morris (personal communication to M. P. Grant, 1987) has recovered small corner-notched projectile points from high-altitude localities near the Rawah Lakes. Finally, three flexed burials recovered from site 5LR97, south of the project area on Buckhorn Creek, are believed to be of Plains Woodland affiliation (Wade 1966).

Middle and Late Ceramic Periods: By approximately 1,000 years B.P. cord-marked ceramics and corner-notched projectile points were replaced by ceramics with a variety of surface treatments as well as smooth surfaced vessels and small, laterally-notched (side-notched) projectile points. Some researchers feel that these materials represent a later influx of groups and/or technological innovations from the Eastern Woodlands, first defined in Nebraska as the Upper Republican Phase (Cassells 1983:170-173). Although Upper Republican sites in other areas are associated with maize horticulture, no conclusive evidence of horticulture at Upper Republican sites in eastern Colorado has been found.

The temporal span of Upper Republican sites in Colorado coincides with the Old Woman's Phase or Late Side-Notched Arrow Point Tradition of the Northwestern Plains (Reeves 1978). Frison (1978) ascribes the occurrence of small side-notched projectile points on the eastern Wyoming Plains to influences from the Northwestern Plains and Intermountain West.

By approximately 300 - 500 years B.P. small tri-notched projectile points and smooth-surfaced ceramic vessels were dominant in the Plains region. These materials may be of Shoshonean origin (Davis 1975; Frison 1978). In certain contexts within eastern Colorado similar types of artifacts are assigned to the Dismal River Aspect of the Plains Apache (Gunnerson 1960). Tri-notched projectile points recovered from the upper levels of the Glenrock site in eastern Wyoming are believed to post-date 230 years B.P. (Frison 1970), indicating that the tri-notched projectile point tradition persisted into Protohistoric times.

Within the project area, radiocarbon dated Middle/Late Ceramic components have been exposed at site 5LR1098, a possible Middle/Late Ceramic projectile point was recovered from a buried context at 5LR1102, and another projectile point was found on the surface at 5LR1121. Small projectile points of Middle/Late Ceramic age have also been noted on site 5LR541 near the mouth of Poudre Canyon in the vicinity of the study area, and on several unrecorded sites within the Owl Canyon Pinon Grove (R. J. Burgess, personal communication to M. P. Grant, 1987). Smooth-surfaced ceramics are noted from sites 5LR512 and 5LR532, located immediately west of the study area. Small side-notched projectile points were recovered from Levels I and II of the Spring Gulch site in association with several types of ceramic artifacts (Kainer 1976:196). Similar lithic and ceramic associations were encountered within Natural Stratum 3 of the Owl Canyon Rock Shelter (Burgess 1981:73). The Roberts Buffalo Jump, a large prehistoric bison kill and processing site located along the North Fork of the Cache la Poudre River a short distance north of the study area, is believed to represent a Late Prehistoric or Protohistoric Shoshonean occupation (Witkin 1971).

## Historic Overview

### Introduction

The following narrative provides the context for evaluating individual historic period sites recorded during the Class III inventory. According to the National Park Service guidelines, "decisions about whether a property is significant can reliably be made only within the context of an area's history...This context is essential because it relates the factual data on the history of a particular property to general significant patterns in history, thereby providing a basis for evaluating the property" (National Park Service 1982:9).

When establishing the context for evaluating historic period sites, the dominant historic themes that are relevant to that site must be determined. As defined by the National Park Service, a theme is "...an event or series of events, or a developmental force; by association with the life of a significant person; by one building type, period, or method of construction; or by information on a particular topic." The National Park Service guidelines state that "a theme will generally focus on a particular period of time and a defined geographical area." Furthermore, "a significant theme is one which can be demonstrated by scholarly research to be of importance in American history" (National Park Service 1982:9-10).

Only one previous study is particularly relevant to the study area. It is the "Level I Historic Cultural Resource Survey of the Arapaho and Roosevelt National Forests and the Pawnee National Grassland," conducted by Downing/Leach, Architects and Planners, Boulder, Colorado, in 1980. The principal author for the Historical Overview was Liston E. Leyendecker, Professor of History, Colorado State University. The following narrative is based in part of this overview and develops many of the same themes. However, it focuses on the Cache la Poudre River region and the current study area.

### The Rocky Mountain Fur Trade

The study area was first exploited by Euro-Americans when fur trappers and traders came to the region in the early nineteenth century. Although the Cache la Poudre country lay far from the main western fur-trading centers, it was utilized and influenced by the Taos trade to the south and the Missouri River trade to the north. Taos acted as a natural base of operations for trappers in the central and southern Rockies, especially after Mexican independence in 1821. Although the Taos trappers tended to work the streams of what became the southwestern United States, they often ventured as far north as the Green River country and trapped in the mountain streams along the Colorado

Front Range (Weber 1971). The Cache la Poudre country could be reached either from the North Platte River (a natural trapper's route that later became a portion of the Oregon Trail), or by traveling along the eastern base of the Front Range of the Rockies north from Bent's Fort on what became known as the "Trapper's Trail."

Perhaps because it lay on the fringes of both the Missouri River and Taos trade areas, it was not well known to more than a handful of men; as late as 1843, John C. Fremont had difficulty in obtaining a knowledgeable guide to lead him westward into the mountains via the Cache la Poudre River. As early as 1807 or 1808, a small trapping party led by Ezekiel Williams was driven south from the headwaters of the Yellowstone River by the Blackfeet. A few survivors entered northern Colorado by way of the Snowy Range (in today's southeastern Wyoming) or by following the North Platte River into North Park. Kit Carson, although closely connected to the southern fur trade, did some trapping in 1834 along the headwaters of the Laramie River, where he narrowly escaped from two grizzly bears. In the winter of 1849-50, he established four trapping posts at the headwaters of the Cache la Poudre. He recruited the trappers necessary for the task at Bent's Fort and later sold the pelts in Santa Fe (Carter 1968:60-61; Coutant 1899:70-73; Homsher 1949:3-4; Watrous 1911:31-33).

In the fall of 1858, Robert Chambers and his son, also named Robert, established a camp to trap beaver and hunt on the headwaters of the Cache la Poudre River. While his son was in Laporte getting supplies, his father was attacked and killed by Indians (Watrous 1911:163). Chambers Lake was named for this early day trapper.

George W. Pingree, another early-day trapper, built a cabin at the site of Rustic and trapped beaver in the late 1860s. Pingree had come west in 1846 and trapped and hunted with Kit Carson. It is likely that Pingree came to know the Cache la Poudre country while trapping with Carson. Pingree also participated in the infamous Sand Creek Massacre in 1864. Pingree Hill and Park were later named for this early mountain man (Watrous 1911:164).

Several versions attempt to explain the origins of the Cache la Poudre name. Legend claims that the Cache la Poudre River was named by a party of trappers bound for an 1836 rendezvous on the Green River. This legend appears to be based on a newspaper article written by Ansel Watrous in the Fort Collins Courier on February 8, 1883. The story was told to Watrous by Abner Loomis, who in turn heard it from his friend Antoine Janis, the first white settler in Larimer County. Janis, twelve years old at the time, was a member of a snow-bound party of freighters and trappers camped on the banks of the Cache la Poudre River near the present town of Bellevue in November 1836. The party, employed by the American Fur Company, was traveling from St. Louis to the Green River country. Headed by Antoine's father,

the group was caught at this location by a snowstorm that lasted for several days. When the storm ended, the caravan lightened each wagon and buried the goods in a deep hole, which was covered over with brush to hide the contents from the Indians. The excess dirt was carried to the river. Among the buried stores were several hundred pounds of gun powder. Because of this incident, the nearby river was given the name Cache la Poudre after the French phrase, "where the powder was hidden" (Watrous 1911:160-161). In 1903, Abner Loomis was interviewed again and told the same story. At this time, he revealed that the hole or cache was located about one quarter mile east of Bellevue and 300 yards west-southwest of the home of a Mr. Bingham, an old Missouri hunter (Fort Collins Public Library, Local Collections, typed manuscript from Francis W. Cragin, "Early Far West Notebook").

William Ashley initiated the rendezvous system while trapping in the central Rockies in 1825. He set out in November 1824 from Fort Atkinson and followed the Platte River to its forks. He then followed the South Platte to the vicinity of present-day Fort Collins, then proceeded northward near or through the study area, across the Laramie Range and Laramie Plains, skirting the Medicine Bow Range to the north. He reached the Green River country by mid-April of 1825 and divided his men into four groups for a season of trapping, with orders to rendezvous near Henry's Fork in July (Dale 1941). Thus began the rendezvous system of fur trapping in the Rocky Mountain West. The fixed fur posts that had been used in the Missouri country were rendered obsolete by annual rendezvous sites located in the heart of that season's trapping grounds. Here trappers could trade their catches for supplies for the next year's trapping season. The fur companies then transported the pelts back to St. Louis.

The fur trade, based on the demand for beaver pelts, reached its peak between 1820 and 1840. When the eastern and European fashion industry no longer clamored for beaver skins, the fur trade shifted to procuring buffalo hides. Fixed fur posts such as Fort Vasquez, Fort Lupton, and Fort Jackson sprang up in the South Platte Valley (in present-day Weld County, Colorado) to serve the new trade. Most were abandoned or served as stage stations by the 1860s (Hafen 1928; Krakel 1954; Ubbelohde *et al.* 1972:40).

The fur trade left scant physical remnants other than the fixed fur post sites. Because the mountain men were seldom concerned with leaving accurate accounts of their explorations for posterity, the era of the fur trappers is not well recorded. Most carried mental maps of the regions they trapped and explored and since trapping was a risky business, many carried their knowledge to an early grave. However, such eminent mountain men as Jim Bridger, Kit Carson, and others became scouts and guides for the Army and later for the great nineteenth century westward migration. Their chief contribution was the basic geographical

knowledge that was necessary for a systematic exploration of the American West by the federal government and the establishment of military posts and transportation routes that would be used by settlers.

### Government Exploration

The earliest expeditions dispatched by the federal government to explore the southern portions of the Louisiana Purchase, acquired by the United States in 1803, were those of Zebulon Pike and Major Stephen H. Long. Pike's expedition of 1806 stayed well south of the study area, following the Arkansas River to present-day Pueblo and penetrating the Front Range. Pike later published a report of his expedition in 1810, the first to describe this portion of the new American acquisition. Major Long's expedition of 1820 traveled along the Platte and South Platte Rivers past the future sites of Greeley and Denver. His expedition accomplished little, but Long undoubtedly helped to retard the development of the West by calling the region east of the mountains "the Great American Desert" (Olson 1955:46-47; Ubbelohde et al. 1972:25-29).

Prior to the building of an extensive system of forts, roads, and telegraph lines, the U.S. Army realized the need to reconnoiter the vast unknown regions of the West. The Corps of Topographical Engineers under Col. J. J. Abert sent numerous expeditions west in the 1840s and 1850s to gather both military and scientific information. Perhaps the best known explorer of this era was John C. Fremont, "the Pathfinder." In 1842, Fremont proceeded up the South Platte River to Fort St. Vrain, then traveled north to Fort Laramie along the eastern base of the Front Range and the Laramie Mountains. He continued westward on the new Oregon Trail, carefully mapping it to South Pass for emigrant parties (Fremont 1845; Goetzmann 1959). In 1843, Fremont followed Ashley's general route through the study area, but attempted to penetrate the Front Range to find a shorter westward route for emigrant travel. Fremont used the services of Alexis Godoy, although he had two of the most famous mountain men (Kit Carson and Tom Fitzpatrick) in his party. They attempted to follow the Cache la Poudre River upstream, but perhaps realizing that the course was unsuitable for emigrant wagons, eventually headed northward through mountains and foothills to the Laramie Plains.

Ansel Watrous attempted to trace Fremont's actual route using the map accompanying the report. According to Watrous, Fremont may have penetrated the Cache la Poudre Canyon as far as the North Fork of the Cache la Poudre, which he then followed north and northwesterly to Boulder Ridge. From the crest of the ridge, the expedition could see the Laramie Plains in the distance. Fremont then crossed Sand Creek Pass and descended to the Laramie River in the vicinity of today's Gleneyre (north of

Four Corners). Fremont then followed the Laramie River to the Laramie Plains (Watrous 1911:24-25).

In 1850, Howard Stansbury traveled portions of what would become known as the Overland Trail, a southern alternative of the Oregon Trail. This important expedition is discussed in more detail under the heading "The Transportation Frontier", below. Numerous other government expeditions explored the regions to the north that would become Wyoming Territory but did not have any direct influence upon the study area. With the coming of the Civil War, government attention was necessarily diverted eastward. However, much of the information gathered by the Corps of Topographical Engineers during this time was used by the military during the Plains Indian Wars that began in earnest near the close of the Civil War.

Early government expeditions left no more physical traces than the fur trade, and in most cases their exact routes and camping places remain unknown. Nevertheless, these expeditions are a vital link in the chain that led to the eventual settlement of the Rocky Mountain West, and they systematically recorded much of the information previously known only to the fur trappers and traders.

#### The Transportation Frontier (Figure 5, map pocket)

The Overland Trail: By 1840, the fur trappers and traders had developed an east-west corridor across the trans-Mississippi West suitable for wagon travel. The Oregon Trail became the main route used by thousands of emigrants traveling westward to Oregon, California, and the Salt Lake Valley. However, the Overland Trail, a more southerly alternative to this route, passed through the study area and is therefore more relevant to this narrative.

Portions of what became known as the Overland Trail had been followed by Ashley in 1825 and by Fremont in 1843. Its value as an emigrant route was first officially recognized in 1850 by Captain Howard Stansbury of the Corps of Topographical Engineers. Returning from a survey of the Salt Lake Valley, he was guided along the route east of Fort Bridger by Jim Bridger. Used in conjunction with the Lodgepole Trail across extreme eastern Wyoming Territory and the Nebraska Panhandle, it offered a route about sixty miles shorter than the Oregon Trail (Stansbury 1853). Variations of this route had been used by Cherokee Indian parties bound for California even before Stansbury's expedition. It is likely that the route was well known to the fur trappers and undoubtedly had been originally blazed by the Indians. In the 1850s, the military gradually improved segments of the route (the Bryan and Bartleson Expeditions of 1856 and 1857, respectively).

The Overland Trail began receiving notoriety in 1862, when Ben Holladay transferred his overland stage and mail line from the Oregon Trail to the Overland route. The route diverged from the Oregon Trail near present-day North Platte, Nebraska, and followed the South Platte River to Julesburg, Colorado (Hafen 1926:232; Root and Connelley 1901:102).

The South Platte portion of the route was heavily used by gold seekers during the 1859 Pikes Peak gold rush. The route continued along the river to Latham (near Greeley), where it turned northwest and followed the Cache la Poudre River to Laporte (north of Fort Collins). From Laporte, it generally followed modern U.S. Highway 287 and passed through the general study area, crossing the Laramie Range to the Laramie Plains. It skirted the Medicine Bow Range to the north around Elk Mountain and crossed the North Platte River and the Sierra Madre Range via Bridger Pass. It continued westward across the Washakie Basin, picking up the Bitter Creek drainage to the Green River and joining the Oregon Trail near present-day Granger, Wyoming.

Stage stations were established at regular intervals for changing teams and feeding passengers. Laporte was the mountain division point for the Overland Stage Company, with blacksmith facilities to repair the coaches. The next two stations on the route were Park and Virginia Dale. During the worst Indian problems in 1865 following the Sand Creek Massacre, the stretch from Virginia Dale to Bitter Creek was the target of several raids, resulting in some loss of life. Robert Spotswood, the mountain division superintendent, later testified before the Senate in 1878 that "whenever a man left Virginia Dale and started on that break he is in danger of his life, for an Indian was likely to jump up from behind a bush at any point and shoot him down" (U.S. Congress, Senate 1880:47).

Joseph A. Slade had preceded Spotswood as the company agent at Virginia Dale. Slade gained notoriety by shooting James Reni, who had wounded Slade with a blast from his shotgun in an earlier argument. Slade swore revenge. When the military later captured Reni, tied him hand and foot, and placed him in a corral, Slade reportedly rode up and shot him in cold blood. Although Slade was apparently a reliable agent when sober, he became dangerous when drunk, and stories abound concerning his escapades. It is impossible at this late date to separate fact from fiction. Slade was finally dismissed from his position with the Overland Stage Company and was hanged by vigilantes in Virginia City, Montana in 1864 (Watrous 1911:73-76).

A number of military posts were created to protect the stages, the emigrants, and the telegraph line that was added to the route in 1865. The post nearest to the study area was Camp Collins, established in 1863 by Company B of the First Colorado Volunteers. Log cabins and stables were constructed a short distance upstream from Laporte, Colorado. The camp was built to protect not only the Overland Trail, but also a small number of



early settlers in the area. It was later occupied by two companies of the 11th Ohio Volunteers from Fort Laramie. The camp was moved to the site of Fort Collins in 1864 and abandoned in the spring of 1867 (Watrous 1911:211-226).

Ben Holladay, realizing that the days of the Overland Stage were numbered by the steady advance of the first transcontinental railroad, sold his holdings in 1866 to the Wells Fargo Company, which suffered heavy losses when the railroad was completed in 1869 (see Hafen [1926] and Root and Connelly [1901] for detailed accounts of the Overland Stage era). Although the Overland Stage era had ended, emigrants continued to use the route for an undocumented period of time.

General Land Office (GLO) plats dated 1877 depict the "Laramie City Wagon Road" (the route of the Overland Trail) passing through the western portion of the Glade Reservoir flood pool area in T8N-R70W and T9N-R70W. At different times in its history, the Overland Trail either passed through Hook and Moore Glade along the present course of U.S. Highway 287, or was located farther west along the base of the foothills on the west side of the hogback. It is likely that remnants of the Overland Trail exist as unimproved dirt roads and two-tracks in the study area.

Mountain Road Systems: Because the lower portion of the Poudre Canyon is dominated by steep, narrow canyon walls, early transportation systems developed to the north and south of the canyon. It was not until the twentieth century that a road was finally built through the canyon from the mouth of the headwaters of the Cache la Poudre River. The early railroad tie contractors were the first to build roads into the region in order to establish and supply tie cutting camps in the upper portion of the canyon. Secondly, gold and silver discoveries in the late 1870s and early 1880s in and around North Park prompted the construction of roads from Fort Collins and Cheyenne.

The Livermore-Log Cabin-Rustic Road: The earliest route to penetrate the Cache la Poudre region diverged from the Overland Trail at the Forks where the Forks Hotel was later built in 1875. It proceeded to Livermore, an early ranching settlement. Livermore had a post office by 1871 and a weekly mail route was established from Greeley at about the same time. Peter Huffsmith of Greeley later secured the mail contract and established tri-weekly mail and passenger service to Livermore. From Livermore, the route proceeded west to Log Cabin, another early stage stop. This portion of the route approximates today's Redfeather Lakes Road. From Log Cabin, the route continued to the site of the Manhattan gold camp near Pingree Hill. Most of this road was built in 1868 by Gilman and Carter (later Coe and Carter), tie contractors for the Union Pacific and the Denver Pacific Railroads. The Denver Pacific was a branch line connecting the new city of Cheyenne on the transcontinental railroad with Denver. Thus, ties had to be provided adjacent to the right-of-

way by floating them down the Cache la Poudre River from numerous cutting points along the headwaters (Bratt 1921:153-155; Watrous 1911:193).

From the top of Pingree Hill to the site of Rustic on the Cache la Poudre River, there was a steep hill with a drop in elevation of about 1200 feet. George W. Pingree, an early trapper and hunter, located a cabin on the site of Rustic in the late 1860s. He had cleared a three-mile trail from the top of Pingree Hill to his cabin for hauling in supplies. The tie contractors improved and widened this trail to accommodate wagons for supplying the tie camps. Thus by about 1869-1870, there was a wagon road of varying quality running from Livermore to the site of Rustic (Watrous 1911:164).

General Land Office survey plats dated 1877 (field surveyed from 1875-1877) depict portions of this road. The Livermore, Colorado, USGS quadrangle dated 1907 and the Home, Colorado USGS quadrangle dated 1916 show this route and the associated stage stations.

**The Stewart Toll Road:** A wagon road now existed as far west at the site of Rustic. It remained to complete the segment from Rustic to Cameron Pass and beyond. In May 1879, the Cache la Poudre and North Park Toll Road Company was incorporated with a capital of \$5000 to build a wagon road from the foot of Pingree Hill over Cameron Pass into North Park. The impetus for this road appears to have been silver discoveries at Teller City in 1879. Thus, Fort Collins would be connected to Teller City via one of the shortest routes. It would become the most logical supply point, to the advantage of the merchants of that city. The directors of the road company were S. B. Stewart, a tie contractor, A. H. Patterson, and L. R. Rhodes. Stewart headed the construction and completed the road as far as Chambers Lake in the fall of 1880. The toll road was extended to Teller City by October 6, 1881. The road also indirectly served Lulu City (in the northwest corner of today's Rocky Mountain National Park), where gold and silver had been discovered about the same time. Although the strikes were short-lived, there was a great deal of traffic over the toll road for three or four years. Therefore, in 1882, Stewart established a tri-weekly stage and mail line over the road from Fort Collins to Teller City. The stage trip took one day in summer, but two days after the first heavy snows. Additional post offices were established at Home and Chambers Lake, and a store and hotel were built at Cameron Pass. Stewart built the Rustic Hotel at the foot of Pingree Hill in 1881 and it became a summer tourist resort. The Stewart Toll Road became a public road in 1902. Casper Zimmerman later ran the mail and stage line along the road, and by 1911 steam automobiles were used over the first 45 miles of the route (Jessen 1980:4A-5A; Watrous 1911:268-269).

**The Flowers Wagon Road and Rist Canyon Wagon Road:** The Rist Canyon Road was built as a timber road by George Rist in about

1867. The Mason Brothers bought the road from Rist for \$75 in 1868. At that time, Joseph Mason owned the bridge over the Cache la Poudre River in Pleasant Valley. However, the brothers soon donated the bridge and road to the county to avoid paying constant maintenance fees. The Rist Canyon Road proceeded up the canyon and through Stratton Park to Stove Prairie (Colorado National Forest letter dated 12/27/1922; Watrous 1911:91).

The Rist Canyon road was extended westward by Jacob Flowers in 1879. Flowers, in association with Charles Pennock, built the road under contract to Larimer County. Construction was carried out in August and September 1879. The course of the Flowers Wagon Road proceeded from Stove Prairie west through Poverty Flat and Beaver Park, and north of Brown's Lake, Peterson Lake, and Trap Lake. It appears that the road terminated along the Stewart Toll Road a few miles north of Cameron Pass. The road never received much travel, probably due to the existence of the Stewart Road and its regular stage service. However, the Flowers Wagon Road is depicted on the Livermore 1907 USGS quadrangle and the Home 1916 USGS quadrangle. This road is currently a combination of dirt roads, two-tracks, and hiking trails through the Roosevelt National Forest (Colorado National Forest letter dated 12/27/1922; Gro-Pro Group 1976:76).

**Ute Pass Road:** The State of Colorado constructed the Ute Pass Road in 1896-1897. The General Assembly appropriated \$16,000 for a road from Bellevue, via Livermore and Ute Pass, to Walden in North Park. The road began at Log Cabin and proceeded along the route of the current Redfeather Lakes Road to West Lake. It continued west through the old Lone Pine Ranger Station, over Deadman Hill and through Deadman Park, and descended to the Laramie River via Deadman Creek. It crossed the Laramie River and passed through Glendevey, an early tie camp, and followed McIntyre Creek and Housmer Creek to Ute Pass and beyond into North Park. In 1897, a daily mail and stage line was established between Fort Collins and Walden, but it remained in operation for only about a year. A post office was established at West Lake but was also discontinued when stage and mail service were removed. According to the contractor, Frank Baxter, \$24,000 was spent on the project, but due to the steep grade to Ute Pass and the heavy sands on the west side of the pass, the road proved impractical and was abandoned (Colorado National Forest letter dated 12/27/1922; Watrous 1911:195).

**The Green Ridge Road:** This road was built in 1881 or 1882 by Cheyenne interests to connect their town with Teller City in North Park. It followed portions of the later Ute Pass Road west from Log Cabin, but then deviated through the peaks of Bald Mountain, thence along the crest of Green Ridge and south to Twin Lakes and Chambers Lake. A bad forest fire left the road covered with a tangle of logs. The Forest Service cleared the road for a hiking trail in the early twentieth century (Wheeler letter dated 10/12/1956).

Boulder Ridge-Sand Creek Pass Road: This road was constructed in 1868-1869 by tie contractors to supply their tie camps on the upper Laramie River and Chambers Lake. The road ascended the Laramie River northeast to Sand Creek Pass and continued along Boulder Ridge, crossing the Colorado-Wyoming border and continuing to Laramie, Wyoming. The road is currently a well maintained gravel road.

The Poudre Canyon Highway: It appears that portions of this road were built as early as 1904 to establish the Fort Collins Water Filtration Plant above the North Fork of the Cache la Poudre River. A road is shown terminating at this point on the USGS Livermore quadrangle dated 1907. The Poudre Valley Good Roads Association, organized in Fort Collins, fought for the establishment of a highway up the length of the Cache la Poudre Canyon. In 1912, the Larimer County Commissioners began the project using convict labor. During the winter of 1912-1913, the crews worked in the vicinity of Waterworks Hill. The laborers were transferred to the Fall River Road above Estes Park and did not return until 1916. In that year they blasted the Baldwin Tunnel out of solid rock. Due to the difficulty of the task, it took another four years to reach Rustic, where a large celebration was held in October 1920. Road construction was continued over Cameron Pass and down to Walden in North Park. The entire road system was not completed until September 1926. In the years that followed, segments were gradually paved, new bridges built, and other improvements made until the current Colorado Highway 14 became a modern paved two-lane highway throughout its length (Gro-Pro Group 1976:77; Parsons 1968:1-3; Tresner 1980:4A).

Railroad Construction: The study area was indirectly affected by the construction of the first transcontinental railroad to the north in 1867-1868. Although the Union Pacific built through and created the towns of Cheyenne and Laramie, the Cache la Poudre region was the scene of extensive tie cutting operations that will be discussed in greater detail. Once it became evident that the transcontinental railroad would bypass Denver, plans were laid for a connecting line from Denver to Cheyenne. The Denver Pacific Railroad built well east of the study area via Carr, Pierce, and Evans in 1869-1870. This line later came under the ownership of the Union Pacific Railroad. Railroad ties for its construction were cut in the Cache la Poudre region and floated down the Cache la Poudre River (Ubbelohde et al. 1976:118; Wilkins 1974).

The Colorado Central built southward from the Colorado-Wyoming border via Fort Collins to Longmont in 1877. The line reached Fort Collins on September 26 and Longmont on November 4. Again, the tracks were well east of the study area. This line was later abandoned. The Greeley, Salt Lake & Pacific Railroad built northwest from Fort Collins in 1881 to Bellevue Junction and south to stone quarries located at Stout. This line was later known as the Union Pacific, Denver & Gulf, and after 1899

as the Colorado & Southern (Ormes 1975; Ubbelohde et al. 1976:120; Wilkins 1974).

In 1881, the Chicago, Burlington and Quincy Railroad proposed building a line through the Poudre Canyon over Cameron Pass to compete with the Union Pacific Railroad. However, the Union Pacific was also interested in the right-of-way, so both concerns sent survey crews into the field. The Union Pacific immediately began grading a road bed from the mouth of the canyon and thus claimed the right-of-way. Approximately 20 miles of grading were completed at a cost of over \$100,000 before the Union Pacific abandoned the project. Two construction camps were established during the grading under the management of Charles E. Pennock and Robert Walsh (Watrous 1911:244). No other railroad lines were ever attempted in the Poudre Canyon. The Union Pacific grading attempts must have been superficial, or it seems likely that a road connection would have been made between Rustic and the mouth of the canyon sooner than 1916.

In 1889, the Colorado Central line from Fort Collins to Cheyenne was abandoned. In 1890, twelve railroad companies controlled by the Union Pacific were combined into a single system named the Union Pacific, Denver & Gulf Railway Company. One of the companies was the Greeley, Salt Lake & Pacific Railway Company. In 1898, the Colorado & Southern Railway Company was incorporated to purchase several properties, including the Union Pacific, Denver & Gulf Railway Company. The Colorado & Southern built 10.8 miles of track to Wellington in 1903. The track was extended west to Waverly in 1905 and northward from Wellington to Dixon and on to Cheyenne in 1911. Finally, the Union Pacific Railroad built a 17.2 mile extension from Fort Collins to Buckeye in 1924 (Ubbelohde et al. 1976:240; Wilkins 1974).

The only railroad line to enter the study area was built as the Ingleside Branch of the Colorado & Southern in 1906. From Bellevue Junction, it extended 9.9 miles to the Ingleside Limestone Quarry, a large operation to provide lime for the refining of sugar beets in Fort Collins. This line was extended northward from Ingleside to Rex in 1929 (Ormes 1976; Wilkins 1974; Harold Evan Roberts interview, 1975). This line has only recently been abandoned. The trackage and ties have been salvaged, but the grade and associated bridges are still intact. This line parallels U.S. Highway 287 on the east and extends from south to north through the Glade Reservoir flood pool area.

## The Railroad Tie Industry

As early as the spring 1867, hundreds of men were cutting railroad ties in the Laramie Mountains for the first transcontinental railroad. Among the pioneer tie companies were Gilman and Carter (later split into two separate companies, the Gilman Brothers, and Coe and Carter), Paxton and Turner, and Sprague, Davis and Company. All of these companies contracted with the Union Pacific Railway, which built the eastern half of the line.

The Laramie and Medicine Bow Range provided the railroad with the first substantial timber sources after crossing the treeless plains to the east. The railroad ties were needed in advance of laying the iron rails. Therefore, planning the cutting and hauling of the ties was an important part of the construction process. The "tie hack" was the principal character in the making of crossties. In this region, the lodgepole pine was the most suitable tree due to its straight, clear bole. The tie hack hewed ties from trees that averaged about eleven inches in diameter at breast height. In the building of the first transcontinental railroad, speed was the major concern. Ties were not cut to any particular specifications, and early photos show that they were often chopped on the ends. The tie hack used a broadax to hew flat two opposite surfaces of the tie. By the early 1870s, the Union Pacific required a tie that was eight feet long with a width and depth of seven inches, and with at least five inches of hewn surface on both sides (Linn 1973; Rosenberg 1984:39-40).

Most of the early tie cutting operations were in close proximity to the right-of-way, and ties were hauled with oxen and horse team to the roadbed. However, during the winter of 1867-1868, Robert Chambers, a local trapper and hunter, told a group of tie contractors about substantial stands of lodgepole pine in the vicinity of what became known as Chambers Lake at the head of Poudre Canyon. The tie contractors were impressed with the timber, but considered the site too isolated to conveniently haul the ties to the railroad right-of-way. However, Chambers showed them that they could haul the ties a short distance over the divide separating the Cache la Poudre drainage from the Laramie River drainage and float the ties down the Laramie River to the new town of Laramie located on the Union Pacific mainline. The ties were cut that winter and stacked on the river ice. In the spring of 1868, the ties were driven to Laramie in what was probably the first Rocky Mountain tie drive (Wroten 1956:25-26).

The tie drive became the standard method of transportation for this industry throughout the next seventy years. The hand hewn railroad tie industry flourished throughout the remainder of the nineteenth century due to the need for periodic tie replacement. The industry persisted in this region until 1940, when the Union Pacific discontinued the use of hand hewn, river driven ties. Sawn ties hauled by truck were used in the 1960s,

but West Coast forests gradually replaced the Medicine Bow and Laramie Ranges as a tie source for the Union Pacific Railroad (Rosenberg 1984:51).

Most of the ties for the first transcontinental railroad were cut in what soon became Wyoming territory. The Colorado railroad tie industry began with a tie-cutting contract for the Denver Pacific Railroad, a branch line built from Cheyenne to Denver in 1869-1870. The Gilman Brothers received this contract and sent a large crew up the Cache la Poudre River to establish tie cutting camps. It was their intention to cut the ties in the upper portion of the canyon and float them down the Cache la Poudre River to the right-of-way (near present-day Greeley). John Bratt, an employee of the company, described the project in his reminiscences:

It took some nerve to bid on this contract. While the price was a good one, the difficulties were many and great and the pay was not cash but bonds that our company, should it need money, might have to discount largely. In the space of two miles we had to build about thirty bridges in order to get out teams, men and supplies into the thick timber.

We had expended about \$5000.00 on roads and bridges up the La Poudre when Mr. Gilman found out he had signed the contract on Friday. He said he had talked the matter over with his wife and brother and they had all agreed that the contract would prove a bad one and he wanted to get out of it. He requested me to take the matter up with Coe & Carter, which I did...If Coe & Carter would take the entire contract, the Gilmans agreed to lose their share of money expended to date. This was agreed to. Coe & Carter filled the contract and made \$50,000 out of it (Bratt 1921:154-155).

Coe and Carter established several camps in this region and were able to furnish 1200 ties per day along the Denver Pacific line. During the winter and spring of 1868-1869, over 220,000 ties were cut and floated down the Cache la Poudre River. The operations continued at the same rate during the next year until the Denver Pacific Railroad was completed (Watrous 1911:193, 300; Wroton 1956:73-76).

The peak tie cutting period in the Cache la Poudre region lasted until about 1885, although tie drives continued on the Cache la Poudre River until about 1915. Greeley was initially the most important tie outlet. However, once the railroad reached Fort Collins (1877), it became the chief tie outlet in

northern Colorado. A boom was maintained across the river at this location to catch the ties that had traveled up to fifty miles from the headwaters of the Poudre. It is probable that ties were cut from nearly all the adjacent woodlands during this time. Coe and Carter carried on their operations above Rustic in 1869 and 1870. The St. Cloud area around Cherokee Park was the scene of tie cutting operations in the late 1860s and early 1870s. Thousands of ties were cut and then hauled by teams to the Union Pacific railroad (Watrous 1911:193, 202). In 1875, a Mr. Brush ran a tie camp on Black Mountain and attempted to drive the North Fork of the Poudre River. It took him four years to get the ties to market, and he sustained a heavy loss (Nelson Memorandum dated 8/9/1928).

The most intensive tie cutting remained along the headwaters of the Laramie River and its tributaries. Tie drives continued down the Laramie River long after the Cache la Poudre avenue ceased to be used. Tamberlane Forrester, one of the earliest residents in the Laramie River Valley, described this area upon his arrival in 1877:

The population, which was much greater then, was occupied in the cutting, hewing and floating of ties for the U.P. railroad. All the way up the different creeks on either side of the river were tie camps and the hills were dotted with the cabins of the tie makers. Dawson, who had the contract for the U.P. railroad, had his headquarters near the junction of the McIntyre and Laramie river, which in recent years has been named Gleneyre. Dawson's headquarters ran a commissariat for all the tie makers and there could always be found some one with whom to pass the time of day...The ties were gotten out during the winter, piled along the river banks, and in the spring pushed into the river and floated to Laramie in drives of from 35,000 to 250,000 taking from ten days to three weeks to make their destination, according to the flow of the water. When Dawson gave up the contract, he was succeeded by Coe & Carter, which firm through the able management of O.P. Yelton, continued to supply the railroad with the necessary ties (U.S. Forest Service, Roosevelt National Forest, Historical Data for the Laramie River District, n.d.).

As Forrester related, most of the Laramie River tributaries were cut for ties, including McIntyre, Nunn and the West Branch Creeks. The ties were driven down these drainages to the Laramie River. The main tie camp in the 1870s was located at Gleneyre. This camp became notorious as the scene of the "Ryan-Cowan



Affair." In 1877, J.J. Cowan, an employee for Dawson's tie operation, quarreled over wages with T.E. Ryan, Dawson's foreman. The site of the quarrel was the company store at Gleneyre. Cowan shot Ryan, whereupon a store clerk named A.T. Snodgrass knocked Cowan to the floor with a poker. Ryan then rose from the floor, and taking Cowan's pistol, he "beat his head to a jelly." Ryan also died from his wounds about an hour later (Wroton 1956:235).

Life in the tie camps of the Cache la Poudre country was indeed hard. Since the tie cutting operations continued throughout the winter, the elements and increased isolation weighed heavily upon the tie hacks. The winter of 1880-1881 was considered especially severe with heavy snowfall. The postmaster at Chambers Lake described the snow as well as the importance of mail in the tie camps:

Last Saturday's mail was the largest that has passed this route this winter, the pouch being about as full as it could hold conveniently. This caused the mail carrier to be somewhat out of humor, and I don't blame him as he has to carry it on his back twenty-seven miles on snow shoes.

The snow is three and a half feet deep on the level at this place and grows deeper towards Cameron Pass, where it is about five feet deep. The tie choppers in J.J. Bush's camp near here all wear snow shoes, as it is impossible to get around without them (Letter from J.P. Van Dolah to Fort Collins Courier, 1/27/1881).

Camp visitors from the "flatlands" seemed intrigued by the lifestyles of the tie hacks. One reporter wrote about the presence of mountain lions in 1875:

The lumbermen of the Upper Poudre lead a wild and adventurous life. When the winter snows drive game down from the range, their cabins are actually surrounded by night and by day. Then every cabin is an arsenal and guns are loaded for protection as well as for game. Mountain lions roar around them in the night watches, and the men who can sleep to such music must be deaf, indeed (Greeley Tribune, 7/26/1875).

An English traveler visiting a tie camp near Chambers Lake in 1879 wrote:

This camp is on top of a hill whose altitude seemed to the writer to be at least 27,000 feet or possibly more. If it was not that high it ought to have been for it seemed situated in the midst of a vacuum. On arriving at the top the atmosphere was so light that it seemed hardly possible to breathe. The writer could just manage to gasp dinner and sank exhausted to the ground (Fort Collins Courier, 12/2/1879).

In addition to the back-breaking labor, extreme weather conditions, and isolation, there were many dangers inherent in the work of a tie hack. The tie drives were conducted when the streams were running full with snow melt. James Holland was nearly drowned on the Cache la Poudre in 1885 when he was thrown into the water and carried over 200 yards, often rolling underwater and crashing against rocks (Wroton 1956:276). In 1875, a man was killed near the West Fork of the Laramie River. A flume was being used to carry the ties to the river, and he was killed when one of the ties bounced off the pile and struck him (U.S. Forest Service, Roosevelt National Forest, Historical Data for the Laramie River District, n.d.). Tie jams were especially treacherous and usually called for experienced men who dislodged strategic ties to loosen the jam. Tremendous water pressure built up behind these jams, and they could suddenly explode free, as during this jam on the Cache la Poudre in 1875:

Suddenly there will be a mighty upheaval of the entire mass; followed by a roar and crash as of a tremendous explosion, and with a mighty surge the vast volume of water and the mountain of timber goes leaping down the stream with the force and fury of ten thousand demons (Greeley Tribune, 7/28/1875).

In conclusion, the railroad tie industry represented the first systematic development and economic exploitation of the Cache la Poudre region. The early tie contractors laid out a system of roads, many of which are still in use today as major transportation routes through the Roosevelt National Forest. The tie industry was one of the most important in northern Colorado and especially Larimer County during the 1870s and 1880s, due to the number of new railroad lines that were built in this area. It was an important source of revenue and jobs to communities such as Fort Collins, Greeley, Livermore, Laporte, and Bellevue. The Union Pacific recognized the importance of this tie cutting region and established an agency at Fort Collins for the purchase of ties, with S.B. Stewart as the agent. In 1883, the local newspaper recognized the economic importance of the tie industry by stating that the tie drives that year had put seventy thousand dollars into circulation. Many early settlers in the region got their start by working for the tie contractors. Many ranchers

worked at least part-time cutting ties to augment their income. Several Poudre Valley farmers raised and sold produce to supply the mountain tie camps, and local merchants sold large quantities of supplies to the tie contractors. At the conclusion of one tie drive in 1884, a Fort Collins merchant sold over \$700 worth of clothing to tie hacks in one day (Fort Collins Express, 8/13/1884). The railroad tie was considered to be the most important product of the Rocky Mountain forests until the early 1900s (Wroton 1956:149-156).

### Mining in the Cache la Poudre Country

Mining never achieved the significance of tie cutting in the Cache la Poudre region. During the initial prospecting phase, hopeful miners scoured the foothills and mountains of western Larimer County. The only significant finds occurred at about the same time (1879-1880) at Teller City in North Park and Lulu City, near the crest of the Continental Divide between Milner and Cameron Passes in the northwestern corner of today's Rocky Mountain National Park. Although these gold and silver finds were short-lived, several hundred miners lived and worked at both towns at their peak. Teller City reached a population of 1200 and even published a newspaper. In addition, the camps were considered significant enough to warrant roads from the nearby cities of Cheyenne and Fort Collins. The Fort Collins route also had a regular stage and mail route to both towns. However, the camps were still isolated from railheads and smelters, and the veins soon played out. By 1884, both camps were nearly deserted (Brown 1968:211-216; Eberhart 1974:108-110; Watrous 1911:268).

In retrospect, it is little wonder that prospectors continued to search the foothills and mountains in and around the Cache la Poudre region. Fabulous strikes had been made in the same mountain chain farther south around Central City, Georgetown, Silver Plume, Fairplay, and elsewhere. There was a short-lived boom at Crystal Mountain in 1883 accompanied by a flurry of locations and filings, but when the ore was assayed, it carried only small quantities of zinc and the camp was abandoned. Several copper lodes were discovered at Virginia Dale, Grey Rock, and St. Cloud, but none of these finds turned into commercial successes. In 1865, copper was discovered in Howe Gulch about six miles west of Fort Collins. The claim was abandoned for several years and then relocated and named the Empire by W.C. Dilts. He later sold the claim to the Boston & Colorado Copper Mining Company in the late 1890s for \$10,000. The company proceeded to spend a large sum of money on development and sent several carloads to the Denver smelters for treatment. The returns were so low that the operation was finally abandoned. This mine is depicted on the USGS Livermore quadrangle dated 1907 (Watrous 1911:153).

The mining camp of Manhattan was established in 1886 about four miles northwest of present-day Rustic. Gold was discovered there during a systematic search of the mountains organized by Fort Collins businessmen. The inevitable rush ensued, and a concentrating works was built to treat the ore in 1888. However, the meager deposits did not justify the effort, and the camp was finally abandoned. According to business directories, the population of Manhattan was 150 in 1887, 60 in 1890, and 40 in 1896. The transient population probably swelled those numbers during the peak years. Grant Snyder published a newsletter, the Manhattan Prospector. Manhattan also had a school and post office, but both closed about 1900. A Forest Ranger station was maintained at Manhattan in the early part of the twentieth century (Dimon 1986:15; Swanson 1971:148-158; Watrous 1911:153).

In 1887-1888, miners struck gold in Poudre Canyon above Rustic. Pioneer settler John Zimmerman and his brother Mike opened the North Star and Elkhorn Mines. They erected a five-stamp mill and reduction works along the river bank at what became known as Poudre City. The Zimmermans crushed a large quantity of ore and sent the retorts to St. Louis. However, the returns were so poor that the operation was eventually abandoned. Ruins of the stamp mill still remain at Poudre City (Fry n.d.:16-17; Watrous 1911:153-154).

Summing up the mineral resources of Larimer County in 1911, Ansel Watrous stated: "Almost every foot of the mountain region from the southern to the northern boundaries of the county and from the foothills to the summit of the Medicine Bow Range has been prospected, but not a single profit-producing mine has ever been opened and worked" (Watrous 1911:153).

However, other less romantic mining ventures were more successful. Large quarries were developed at Bellevue and Stout in the early 1880s that provided a high quality building and paving stone. White, gray, and red sandstone, granite, and mottled marble were quarried at these locations and provided stone for "some of the finest buildings in Denver, Omaha, and Kansas City." Between 1882 and 1890, nearly one thousand men were employed in these quarries. Limestone quarries were opened at Ingleside in 1904. The lime was used to refine sugar from sugar beets at several sugar beet factories in northern Colorado. Charles Roberts, a local rancher, and his partner Charlie Boettcher opened the quarries to serve the Fort Collins factory built in 1902. They built a lime kiln there in 1905. At one time there were from 50 to 75 workers' houses and a hotel at Ingleside and a work force of about 200-250. Most of the laborers were contract labor groups, including Japanese, Serbians, Greeks, Swedes, Norwegians, and Mexicans. A railroad branch was built to serve the Ingleside Quarry in 1906 (Harold Evan Roberts Interview dated 1975, and Charles E. Roberts obituary, Biographical Files, Local History Collection, Fort Collins Public Library; Watrous 1911:152).

The mining industry was never as significant in Larimer County as in other parts of Colorado. No commercial gold or silver mines were ever developed. Nevertheless, mining exploration was diligently pursued through the late nineteenth and early twentieth century, because just enough minerals were present to kindle optimism for a big strike. The numerous prospect holes and collapsed adits throughout the foothills and mountains of the Roosevelt National Forest attest to the intensive level of prospecting and exploration of the Cache la Poudre region. The almost continuous search for minerals attracted large numbers of people to the area. Many gold-seekers stayed, took up other occupations, and helped settle the region. Even such distant gold and silver camps as Teller City and Lulu City acted as the impetus for major road-building efforts in the 1880s, which opened up the region for such other kinds of development as ranching and tourism. The sandstone and limestone quarries were economic successes and provided jobs and revenue for hundreds of workers and area merchants.

### Settling the Poudre Country

#### The Era of the Cattlemen:

Open Range Days: Cattle ranching in this region emerged with the construction of the transcontinental railroad through southern Wyoming Territory in 1867-1868. It was not until the 1850s that westerners began to realize that the same prairie grasses that sustained thousands of buffalo could also feed domestic cattle. Small herds of cattle were raised on road ranches along the major emigrant trails, but the Texas cattle drive, coupled with the arrival of the railroad, were the two chief stimuli for cattle raising in this region. A large surplus of Texas cattle that could not be sold during the Civil War were driven north in great trail drives and fattened on the rich prairie grasses in northeastern Colorado and southeastern Wyoming Territories adjacent to the railroad. The railroad, in turn, shipped the cattle to eastern markets (Krakel 1954:167-170; Spring 1942:17-18).

Such pioneer ranchers as John W. Iliff, the Brush Brothers, the Wyatt Brothers, and Asa Sterling made their fortunes in this region. Using existing homestead laws and the open range system of ranching, the pioneer cattle ranchers usurped large blocks of the public domain by controlling the major water sources. In this semi-arid region, land without year-round water sources was virtually useless. Cattle roamed on unfenced year round, existing on the stem-cured prairie grasses throughout the long winters. This system proved untenable when the range became overcrowded, and the devastating Blizzard of 1886-1887 resulted in tremendous cattle losses and the demise of the free-wheeling open range system as well as many of the "cattle barons." (The story of the open range cattle era has been told in a number of

sources; see Ubbelohde et al. [1972:163-171] and Larson [1978:163-194] for detailed discussions relating to Colorado and Wyoming.)

Ranching in the Cache la Poudre Country: Ranchers were first attracted to the country north of the Cache la Poudre Canyon in the late 1860s. The Livermore country, as it was called, contains numerous streams, including the North Fork of the Cache la Poudre River, North and South Lone Pine Creek, Dale Creek, Meadow Creek, Rabbit Creek, and Stonewall Creek. The country is interspersed with open parks and grass-covered hills with bottom lands for meadows along the drainages. Because of its proximity to the Overland Trail and the first transcontinental railroad, the Livermore country was recognized as ideal for livestock raising by travelers, market hunters and trappers, and employees of the railroad tie contractors. Therefore, the majority of the first permanent settlers were sheep and cattle ranchers.

Several ranches were established in the late 1860s by ranchers who had previously hunted or worked in the region. However, the Livermore area was intensively settled during the 1870s. The first residents considered the Livermore country to extent westward to the Continental Divide. Today, the Livermore grazing country is bordered by the Colorado-Wyoming line on the north, the Poudre Canyon on the south, the plains on the east, and a rough divide including the Bald Mountains, Black Mountain, and Boulder Ridge on the west (Larimer County Stockgrowers Association 1956:12; Watrous 1911:193).

The name Livermore was derived from the names of two prospecting partners, Adolphus Livernash and Stephen Moore, who built a cabin about one-half mile south of the site of the Livermore settlement in 1863. Two years earlier, N.C. Alford, Jacob Cornelison, and William Calloway established a hunters' camp on Meadow Creek north of Livermore. Other parties also used the area for market hunting prior to permanent settlement by ranchers. William Calloway later came back to the Livermore country and established a ranch in 1867. His brother Martin joined him in 1869 and settled in Boxelder Canyon. Martin's wife was reportedly the first white woman to live in the Livermore country (Watrous 1911:192-193).

The railroad tie industry began to flourish in the region at this time, and some of the new settlers grew produce for the camps. Steve George and "French Pete" had truck gardens at the mouth of Lone Pine Creek in 1869-1870. In 1870, John Hardin and Fred Smith, who had settled in Pleasant Valley, established ranches on South Lone Pine Creek 24 miles west of Livermore. They raised cattle and were also in the lumber business. Other early settlers who established ranches in the Livermore country in 1870 included Charles Emerson, H.A. Keach, Solomon Batterson, John W. Calloway, and Jacob Mitchell. A post office was established at Livermore, and this small settlement became the

center of the surrounding ranching community. The Livermore school district was organized in 1871 (Watrous 1911:194).

New settlers continued to stream into the Livermore country, and most were intent on establishing ranches. Andrew Gilchrist located a ranch at the mouth of Lone Pine Canyon in 1871. Gilchrist later moved to Wyoming and made his fortune in the sheep business. The Emerson Brothers also established a cattle operation in 1871. Other early settlers in the Livermore country in the 1870s were R.O. Roberts, George Barlow, who started a blacksmith shop at Stonewall Crossing in 1872, Lewis Wetzler on Lone Pine Creek in 1874, and T.A. Gage, who bought the Crystal Springs Ranch in 1874. By 1880, the most prominent stockmen in the Livermore country were the Emerson Brothers, H.T. Miller, T.A. Gage, Asbury and Pierce Riddle, S.B. Chaffee, S. Weymouth, L. H. Chase, Moody and Buzzell, John S. Williams, John McNey, the Bennett Brothers, William Calloway, James and Daniel Hardin, John Hardin and D.M. Halligan. Although most of these individuals raised cattle, some also raised sheep, horses, and dairy herds (Watrous 1911:194-195).

It is beyond the scope of this study to provide a detailed history on every ranching family in the Livermore area. This narrative will focus on a representative group of stockgrowers, especially those who established ranches or owned land within the study area.

The Larimer County Stockgrowers Association was established at Livermore on August 20, 1884. Dozens of families had established ranches in the area by this date, and Livermore was the stockgrowing center of the county. The officers were among the leading stockmen of that era. T.A. Gage was chosen President; Frank Kibler, Vice-president; and S.B. Chaffee served as Secretary-Treasurer (Larimer County Stockgrowers Association 1956:3).

The Larimer County Stockgrowers Association was formed to organize what was becoming a rather crowded country under the unfenced open range system. Round-up districts were established, round-ups became highly organized, and rustlers were prosecuted. However, after the Blizzard of 1886, the number of livestock decreased for many years; the range was gradually fenced and irrigated according to land owners, and there was less need for concerted action. The Association then went through a period of inactivity until livestock numbers increased, and the national forests instituted grazing leases. On January 6, 1917, the Association was reorganized with a new constitution and by-laws, election of officers, and membership fees. The purpose of the new association was "to work with the National Forest officials and generally promote and protect the welfare of the industry (Larimer County Stockgrowers Association 1956:3).

One of the early cattle ranches still in existence is the Kremers Ranch, located near the proposed Glade Reservoir

floodpool. (It is known as the Kramer Ranch on the USGS Laporte quadrangle.) Charles W. Howell filed on 120 acres here on November 9, 1878, but George W. Meldrum patented a 160-acre parcel that included the ranch headquarters in January of 1885. George Meldrum's brother Norman was political boss in Larimer County and served as Secretary of State under Governor Routt. Because of its long history, the ranch has changed ownership many times. Owners included Norman Meldrum, James H. Jones, Carter-Cotton, James Swan, Elmore Vanderwark, and Nathaniel Alford. The ranch was later sold to John L. Routt, the Governor of Colorado (BLM Land Records, Denver; Larimer County Stockgrowers Association 1956:13).

One of the owners of the Kremers Ranch was Nathaniel C. Alford, who acquired it in 1903. Alford was a Livermore pioneer and prominent figure in Larimer County. He moved from Boulder County in 1871 and established a ranch on Rabbit Creek (Watrous [1911:200] gives a date of 1867). A small ranching community named after Alford sprang up. A post office was established at Alford in the 1880s but was later discontinued. Alford raised horses and cattle at this location and brought the first registered Percheron stallion into the county. He moved to Fort Collins in 1880. In 1877, Alford became a member of the first House of Representatives and sponsored the bill to establish the Colorado Agricultural College at Fort Collins. In 1881, he established three apiaries and sold honey. Alford also became the director of the Poudre State Bank in 1893 (Fort Collins Coloradoan, 6/24/1964; Watrous 1911:200-201, 348-349).

Alford was instrumental in the construction of the Larimer County Ditch (Water Supply and Storage Company Ditch) and was president of the company. He bought up large parcels of land along its course, including part of the Kremers Ranch. His son, Fred C. Alford, and R.A. Maxfield bought the ranch from Alford in 1909. In 1943, W.J. Kremers and family moved to northern Colorado from North Dakota. They bought the ranch from Maxfield and Alford and operated it after that date (Larimer County Stockgrowers Association 1956:14-15).

Another Livermore pioneer was Robert O. Roberts, who came to the Livermore country with his family in 1874 and ran the Fisk Hotel for one year. The following year they built the Fork's Hotel at the intersection of the Overland Trail and the Livermore Road. In 1882, they sold the hotel and moved to the Roberts Ranch, located on the North Fork of the Cache la Poudre River about one mile north of Livermore. There, along with his sons George, Charlie, and Ernest, Roberts built a substantial cattle operation. Charlie moved to Denver in 1887, but later returned to establish the Ingleside Quarry. The Floyd Coombs Ranch is located on land patented by Charlie Roberts at Ingleside in 1905 (the Coombs Ranch is depicted on the USGS Laporte quadrangle adjacent to the site of Ingleside). George and Ernest formed the Roberts Brothers Cattle Company and worked together with their father. In 1898 or 1899, their parents moved to Fort Collins.



The Roberts Brothers Cattle Company reached its peak in 1940, with 14,629 acres of deeded land and over 800 head of cattle. The company was dissolved in 1943, and George Roberts and his son Evan operated as the Roberts Cattle Company. In 1951, the land was divided between George and his brother Ernest (Larimer County Stockgrowers Association 1956:17-25; Watrous 1911:419-420).

The McMurry Cattle Company Ranch was purchased in 1907 by B. A. McMurry, John Schroeder, and Dr. Kilgore. This extensive livestock operation included parts of several other ranches, including those of Jim Vangel and Charlie Roberts. It included the McMurry Ranch headquarters, shown on the USGS Laporte quadrangle in the northern portion of the proposed Glade Reservoir floodpool. The McMurry Cattle Company also owned large land parcels in Grey Rock Meadows and land now covered by the Seaman Reservoir. It operated as a sheep ranch in the early 1900s, and in 1920 the company, owned by Chandler and McMurry, started running cattle. In 1924, after McMurry died, the company was reorganized to the McMurry Farms and Investment Company. After Chandler died the name was changed to the McMurry Cattle Company. Other ranches were subsequently added, including the George Schofield Ranch in Poudre Canyon, the Kimber Ranch, and the Clarence Bollen Ranch. All these holdings were operated as one unit (Larimer County Stockgrowers Association 1956:16).

Bart Griffith came to the Livermore region in about 1883 and worked as a foreman on the Emerson Brothers Ranch for eleven years. He later bought a relinquishment of 160 acres and started his own operation. He gradually expanded his operation southward to Grey Rock by buying out several homesteaders. He also had a grazing permit in Deadman Park that was used as summer pasture. His son Horace became a partner in the firm in 1918. Bart Griffith died in 1941, and left the ranch to his son (Larimer County Stockgrowers Association 1956:29-31; Watrous 1911:319-320).

The Emerson Brothers Ranch was established as a result of the railroad tie cutting operations in the Cache la Poudre region for the Union Pacific and Denver Pacific Railroads in the late 1860s and early 1870s. Horace Emerson's uncle was Levi Carter, one of the partners in Coe and Carter, the largest tie cutting contractors for the railroad. In 1868, Horace was a foreman for Coe and Carter, cutting ties around Chambers Lake for the Denver Pacific contract. In 1871, he and his brother Charles took up homesteads on Lone Pine Creek near Livermore and started raising cattle. They stocked the range with cattle brought in from North Platte, Nebraska. Horace continued in the tie business while Charles managed the cattle business. The brothers bought a homestead near Chugwater, Wyoming, to use for summer grazing, and would drive the cattle along the route of present-day Interstate 25 through the Natural Fort and Cheyenne. The Livermore Ranch was enlarged by purchasing the Armstrong homestead on the northeast flank of Livermore Mountain and the Brooker place. After homesteaders crowded the Chugwater range, they obtained

summer range for their cattle by purchasing the William Shipp Ranch at Nunn Creek near the Laramie River. Horace and his wife later settled in Fort Collins, and Horace died in 1917. In 1916, Horace's daughter Dorothy married Thorwald Sackett, and they moved to the ranch with Charles. Charles continued to manage the ranch, adding more homesteads between 1920 and 1935 for pasture. Sam Hansen bought the operation in 1940 and greatly expanded it by purchasing 7240 acres of the Elliot ranch. In 1947, he bought the Perry and Farrel homesteads at Redfeather, consisting of 920 acres. In 1949, the Fanning Ranch was added, consisting of 1535 acres, making the Hansen Ranch one of the larger operations in the Livermore area (Larimer County Stockgrowers Association 1956:31-37; 300, 333).

The Currie Ranch holding developed from a fishing trip along the Poudre in 1906. John Currie passed through the Sam Sloan Ranch (formerly the Asbury Riddle homestead dating from the 1880s) and decided to buy it. Many of the pioneer homesteads and ranches in the Livermore area were purchased over the next 50 years by John and his son Clarence. Properties around Green Mountain, Mount Simon, Mount Mariah, and Black Mountain were consolidated into one large ranch holding. In 1922, Clarence bought all of his father's holdings, including the cattle and horses, and continued to operate and enlarge the cattle ranch well into the 1950s (Larimer County Stockgrowers Association 1956:42).

The above ranches are only a few of the many stock raising operations that were established throughout the region over a century. Ranch holdings and ownerships were constantly changing throughout this period, resulting in the consolidation of the smaller homesteads and farmsteads into large ranch holdings (see Figure 6 for a map of consolidated land holdings in 1940).

The Small Homesteader and Agricultural Colonies: Federal land policy in the second half of the nineteenth century was based on two premises. The first was that settlement of the public domain was more important than revenues, and the second was that the public domains should be broken up into small homesteads, thereby benefiting the largest number of people while reducing the hold of land speculators and those already holding sufficient land (Robbins 1942:91). However, the semi-arid expanses of the western United States were better suited for large-scale stock-raising operations. Indeed, in most areas a settler could not subsist on a 160-acre homestead parcel. Secondly, the pioneer cattle ranchers already occupied most of the prime land by the time the small farmer came on the scene (see Ubbelohde *et al.* [1972:185-192, 247-257] for a detailed discussion of federal land policy and the small farmer in the West).

The climate became more favorable for the small farmer/homesteaders after the open range era had ended, and ranchers were forced to fence their lands. Furthermore, the Western plains experienced a prolonged period of above average rainfall,

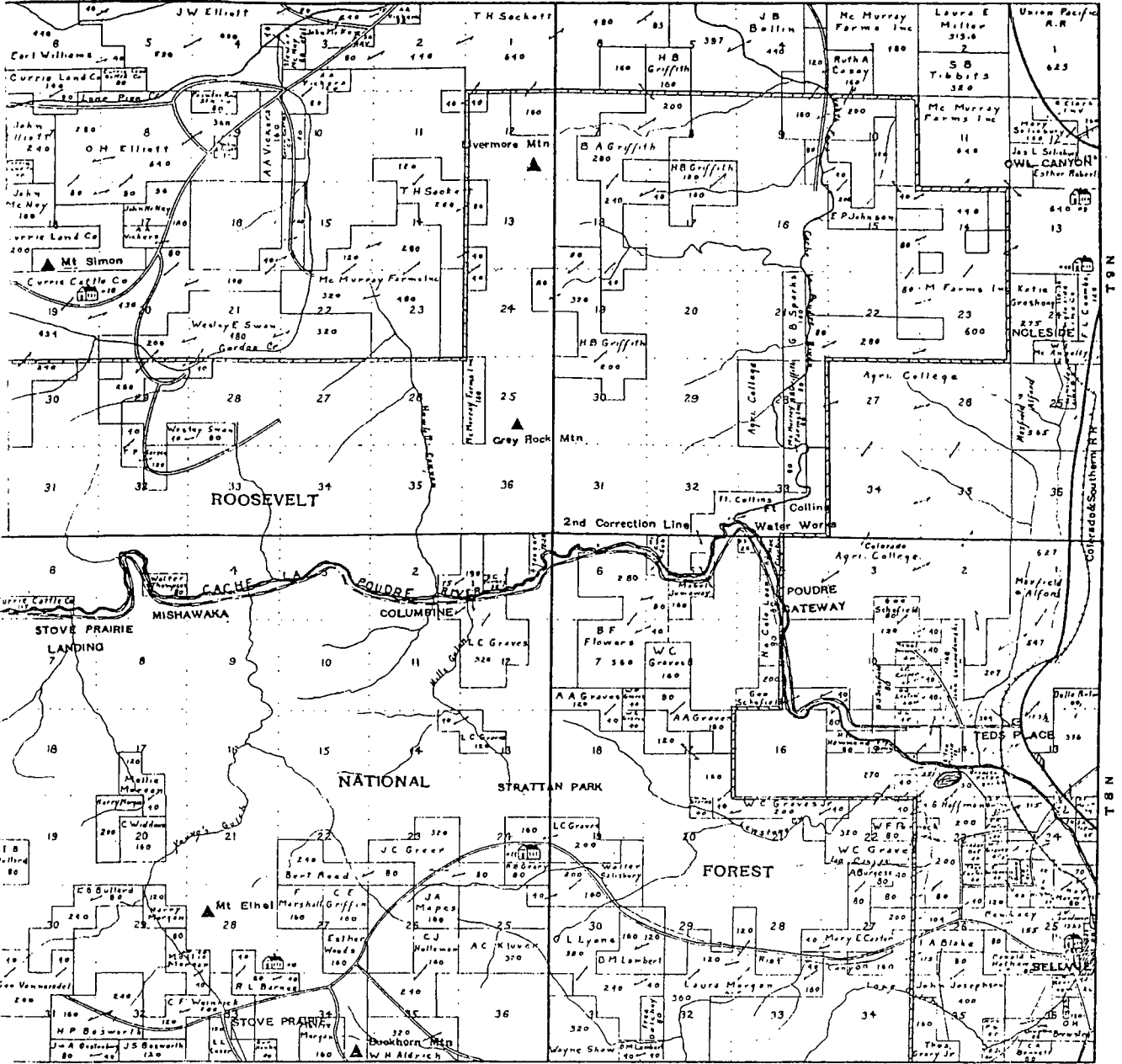


Figure 6. An atlas of Larimer County from 1940 depicts land ownership in the study area. By this point in time, most small homesteads and farmsteads had been consolidated into larger ranch holdings (Larimer County Atlas, 1940, by Clarence C. Thomas).

enhancing the prospect of farming. Finally, the growth of agricultural experiments and colonies provided a means to combat the cattleman with an organized force.

Agricultural colonies began in Colorado in the 1870s. They followed a basic pattern of initial organization, usually originating in the large cities of the East or Midwest and purchasing land blocks from a railway company or subsidiary land company. There were varying degrees of cooperation and leadership among the colonists. Most ventures were communal agricultural efforts based on irrigation. The railroads were eager to promote such schemes to help settle the land through which their lines passed, thereby increasing their profits. Fort Collins was established by the Fort Collins Agricultural Colony, organized by General Robert A. Cameron, a leader of the nearby Union Colony at Greeley. It was established in 1872 upon the abandoned Fort Collins Military Reservation. A town ditch was built in 1873, and an irrigation canal followed the next year. Although Fort Collins grew slowly, the Colorado Central Railroad reached the town in 1876, and the Colorado Agricultural College was located there (despite the protests of Greeley) under the Morrill Act, and opened in 1879. Many sections of land within the study area were set aside for an agricultural college in 1886 under State Selection (Ubbelohde *et al.* 1972:128-129; Watrous 1911:211-265).

The first wave of prairie settlement ended when the wet weather patterns changed to droughts in the late 1880s and early 1890s. However, enthusiasm for dry land farming around the turn of the century, coupled with increased immigration to the United States and the increasing scarcity of good cheap farming land, encouraged homesteaders to return to the plains armed with the new farming techniques (Larson 1978:359-365; Ubbelohde *et al.* 1972:249-251). Dry land farming techniques are sound and still practiced today, but they require a basic minimum rainfall. When rainfall drops below that minimum, crops fail without irrigation. Although the dry land farming area is more relevant to the prairies east of the study area, numerous irrigation projects tapped the water sources of the nearby mountain ranges and passed through the study area.

**Irrigation Projects and Water Systems:** Early settlers around Fort Collins quickly realized the need to irrigate their lands. Most of the early ditches were small and merely carried water from the Cache la Poudre onto their croplands. Later ditches were larger and designed to carry water onto higher lands, which were then planted with oats and wheat. The first irrigation ditch was dug by G.R. Sanderson in the foothills near Bellevue in 1860, tapping the Cache la Poudre River. Improved transportation provided the pioneer farmers with many markets for their produce, including the mining camps in the mountains. Most of these farmers grew wheat, oats, hay, and vegetables, and several grinding and flour mills were established in and around Fort Collins. The town ditch was built in 1873 by A.R. Chaffee.

B.H. Eaton and John C. Abbott built the No. 2 irrigating ditch for Fort Collins in 1874, which irrigated bluff lands south and west of town. In 1879, the Pleasant Valley and Lake Canal was constructed by John C. Abbott to water 6,000 to 7,000 acres of land west of town (Watrous 1911:71-72, 226-227, 233, 242).

In 1883, the Fort Collins water system was completed, diverting water from the Cache la Poudre River west of Laporte. The water was carried through an open ditch three-quarters of a mile to a pump house and was forced through the city water mains by pumps. Fear of typhoid and the rapid growth of Fort Collins in 1902-1903 required the enlargement of the waterworks system. Therefore, in 1903, the people of Fort Collins voted to issue \$150,000 worth of municipal bonds. The proceeds from the sale of the bonds were used to expand the existing facilities. The City of Fort Collins Water Filtration Plant was constructed above the North Fork of the Cache la Poudre River in Poudre Canyon in 1904. The USGS Livermore quadrangle dated 1907 (surveyed from 1905-1907) shows two buildings at this site, probably constructed to house pumping machinery. A wooden pipeline was built up the canyon to connect this plant with the existing water system. During flood stages, the river carried large quantities of impurities, so that it was necessary to shut down the supply for several days at a time. Therefore, in 1909, a mechanical filter was installed at the waterworks (Nortier and Smith 1982:25, 38; Watrous 1911:254).

In 1913, a filter building containing six sand filters was added to the Poudre Canyon facilities. In 1925, a new filter building was constructed next to the 1913 building. In addition, a 185,000-gallon washwater tank was constructed on the side of the hill, which provided a gravity backwash system to replace the old pump system. A new presedimentation basin, a flocculation-sedimentation basin, and a chemical feed and storage facility were also constructed at that time. All new construction was completed by 1927. Improvements continued in 1947, when a new flocculation-sedimentation basin and chemical feed and storage building were constructed. The earlier basins were converted to settled water holding basins. Finally, in 1955, six new sand filters were installed, and in 1973 the older filters were taken out of service (Nortier and Smith 1982:29-30).

Modifications continued in 1960, when a second flocculation-sedimentation basin was constructed adjacent to the 1947 basin. In 1973, a new presedimentation channel was constructed, and modifications were made to the existing intake structure. The flood of 1976 damaged the facilities, and the U.S. Army Corps of Engineers had to repair embankments, the pretreatment channel, and the access road (Nortier and Smith 1982:30-31).

The most recent modifications to the Poudre Canyon Plant occurred in 1977. A new interceptor drain, pumping station, and multi-celled solids drying basins were built. A two-celled wash water lagoon and return pumping station were also added. A new

chlorine and polymer feed and storage facility was added to the existing filter building, and emergency generator equipment was installed for use in a power outage (Nortier and Smith 1982:30-31).

The plant was closed in 1986 but is still maintained and may be placed back into service in the future (Benjamin Alexander and Molly Nortier, Fort Collins Water Utilities, Administration and Conservation, personnel communications to R. J. Rosenberg, 12/7/87). The filtration plant is located within the proposed mainstem floodpool area and would be inundated.

Numerous nineteenth and early twentieth century water diversion projects were devised with the intent to divert additional water from other high country drainages, such as the Laramie River, into the Cache la Poudre River. This increased water was used for the various irrigation canals that tapped the river at the mouth of the canyon and carried water onto prairie lands throughout eastern Larimer County and portions of Weld County. Although these projects do not directly affect the study area, they demonstrate the importance of the Poudre Canyon corridor, not only for public water consumption, but also for agricultural use throughout the eastern plains.

The Larimer County Canal Company, later known as the Water Supply and Storage Company, was organized in 1882 to deliver irrigation water to the farmers of Larimer County. The company built a ditch on the north side of the Cache la Poudre River near the foothills that carried water for a distance of 70 miles through the eastern portion of Larimer County and into Weld County. It was 30 feet wide at the top and 20 feet wide at the bottom. The company built numerous reservoirs on the prairie to store water when the river was running high. However, it still did not provide enough water to supply all irrigating needs. Therefore, in 1886, the company built an earthen dam at Chambers Lake to increase its storage capacity. On June 8, 1891, a heavy rainstorm caused the dam to break. The company rebuilt the dam using round pilings for additional stability, but it washed out again in May 1904. In 1910, the company again rebuilt the dam with concrete and raised it 10 feet in height (Watrous 1911:156-158).

In 1891, the Water Supply and Storage Company sought additional water sources in this region and built the Skyline Ditch, also called the Laramie River Feeder Ditch. The ditch began on the northern slope of Mount Cameron and tapped the west branch of the Laramie River. It swung around the eastern flank of the mountain to Chambers Lake, a distance of five miles, and emptied into the lake. This difficult engineering feat called for the building of one tunnel 110 feet long through solid rock (U.S. Forest Service, Roosevelt National Forest, Redfeather District Office, "History of Water Storage in Cache la Poudre River Canyon", 1967; Watrous 1911:156-158).

The Water Supply and Storage Company also built the Grand River Ditch to tap water flowing from the Never Summer Range to the Grand or Colorado River. This work may have started as early as 1893 and continued for many years as the ditch was extended to other drainages. This ditch went over La Poudre Pass through the old Lulu City area and tapped Bennett Creek, Dutch Creek, and other drainages in the area. The ditch was completed by 1908 and then extended to Baker Creek in 1934-1937. There were at least six construction camps located along the line of the ditch dating from the different time periods (U.S. Forest Service, Roosevelt National Forest, Redfeather District Office, "History of Water Storage in Cache la Poudre River Canyon", 1967; Watrous 1911:156-158).

Other early twentieth century water diversion projects in the same area included the construction of the Joe Wright Reservoir (1904), the Peterson Lake Reservoir (1922), the Long Draw Reservoir (1932), and the Barnes Meadow Reservoir (1929). The City of Greeley bought the Peterson Lake Reservoir and the Barnes Meadow Reservoir. The Michigan Ditch was constructed by John McNab and William Rist and ran from Lake Agnes to Cameron Pass. The Nunn Creek ditch was built in the early 1900s and was located in the Nunn Creek Basin-Deadman Park area. It diverted water from the Laramie River to the Cache la Poudre River (U.S. Forest Service, Roosevelt National Forest, Redfeather District Office, "History of Water Storage in Cache la Poudre River Canyon", 1967; Watrous 1911:156-158).

The Laramie-Poudre Tunnel was conceived as part of an irrigation program as early as 1902. The scope of the project gradually increased, but basically involved diverting water from the Laramie River through the three-mile long Rawah Ditch and through a tunnel bored under Green Mountain to the Cache la Poudre River. Surveying work for the tunnel began in September 1909. The Links Lake Company combined with the Mitchell Lakes Reservoir Company and became known as the Laramie-Poudre Reservoirs Company. A large construction camp was set up at the east portal, and the contractor, J.A. McIlwee, started excavating the tunnel on Christmas Day. A smaller construction camp was also established at the west portal. All equipment was hauled in via Livermore, down Pingree Hill through Rustic, and up the canyon to the site. The tunnel was drilled and blasted through solid rock. The 11,294-foot tunnel was completed on July 27, 1911. The property is now controlled by the Water Supply and Storage Company (Jessen 1985:4).

The North Poudre Supply Canal Tunnel was constructed by the North Poudre Irrigation Ditch Company, starting in about 1950. It consisted of three tunnel segments to tap the waters of the Cache la Poudre in the canyon above the City of Fort Collins Filtration Plant. The first tunnel cut off the large bend of the river near the filtration plant by tunneling east through the ridge. Two more shorter tunnels were bored through the hogbacks on the east and west side of Hook and Moore Glade. The system

was completed by May 1953 (Larimer County Stockgrowers Association 1956:16).

Agriculture and urban areas in eastern Colorado are highly dependent on the adjacent mountain watersheds through which the Cache la Poudre River passes. This river corridor is also the principal route by which these waters are carried from the high mountains down onto the plains. This complex system of ditches, canals, storage reservoirs, lakes, and pipelines is the lifeblood of hundreds of thousands of people living on the eastern plains of northern Colorado today.

Homesteading within Poudre Canyon: Although the study area is bordered on the north by one of the prime stock-raising regions in northern Colorado, the actual proposed reservoir areas (with the exception of Glade Reservoir) within Poudre Canyon were seldom filed upon because the country was steep, rocky, and heavily forested, generally unsuitable for large scale stock raising. Most of this land became a part of the National Forest system in the early twentieth century without ever having been filed upon. Land records reveal that the filings that were made within the study area consisted of small parcels (160 acres or less), starting in the early 1880s. Settlers used the conventional Homestead Act of 1862 or purchased their land outright with Cash Entry Patents. Homestead activity continued through the Dry Land farming era and into the 1920s, when most of the suitable land had already been taken up or had become part of the National Forest system. Many homestead parcels failed or were canceled or relinquished, to be ultimately patented by later settlers. The Stock Raising Homestead Act of 1916, which allowed a settler to file on up to 640 acres of land, was used very little in the study area due to the establishment of the Colorado National Forest (later called the Roosevelt National Forest). This act had generally been used in other regions by established ranchers and farmers to increase their land holdings. Serious ranching or farming homesteads were nearly impossible within the confines of Poudre Canyon (BLM Land Records, Denver).

At least two small homesteads were established along the North Fork of the Cache la Poudre River within the study area boundaries. These homesteads were not successful and were later absorbed by larger ranch holdings or became part of the National Forest. The Arthur J. Stephens homestead was a 160-acre parcel located along the North Fork about one mile above today's Seaman Reservoir. Stephens patented the parcel in 1891. There are only scattered ruins and dim foundations at the site. The homestead was later absorbed by a larger stock raising operation, and in 1959 became a part of the Seaman Reservoir Recreation Area through a land exchange (BLM Land Records, Denver).

Perhaps the best example of small-scale settlement is the William Poland homestead. Poland patented a 160-acre parcel south of Eagles Nest along the North Fork in 1910. This parcel had been previously filed upon and canceled or relinquished by



two other homesteaders dating back to 1882 (BLM Land Records, Denver).

Poland came to the Livermore region with his wife and family from Boston, Massachusetts, in the 1880s. Poland was engaged in cattle raising, but it also appears from family correspondence that the Polands did some trapping and possibly lumbering, along with working for area ranchers. William Poland's sons and daughter later moved elsewhere, but Poland himself still resided on the homestead as late as 1918. There are portions of structures, foundations, and other features remaining at the homestead site. One of the hewn log walls of a cabin or barn is still standing and retains several carved dates and inscriptions and penciled initials and drawings. Initials and names match those of Poland family members, and in association with dates, indicate that the Poland family may have resided on the site as early as 1889 (William Poland Biographical File, Local History Collection, Fort Collins Public Library; see site report and site forms for details of physical remnants, Chapter 7).

Another small homestead parcel is located within the confines of Poudre Canyon and was patented by Alvah Yauger in 1917. However, this site was developed into a resort with tourist cabins in the early 1920s, catering to the automobile trade when Colorado Highway 14 was opened through the Poudre Canyon. The Dixon family patented several adjacent small parcels within Poudre Canyon from the 1890s through 1920. It is not clear what subsistence strategies were used, if any. Walter and Mary Ann Dixon were early settlers in the area west of Fort Collins that is now Horsetooth Reservoir. William Dixon, who patented most of the land parcels in Poudre Canyon, was Walter's son. The elder Dixon engaged in farming (BLM Land Records, Denver; Wagner 1984:6-7).

The Great Depression: The End of the Homesteading Era: Farmers and ranchers used the Stock Growing Homestead Act of 1916 to increase their existing land holdings. With higher agricultural prices brought on by World War I, farmers used their profits to purchase more land, equipment, and seed. Unfortunately, agricultural prices began to plummet after 1920, and farmers actually preceded the rest of the nation into the Depression by using up their wartime profits on acquisition instead of paying off their mortgages (Olson 1944:296). The Great Depression, coupled with drought years in 1930, 1931, 1934, 1936, and 1939, destroyed the dry land farmer, and many homesteads were abandoned on the eastern plains of Colorado. Some settlers persevered, but no longer able to make a living from the land, became dependent on relief. Tax delinquency was commonplace, and county governments had difficulty maintaining roads and administering school systems.

The Resettlement Administration, created by executive order on April 30, 1936, began purchasing homesteads that were abandoned or operating at a loss on marginal lands. These lands

were to be returned to their original status as grazing lands. Some of the resident on purchased lands were resettled on better lands, upon which they might become self sufficient. These consisted of separate farms scattered throughout existing farm districts or settlements.

In 1934, the Taylor Grazing Act and two subsequent executive orders were passed that withdrew the remaining public domain from entry, thus virtually ending the homesteading era (except on certain reclamation projects). Its intent was "to stop injury to the public grazing lands by preventing overgrazing and soil deterioration, to provide for their orderly use, improvement, and development, and to stabilize the livestock industry dependent upon the public range" (U.S. Statutes at Large, 73rd Congress, Vol. 48:1269).

The federal government had finally realized that most of the western United States was not suited to small farming units. The character of the land and climate were better suited to livestock grazing, profitable if properly administered and regulated with a smaller number of large ranching units. This was especially true in the ranching country north of the Cache la Poudre River where land records reveal large-scale consolidation of lands in this era (Figure 6). Thus, the typical ranch today is composed of several earlier homesteads and ranches. Forage crops and some cash crops, such as sugar beets, are grown in and around the study area today, but these areas are limited to irrigable lands along year-round watercourses and adjacent to mountain watersheds.

### The National Forest

Creation of the National Forest System: The scientific community in America began to recognize the increasing pressure on the nation's timber reserves by industry in the decades following the Civil War. These impacts were felt more strongly in the settled eastern states. As early as 1864, George Perkins Marsh published a book entitled Man and Nature on the effects of timber cutting and its relationship to stream flow. However, the federal government was slow to recognize and regulate these depredations occurring in the public domain. Franklin P. Hough was one of the driving forces in the 1870s to involve the government in the establishment of forestry schools, urging state legislatures to promote better forest use, and Congress to consider "the subject of protection to the forests, and their cultivation, regulation, and encouragement." Hough was appointed the first forestry agent in the Department of Agriculture in 1876, with the task of studying the condition of the nation's forest (Robbins 1985:1-3).

Hough published the results of his study in a three-volume report between 1878 and 1882, recommending the leasing of federal timber to private operators, prohibiting illegal trespass on

public timberlands, and curing the waste of timber resources. The third volume also recommended setting aside some of the public timberlands, establishing forest experiment stations, and appointing European-trained foresters to manage public timberlands (Robbins 1985:3-4). Hough was elevated to the position of the chief of the Division of Forestry in 1881.

Private conservation groups, such as the American Forestry Association, were also formed with influential leaders in the scientific community who gradually educated the public concerning the conservation of resources. After it merged with the American Forestry Congress in the 1880s, its membership included lumbermen, prominent railroad and coal magnates, and influential politicians. The organization urged Congress to establish forest reserves in the American West (Robbins 1985:3-4).

A great deal of progress was made during the administration of Grover Cleveland, who appointed Bernard E. Fernow head of the forestry division in 1886. Fernow was a trained forester who urged the government to withdraw timberlands from further homestead entry and to create forest reserves in order to protect watersheds, and preserve land whose principal value was timber (Robbins 1985:6).

The Forest Reserve Act of 1891 was the culmination of 25 years of pressure on the federal government to set aside portions of the public timberlands. Under this measure, the President of the United States had the authority to withdraw forested land from public entry and to establish forest reservations. President Benjamin Harrison established the first six reserves in 1891 and 1892. In 1896, President Cleveland added 13 new reserves totaling 21 million acres and set off a storm of protests. Western lumber, mining, and ranching interests believed that the reserve system was an "Eastern conspiracy" to keep public lands from the common citizens. Procedures for management of the forest reserves did not follow until 1897, and then only when it was clear that the timber in these reserves would be utilized rather than hoarded (Robbins 1985:7-8).

Creation of the Roosevelt National Forest: As early as 1892, John G. Goy, a resident of Fort Collins, presented to the press a petition requesting the creation of a forest reserve in the nearby mountains. In 1893, the Colorado State Forestry Association sent this petition to President Harrison. The proposed reserve would include the Cache la Poudre, Thompson, and St. Vrain watersheds. In 1895, Col. Edgar T. Ensign, an officer of the General Land Office who was studying the Colorado forests, also urged the creation of the reserve. In 1889, a draft proclamation creating the forest reserve was suspended due to local opposition. Even though many local citizens and farmers favored the reserve in order to protect their water supplies, it was opposed by the lumber interests who feared tight logging regulations. H.J.M. Mattis, a sawmill owner, headed the opposition. A petition with 208 signatures was sent to

Washington, D.C., and included many prominent citizens of Fort Collins. The petition was forwarded and endorsed by Senator Henry M. Teller of Colorado (Morrill 1943:1). An extract from a letter written on August 28, 1902, by Mattis to President Theodore Roosevelt reflected the feeling of many others opposing the creation of a forest reserve:

If a private American citizen whose ancestors, like yours, have been in this country for centuries, can have the attention of its highest official, I would like to ask you to veto the Medicine Bow Forest Reserve proposition. My home is in the Reserve and I earn my bread with a little 10-horsepower sawmill, running the saw myself. If you wonder why I object to the Reserve, it is because I love liberty, hate red tape, and believe in progress. I like self government, but to be placed under a bureau and in a Reserve is too much like going back to the kind of government you impose upon your Indians. Many of my neighbors share my sentiments. The mountains have ever been the preserves of human liberties--do not blight ours (Morrill 1943:2).

This opposition also included the Board of County Commissioners of Larimer County and the Democratic County Convention of Larimer County. Those in favor of the forest reserve included the Colorado Agricultural College, Colorado University, the Colorado Normal College (Greeley), the State Board of Agriculture, and the Longmont Farmers' Institute. Portions of the proposed forest reserve were withdrawn from settlement on July 18, 1902, and other smaller areas were withdrawn on October 9, 1903, September 29, 1906, and February 6, 1907. These lands and others totaling 1,142,789 acres were added to the reserve. The Arapaho Forest was formed from portions of the Medicine Bow, Leadville, and Pike Forests. The Medicine Bow Reserve in Colorado lay south of the Colorado-Wyoming state line, east of the Continental Divide, and north of the 40th parallel of latitude. In 1907, all forest reserves became known as National Forests. Finally, on July 1, 1910, the name of the Medicine Bow National Forest within Colorado was changed to the Colorado National Forest (Hoyen 1924:12-13; Morrill 1943:3).

A large portion of the newly created forest was removed in 1915 to form the Rocky Mountain National Park. The eastern border of the Colorado National Forest was expanded from the vicinity of the line between Range 71W and 72W to its present location in 1917 as a result of a several reports made by forest personnel. The last change occurred on March 28, 1932, when President Hoover, by executive order, changed the name to the Roosevelt National Forest upon the recommendation of the Forest

Service to honor Theodore Roosevelt for his contributions to forestry and conservation (U.S. Forest Service, Rocky Mountain Region News 1976:2).

Forest Service Management: There were several early pioneer rangers and supervisors of note on the early Forest Reserve and National Forest. James Mullison was the ranger in charge of the Medicine Bow Reserve and supervised several guards. In November 1905, James Blackhall replaced him and established an office in Saratoga, Wyoming. In October 1906, the headquarters of the Colorado Division of the Medicine Bow was transferred to Fort Collins, and Shep M. Husted was named Supervisor in December 1906. In April 1907, the office was moved to Estes Park. On July 20, 1907, H.N. Wheeler became Supervisor of the Medicine Bow Forest Reserve. The Estes Park location proved impractical, and the office was moved back to Fort Collins in June 1908, and has remained there. In November 1911, Harold A.D. Marshall became the Supervisor of what was then known as the Colorado National Forest. In 1913, Wheeler returned to the supervisor's position. He remained in that role until replaced by William R. Kreutzer in February 1921 (Hoyen 1924:13-14; Kreutzer 1936:2).

The creation of the National Forest had a profound effect on the Cache la Poudre region. The lands within the forest were withdrawn from public entry, so that very little homesteading occurred in this region after the turn of the century. However, the eastern addition to the Forest, which includes the study area, remained open to settlement until 1917. Congressman Timberlake introduced a bill for the addition on January 27, 1916, but it met with so much opposition that its progress was slow. It did not receive presidential signature until September 8, 1917. In the meantime, there was a flurry of land filings in this area in anticipation of its closure to public entry. From January 27 to October 2, 1916, about 13,780 acres were filed upon under existing homestead acts (Hoyen 1924:19). Therefore, there are many private inholdings within this portion of the Roosevelt National Forest, some of which were subsequently removed by land exchanges.

Perhaps the two most important tasks of the Forest Service were to control and regulate timber cutting and livestock grazing. Timber cutting was regulated by the institution of organized timber sales using the bid process. Master plans were gradually drawn up for the forest that determined where commercial stands were located and when they would be cut. A proposed timber sale was surveyed and mapped, and a stumpage appraisal was made. The sale was then advertised at this value for bidding, and no bids were accepted below this value. The successful bidder signed a contract that accepted Forest Service terms and regulations concerning cutting and scaling, classes of timber to be manufactured, stumpage prices, and a plan of logging and brush disposal. The Forest Service established exact cutting boundaries and marked the trees to be cut. Finally, rangers often monitored the actual cutting procedures. This procedure

was a far cry from the unregulated, indiscriminate logging that had occurred on the forest since the first railroad ties were cut in 1868 (Ripley 1965:214-214.1; Thybony et al. 1985:64-66).

Early ranchers naturally believed that the vast grazing lands were virtually inexhaustible. This philosophy changed with the Blizzard of 1886-1887 that ruined many of the cattle barons. The range was fragile and could only support a certain number of livestock due to the low rainfall each year. Although the cattlemen had learned their lesson the hard way, the sheep operators that followed in their wake also tended to overstock the range. Sheep were probably a greater threat to the mountainous areas when the Forest Service was first establishing its authority over the National Forests. There were numerous examples of heavy overgrazing, especially on the Hayden National Forest in southern Wyoming (in the Sierra Madre Range in today's Medicine Bow National Forest) and what is now a portion of the Routt National Forest in northcentral Colorado. By 1916, such large sheep outfits as the Cosgriff Brothers had overgrazed this range to the point where "the country is destitute of all forage necessary to support animal life" (Bruce 1959:51). The same trend was evident in the Roosevelt National Forest. Box Prairie, the alpine zone, Jack's Gulch, and Bennett Creek had been severely overgrazed (Ripley 1965:215).

The Forest Service gradually began to regulate grazing by issuing grazing allotments for a certain number and kind of livestock, charging grazing fees, and designating specific grazing units within the Forest. Stock driveways were established for access to units with counting corrals at their beginning. Grazing was allowed only for a specified time period in the summer and fall months, then livestock was removed from the Forest. The Forest Service worked closely with the ranchers and their organizations to encourage cooperation in improving the range. It instituted such practices as placing salt at strategic locations across allotments to insure even distribution of livestock, and also required that only registered Hereford bulls be allowed to run except on individual fenced allotments to improve the herds (Larimer County Stockgrowers Association 1956:4-5; Ripley 1965:215, 215.1, 215.2; Rupp 1982:3-6; Thybony et al. 1985:114-119).

Early management of the Forest Reserve and the National Forest included the establishment of districts with district rangers for administrative purposes. Early ranger headquarters in the Medicine Bow Forest Reserve were constructed at Estes Park, Buckhorn, Manhattan, Grand Lake, East Fork of the Troublesome near Hot Sulphur Springs, and Walden in North Park. Some of these stations later became a part of the Arapaho National Forest. By 1921, there were seven administrative districts with seven district rangers in the Colorado National Forest. These were later reduced to four by 1936: Boulder, Estes Park, Poudre, and Laramie River. Today, the study area is located within the Estes-Poudre and Redfeather Districts (the

Cache la Poudre River acts as the boundary between these districts). The early rangers had to provide for communication by laying a system of telephone lines. They were also responsible for road and trail building and for the erection of lookout stations to aid fire prevention (Hoyen 1924:14-18; Ripley 1965).

Tourism and Recreation within the Roosevelt National Forest:

Tourism in the Cache la Poudre region predates the Forest Service. The natural beauty of the canyon, abundance of wildlife, and its relatively accessible location near major cities and transportation routes made it an ideal tourist area. The Rustic Hotel, built in 1881 by S.B. Stewart at Rustic, was perhaps the first tourist resort in the upper Poudre Canyon. Although built to serve as a hotel along his toll road to Teller City, it soon became popular with the summer tourist trade. In 1884, John Zimmerman, an early resident in the Cameron Pass area, moved his family down the Cache la Poudre River and established a homestead on the north side of the river. He erected a sawmill and in 1886 built two cabins on the south side of the river for summer visitors. In 1896, he completed the construction of the Keystone Hotel, a large 2-1/2 story brick building adjacent to the earlier tourist cabins. The hotel had accommodations for 100 people and did a thriving business for many years. The Colorado State Game and Fish Department bought the Zimmerman Ranch in 1946 and built a fish hatchery on the location. The Keystone Hotel was torn down (Fry n.d.:17-18, 36-37; Watrous 1911:269).

Other hotels were built along the major transportation routes and acted as stage stops, including the Forks Hotel built by R.O. Roberts in 1875 and the Elkhorn House built by a Mr. Palmer in 1876. The Elkhorn House was located on the Livermore-Log Cabin-Rustic Road on Elkhorn Creek. It soon became the social center for the surrounding ranching and mining community and the scene of regular dances. Palmer leased the property to Henry T. West of Greeley in 1879-1880, who promoted the hotel as a hunting and fishing resort. The Elkhorn House burned to the ground in 1886. However, Elkhorn still had a post office as late as 1911 (Watrous 1911:160, 194).

The Forest Service did not initially provide for tourism or recreation. As early Forest Supervisor H.N. Wheeler stated, "In general the Forest Service didn't cater to tourists, in fact many didn't want them in the forests and soon, when the Park Service was created the idea was fostered that the National Parks were our recreation areas" (Wheeler letter dated 10/12/1956). However, the Keystone and Rustic Hotels and other tourist facilities such as those at Redfeather Lakes introduced the public to the benefits of the Cache la Poudre region and the National Forest. When Colorado Highway 14 was pushed through the lower Poudre Canyon in the 'teens and was opened for travel to Rustic, Cameron Pass, and beyond in the 1920s, Poudre Canyon became easily accessible to the automobile tourist, and the

Forest Service could no longer ignore recreation as a major concern.

In an abrupt change of policy, the Forest Service began to encourage the building of summer residences in the 1920s. As a result, numerous cabins were built under Special Use Permits along the Cache la Poudre River on small tracts of land. These residence could only be used as summer homes and could not interfere with the general public's use and enjoyment of the National Forest. Forest Service policy began to change in the 1950s, when it stopped designating land tracts for summer homes, and in the 1960s it discontinued issuing summer home permits for unoccupied lots of existing tracts. Finally in the 1970s, the Forest Service began revoking and terminating existing permits (Rupp 1982:7). An example of this type of residence in the study area is the Greyrock Lodge, which consisted of two permitted cabins on adjoining tracts. The first cabin was built by W.E. Vaplon under a permit dated May 14, 1923. The second cabin was constructed by N.O. Warner under a permit issued on May 7, 1931. Both cabins are simple, one-story frame buildings, typical of this class of residence (Roosevelt National Forest, Supervisor's Office, Land Records).

The Forest Service also built a number of facilities, such as picnic and campgrounds, to enhance recreation for the tourist and forest visitor. Many of the facilities in Poudre Canyon were constructed with the aid of Civilian Conservation Corps labor in the 1930s. CCC Camp SP-15-C was located at the mouth of Poudre Canyon on the north side of Colorado Highway 14. The 180-man camp was established on August 2, 1935, and its first project was building the City of Fort Collins Mountain Park at the site of the Filtration Plant. This site included a well-constructed stone bridge for access to the north side of the river, picnic equipment, tables, benches, stone fireplaces, and rest rooms. The CCC also improved and built numerous hiking trails, and constructed the Forest Service picnic ground in Rist Canyon that is still in use today. CCC Camps were also established at Redfeather Lakes and at Buckeye. All of these camps were engaged in projects on the Roosevelt National Forest during the 1930s (Gleyre and Alleger 1936:85-88; Fort Collins Leader, Vacation Edition, p. 38, 1938).

In conclusion, the creation of the National Forest system in the Cache la Poudre region served to conserve and protect the mountain timberlands and the watershed by closely regulating timber cutting, livestock grazing, and all other uses within the forest boundaries. Starting in the late 'teens and early 1920s, the Forest Service also became concerned with tourism and recreational use of the forest by encouraging the building of summer cabins and building picnic and camp ground facilities. The Forest Service established and maintained hiking trails, roads, and bridges to provide access to all areas of the Forest. It also protected the timber for natural and man-made fires by developing a fire prevention and fire fighting system for the



forest. As we approach the twenty-first century and the adjacent prairie becomes more densely populated, the protection of this vast watershed may prove to be the Forest Service's most critical function.

## CHAPTER FOUR

### EXISTING DATA AND LITERATURE REVIEW

#### Introduction

Project area background research (Subtask 13b), or so-called Class I research, serves a variety of purposes. First, it provides information about previous cultural resource studies in the project vicinity and may indicate areas that do not require resurvey. Second, it identifies previously recorded cultural resources that may be affected by the present undertaking and suggests management actions that may be necessary (e.g., significance assessment of previously unevaluated sites, impact assessment of National Register sites, etc.). Third, it serves to familiarize researchers with the physical and locational variability ranges of cultural resources in the study area, and thus help to guide approaches to fieldwork. Finally, it may provide comprehensive archival data about historical occupation and use of the project area, including land records (e.g. General Land Office data) that may be used to identify and assess archaeologically documented sites.

#### Information Sources

As described in Chapter 1, background research was conducted for an 82-square-mile (52,480-acre) contiguous area (Figure 1) encompassing facilities associated with all three project stages. Class I prehistoric data were gathered from a number of institutions and individuals. The primary information source for known cultural resources within the study area is the comprehensive site files of the Office of Archaeology and Historic Preservation (OAHP), Colorado Historical Society, Denver. A computerized search of OAHP site records was requested on June 17, 1987, and a manual search of OAHP files was conducted on July 9, 1987. Site forms for all cultural resource locations indicated on the computerized printout were reviewed, pertinent reports on file with OAHP were examined, and site locations plotted on OAHP file maps were transferred to USGS 7.5' quadrangles for project use.

A number of institutions and individuals in Larimer County having relevant information and/or materials were contacted and interviewed. Material comprising the Roy Coffin collection, curated at the Fort Collins Pioneer Museum, was examined and Coffin's notes were reviewed with the assistance of Karen Eberhart, Curator of Collections, on July 24, 1987. USDA-Forest Service Archeologist John Slay was interviewed on June 26, 1987. Mr. Slay provided copies of Forest Service reports on small projects within the study area. Dr. Elizabeth A. Morris,

Department of Anthropology, Colorado State University (CSU), was interviewed on July 10, 1987. At that time, data in the CSU archaeological site records were compared with the OAHF computer printout to ensure that all known site locations within the study area had been identified. Robert J. Burgess, a professional archaeologist who had conducted extensive fieldwork along the northern perimeter of the Class I study area during the 1970s, was interviewed on June 20, 1987. Mr. Burgess provided maps showing locations of 16 prehistoric sites within the study area which had not yet been included in OAHF site files.

In addition to the activities described above, published and unpublished reports and masters theses relevant to the study area were reviewed. Principal among these sources are unpublished theses in anthropology by Burgess (1981), Kainer (1976), Thompson (1986), and Travis (1986), available from the CSU Morgan Library, and published and unpublished reports of small projects within and near the study area by Anderson (1966), Morris and Marcotte (1976), and Grant (1978).

Colorado OAHF site records also served as a basic information source for historical data in the project area. Other Colorado repositories also contain collections relevant to the study area. They include the Morgan Library, CSU, Fort Collins; the Norlin Library, Western History Division, University of Colorado, Boulder; the Denver Public Library, Conservation and the Western History Department, Denver; the Colorado State Historical Society Library, Denver; and the files of the Superintendent's Office, Arapaho-Roosevelt National Forest, Fort Collins and district offices. Published and unpublished literature sources relevant to local and regional history are numerous and include Eberhart (1974), Gleyre and Alleger (1936), Hall (1889-1895), Henderson (1926), Krakel (1954), Mehls (1984), Ormes (1975), Roberts (1938), and Watrous (1911). In addition to the various sources noted above, information was obtained in the course of two interview. Mr. Benjamin Alexander and Ms. Molly Norther, both of Administration and Conservation, Fort Collins Water Utilities, were contacted on December 7, 1987.

#### Previous Archaeological Investigations in and near the Study Area

Poudre Canyon and adjacent areas have been of interest to both professional and avocational archaeologists and historians since at least 1935 when E. B. Renaud of the University of Denver recorded several prehistoric sites within the study area. Subsequent to Renaud's work, Roy G. Coffin, an amateur archaeologist who is usually credited with the discovery of the Lindenmeier Folsom site, collected materials from numerous sites throughout Larimer County. Unfortunately, Coffin's locational records are extremely generalized and it is impossible to determine what portion, if any, of his extensive collections are

derived from sites within the study area.

Joe Ben Wheat of the University of Colorado, Boulder, examined portions of Poudre Canyon west of the present study area briefly in 1952, recording sites at Elkhorn Creek and near Cameron Pass. During the 1960s Wilfred Husted recorded numerous prehistoric sites near the headwaters of both the main channel of the Cache la Poudre River and the South Fork during an archaeological survey within portions of Rocky Mountain National Park.

In 1963 Forest Service personnel discovered human skeletal material eroding from an arroyo cut near Gordon Creek, a perennial tributary of the Cache la Poudre River. Salvage excavations were conducted at the site (5LR99), which is located immediately north of the present study area. An incomplete adult skeleton with associated faunal and lithic materials was recovered. Charcoal from the burial cavity yielded a radiocarbon date of  $9,700 \pm 250$  years B.P., placing the site within the Paleo-Indian stage (Anderson 1966:1-6). Excavations at the Lindenmeier site (Roberts 1935) and the Johnson site (Galloway and Agogino 1961), both located a short distance north of the study area, demonstrated possibly large Paleo-Indian populations within northern Colorado.

During the 1970s the Department of Anthropology, Colorado State University, became increasingly active in the area, conducting archaeological field schools and thesis projects, and executing archaeological contracts. Most of these efforts were concentrated in areas north and east of the study area. However, some work has been conducted within the area, and virtually all investigations are relevant to the present study. A brief field school session was operated in Hewlett Gulch, immediately west of the study area near Poudre Park, in 1973. Four prehistoric lithic scatters, one of which contained evidence of "Contact-period" occupation, were recorded. Several sites were recorded near Horsetooth Reservoir by CSU students during the early 1970s, apparently as independent research projects associated with chance discoveries. One such site (5LR112) is located within the southern extremity of the study area and at least one additional site (5LR247) is located immediately south of the study area in the same vicinity.

A reconnaissance of 1,200 acres within the northern portion of the study area, conducted by D. A. Breternitz for the Bureau of Land Management in 1973, located five prehistoric sites. Although a report of findings is available (Breternitz 1973), survey area locations and boundaries are not given.

Elizabeth A. Morris of CSU conducted mitigative excavations on three prehistoric sites in upper Poudre Canyon in association with the Joe Wright Reservoir project in 1975. In that same year Ronald Kainer, a CSU student, completed a masters thesis on excavations at the Spring Gulch site (5LR284), northeast of the

study area. Kainer's work contributed significantly to a clearer understanding of the local cultural chronology. Also in that year, Robert Burgess began intensive cultural ecological investigations at the Owl Canyon Rock Shelter (5LR104), located immediately north of the study area. Burgess also initiated an archaeological survey of the Owl Canyon Pinon Grove, in which the rock shelter is located, in conjunction with the Fort Collins Chapter of the Colorado Archaeological Society. Burgess' thesis provides insights into Late Prehistoric lifeways in the region (Burgess 1981). Although a final report of findings has not been completed on the Pinon Grove survey, available data are important since the survey results provide a basis for site density estimates within the northeastern portion of the study area.

A reconnaissance (Class II) survey of portions of lower Poudre Canyon was conducted by Marcus P. Grant in conjunction with the Cache la Poudre Wild and Scenic Study in 1978. Results of this effort indicated a moderately high site density within the canyon, with settlement concentrated at the confluences of major tributaries with the Cache la Poudre River.

A reconnaissance of historic sites conducted by Lawrence Steele in 1982 for the Colorado State Historic Preservation Office resulted in recording of several localities within the eastern and northern portions of the study area. Most of the sites recorded by Steele are standing structures located along U.S. Highway 287. A report of findings is not available, although some of Steele's site forms contain detailed historic narratives.

The archaeological staff of the Colorado Division of Highways conducted a linear survey for the Fort Collins Bypass and a small block survey for a borrow pit in 1984. The linear survey located one prehistoric site (5LR654) and one historic site (5LR962) within the eastern portion of the study area. One isolated find was recorded near the mouth of Poudre Canyon during the borrow pit survey.

#### Known Cultural Resources in the Study Area

Over 1,100 archaeological and historical sites have been recorded within Larimer County. Known sites within the study area which are currently listed in the Colorado OAHF site files comprise fewer than 4% of this sample. Over 25% of known sites within the study area were recorded during a Class II survey conducted within lower Poudre Canyon in 1978 (Grant 1978). Consequently, the distribution of known sites, as well as their overall frequency, reflect the uneven and generally limited amount of survey coverage that has occurred within the study area. The absence of known archaeological sites within large portions of the study area therefore should not be interpreted as necessarily indicating a true dearth of sites.

Thirty-nine previously recorded sites are on record within the Class I study area. Of this number, 25 are prehistoric and 14 are historic. One site, an historic 1870s ice house (5LR965), is enrolled on the National Register of Historic Places. Most of the remainder have not been evaluated per National Register criteria. Descriptive and management data about these sites are given in Table III, and locational data may be found in Appendix B, Table B-1.

At least three potentially significant sites located within or near the Class I study area are unrecorded at this time, in addition to Burgess's sites located within the Owl Canyon Pinon Grove, 16 of which are within the study area. Efforts were begun by the Fort Collins Chapter of the Colorado Archaeological Society to record and map several hundred stone circles near Laporte in 1979. However, the chapter disbanded prior to completion of the work and the site remains undocumented. The site's general location is east of the south edge of the proposed Glade Reservoir, within Section 7 of T8N, R69W.

A potentially significantly site located within the flood pool of the proposed mainstem reservoir (5LR548) is discussed by Grant (1978), but remains unrecorded due to denial of access during the 1987 intensive survey. This site consists of a general store and several cabin foundations dating to the turn of the 20th century and an associated rock shelter containing both prehistoric and historic components. The site is located along the south edge of Highway 14 a short distance east of Poudre Park. Woodland period ceramics in private collections from Poudre Park suggest that a large prehistoric site complex exists in the area.

Finally, the chance discovery in 1986 of a fluted projectile point in Cedar Gulch, located west of the study area, is the first documented evidence of Paleo-Indian material within Poudre Canyon proper (Grant n.d.). Limited subsurface testing conducted at the site by M. P. Grant and Forest Service archeologist Robert Nykamp indicated a strong potential for buried archaeological deposits. Although the number 5LR1082 was assigned to this location and a draft site form was completed, the site is not included in the Colorado OAHN site files at this time.

In addition to collection of information about previously recorded sites, Class I research entailed amassing information about archivally documented historic activities in the project area through examination of General Land Office (GLO) files and maps and USGS topographic maps. Although the existence of archival records does not necessarily signify that physical remains of a given activity still exist in the field, archival research does serve to document the types, intensity, and temporal span of certain historic activities in a study area. It may also serve as a rough predictor of what may be expected to occur on the ground during field survey, and aid in

TABLE III

## PREVIOUSLY RECORDED SITES WITHIN CLASS I STUDY AREA

Site #	Site Type/ Description	Age*	Rec. and Year	Literature Reference (if any)	NRHP** Status	Comments
5LR007	Stone Circles	Plains/ Woodland	Renaud 1947	U	U	
5LR022	Sheltered Camp/Burial	P	"	U	U	
5LR112	Open Camp	P	Hutch- ison 1974	U	U	
5LR275	Open Lithic Scatter	P	Hutch- ison 1973	U	U	
5LR300	Burial	P	Burgess 1975	Gear 1976	U	
5LR302	Open Lithic Scatter	P	Breter- nitz 1973	Breter- nitz 1973	U	

\* Age

P = Prehistoric  
H = Historic  
U = Unknown

\*\* National Register Status

NR = on Register  
DE = determined eligible by Keeper  
E = evaluated eligible by recorder

PE = evaluated as potentially eligible  
by recorder  
U = unevaluated or status indeterminate

TABLE III  
(Continued)

PREVIOUSLY RECORDED SITES WITHIN CLASS I STUDY AREA

Site #	Site Type/ Description	Age*	Rec. and Year	Literature Reference (if any)	NRHP** Status	Comments
5LR303	Open Lithic Scatter	P	Breter- nitz 1973	Breter- nitz 1973	U	
5LR304	Open Lithic Scatter	P	"	"	U	
5LR305	Open Lithic Scatter	P	"	"	U	
5LR369	Stone Circles	P	Renaud 1935	U	U	
5LR370	Open Camp	P	"	U	U	Exact location unknown
5LR371	Open Lithic Scatter	P	"	U	U	Exact location unknown
5LR372	Open Camp/ Stone Circles	P	"	U	U	Exact location unknown

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P = Prehistoric  
H = Historic  
U = Unknown

\*\* National Register Status  
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DE = determined eligible by Keeper  
E = evaluated eligible by recorder

PE = evaluated as potentially eligible  
by recorder  
U = unevaluated or status indeterminate



TABLE III  
(Continued)

PREVIOUSLY RECORDED SITES WITHIN CLASS I STUDY AREA

Site #	Site Type/ Description	Age*	Rec. and Year	Literature Reference (if any)	NRHP** Status	Comments
5LR373	Stone Circles	P	Renaud 1935	U	U	Exact location unknown
5LR374	Open Camp	P	"	U	U	Examined in 1978, location verified
5LR377	Stone Circles	P	"	U	U	Examined in 1978, location verified
5LR378	Sheltered Camp	P	Renaud 1949	U	U	Probably same as 5LR536
5LR536	Open Lithic Scatter	P	"	"	PE	Probably same as 5LR378
5LR538	Rock Shelter	P	Grant 1978	Grant 1978	PE	
5LR539	Rock Shelter	P	"	"	PE	
5LR540	Open Lithic Scatter	P	"	"	PE	

\* Age

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PE = evaluated as potentially eligible  
by recorder

U = unevaluated or status indeterminate

TABLE III  
(Continued)

PREVIOUSLY RECORDED SITES WITHIN CLASS I STUDY AREA

Site #	Site Type/ Description	Age*	Rec. and Year	Literature Reference (if any)	NRHP** Status	Comments
5LR541	Open Lithic Scatter	P	Grant 1978	Grant 1978	PE	
5LR542	Rock Shelter	P	"	"	PE	
5LR548	Buried Hearth	P	"	"	PE	Site is within mainstem floodpool
5LR654	Open Lithic Scatter	P	Wallace 1984	Wallace 1984	U	
5LR748	Stage Station	H	Steele 1982	U	U	Park Station No. 2, original stage barn moved to Rappler Ranch; no standing structures
5LR752	Freighting Station	H	"	U	PE	Bonner Stage Station; stage stop on Overland Trail; wagon ruts, no standing structures
5LR759	Reservoir	H	"	U	U	Horsetooth Reservoir

\* Age

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H = Historic  
U = Unknown

\*\* National Register Status

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PE = evaluated as potentially eligible  
by recorder  
U = unevaluated or status indeterminate

TABLE III  
(Continued)

PREVIOUSLY RECORDED SITES WITHIN CLASS I STUDY AREA

Site #	Site Type/ Description	Age*	Rec. and Year	Literature Reference (if any)	NRHP** Status	Comments
5LR762	Stage Station	H	Steele 1982	U	U	Park Station No. 1, stage stop on Overland Trail; no standing structures
5LR764	Freighting Station	H	"	U	U	No structural remains
5LR765	Inscriptions	H	"	U	U	Inscription Rock near Laporte; exact location unknown
5LR772	Coombs Ranch	H	"	U	U	House, barn, quarries, ca. 1900s, site is within Glade Reservoir floodpool
5LR792	School House	H	"	U	U	Pleasant Valley School, ca. 1870, remodeled into house; graves, dairy
5LR794	Residence	H	"	U	U	Jacob Flowers residence, ca. 1872; near Laporte

\* Age

P = Prehistoric  
H = Historic  
U = Unknown

\*\* National Register Status

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PE = evaluated as potentially eligible  
by recorder  
U = unevaluated or status indeterminate

TABLE III  
(Continued)

PREVIOUSLY RECORDED SITES WITHIN CLASS I STUDY AREA

Site #	Site Type/ Description	Age*	Rec. and Year	Literature Reference (if any)	NRHP** Status	Comments
5LR796	Homestead	H	Steele 1983	U	U	Bosworth Homestead, ca. 1870
5LR962	Irrigation Ditch	H	"	U	NE	Dry Creek Ditch, constructed 1861
5LR963	Residence, Sawmill	H	"	U	U	1860 sawmill structure, site includes original family barn and silo; house destroyed 1930
5LR964	Ice House	H	"	U	NR	Ca. 1870s
5LR965	Structures (Destroyed)	H	"	U	NE	Willow Brook Fishing Cabins, gas station and store, ca. 1926

\* Age

P = Prehistoric  
H = Historic  
U = Unknown

\*\* National Register Status

NR = on Register  
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identification of specific localities that are recorded archaeologically.

Because of the great volume of archival data that exists for the Class I study area overall, archival data tabulation was conducted only for the major projected impact areas associated with the three project stages: Stage 1 - mainstem reservoir; Stage 2 - Glade Reservoir; and Stage 3 - Cache la Poudre Forebay Reservoir. This information is presented in Appendix A, and is tabulated by project stage.

## CHAPTER FIVE

### RESEARCH CONTEXTS

#### Introduction

Scheduling demands coupled with uncertainties as to the nature and quantity of data that might be recovered during the project precluded the use of a formalized research design. The project research goals are therefore generalized, and oriented toward gathering data applicable to the principal research problems of northeastern Colorado prehistory and history. These problems and the types of data required to address them have been outlined by Mehls (1984), Eighmy (1984), and Guthrie *et al.* (1984) pursuant to the Resource Protection Planning Process (RP-3) implemented by the Colorado Office of Archaeology and Historic Preservation (OAHF).

In order to address any of the RP-3 research topics it is necessary to provide descriptive and interpretive data for all sites and to minimize subjectivity in both survey methods and data interpretation. Since intensive archaeological investigations have not been conducted previously within the study area, all recorded information is potentially important to the developing data base. The present findings will be broadened by future researchers, and interpretations may be amplified or revised in light of new data. In this context, research topics in northeastern Colorado prehistory and history and the manner in which they are addressed will continually be modified and refined.

#### Prehistoric Research Themes

Since the study area is located within the low-elevation foothills of the Front Range, immediately west of the Plains-Foothills transition zone, both plains and mountains research contexts are applicable. However, while research themes formulated for the plains context apply to sites within the study area generally, those formulated for the mountains context apply more narrowly, to specific sites or site components.

Eighmy (1984) has formulated a series of research questions for each period of documented prehistoric occupation in northeastern Colorado. While Paleo-Indian and Archaic components are evident on site 5LR1098, all stratigraphically intact and chronometrically dated site components within the study area are of Late Prehistoric temporal affiliation. (Radiocarbon age estimates for tested sites range from approximately 1650 to 570 radiocarbon years before present). Consequently, post-Archaic

(Ceramic stage) research questions are most pertinent to the current study.

Eighmy (1984:103) summarizes seven specific Ceramic stage research topics for which further data are needed. These are: (1) establishment of a finer chronology; (2) a better understanding of cultural/temporal/projectile point taxonomy, demographic trends and variations, cultural boundaries, settlement/subsistence patterns, and outside influences; (3) investigations which address the above topics in a stratigraphic context; (4) excavations which address the above topics in the context of a single component; (5) environmental reconstructions; (6) taxonomic studies (impinging upon No. 2, above); and (7) investigation of site formation and transformation processes.

Guthrie et al. (1984) similarly addresses research themes for each period of known prehistoric occupation of Colorado's mountain regions. In their chronological framework the post-Archaic period of prehistory is referred to as the Formative stage. This stage may be assumed to coincide generally with Eighmy's Ceramic stage. Guthrie et al. (1984:45) outline two interrelated research domains for the Formative stage. The first pertains to Formative (i.e., horticultural) groups and centers on the issue of actual occupation of the Colorado mountain regions versus artifact representation resulting from trade or other factors. The second research domain addresses causal variables relating to seasonality and the apparent continuation of Archaic lifeways within mountain environments.

Results of the present study provide limited information relevant to the research topics of Eighmy (1984) and Guthrie et al. (1984), due mainly to a lack of chronological control over most sites. The RP-3 contexts do, however, provide the necessary framework for the formulation of intensive data recovery plans for certain sites, which could be expected to yield further information on some or all the above topics. In addition, the RP-3 contexts furnish a partial basis for significance assessment of specific sites through identifying data needs.

#### Historic Research Themes

While prehistoric research themes applicable to the study area derive from both the plains and mountain contexts, viable historic research themes pertinent to the project are drawn exclusively from the Colorado mountains context because of the sedentary and specialized nature of historic as opposed to prehistoric land use. Mehls (1984) has delineated several historic research domains for the Colorado mountains. Four of Mehls' themes apply to historic sites in the general study area. These are: (1) adaptations of farming and ranching techniques to the high county environment; (2) the development of transportation networks in the mountains; (3) the introduction of

automobiles and development of auto tourism; and (4) precious metal mining. Themes relating to the Great Depression and to New Deal era public works (Mehls 1984:III:116-118) may also apply to certain sites recorded in the study area. Historic sites recorded as a result of the current undertaking have yielded data relevant to the first two themes and, to a much lesser degree, the latter two (Chapter 7).

### Expected Results

File search data indicated that prior survey coverage of the Class III study area was minimal. However, distributions of known sites in the general project vicinity suggested that several patterns might emerge during the intensive inventory. Prehistoric sites were expected to occur in relatively flat terrain in close proximity to the Cache la Poudre River and its main tributaries, and particularly at confluence points along the main river. The Late Prehistoric stage was expected to be most commonly represented. It was anticipated that most sites would be temporarily inhabited camps, but that favorable localities would display evidence of repeated occupations. Likewise, historic sites were expected to occur close to the Cache la Poudre River and its tributaries. Of the various themes represented in the local historical record, only homesteading, mining, and transportation were expected to be prevalent in terms of archaeological manifestation.



## CHAPTER SIX

### FIELD METHODS

#### Field Inventory

The project area was subjected to a pedestrian survey of variable intensity. One hundred percent surface coverage was given all areas exhibiting slopes of 10 degrees (18% grade) or less. Areas characterized by slopes greater than 10 degrees were subjected to reconnaissance examination of at least 10% of the land surface. Generally, the reconnaissance effort was focused on canyon slopes while canyon floors and rims, ridge crests, summits, and hanging terraces received total survey coverage.

During the first week of fieldwork the survey crew consisted of three archaeologists working as a single team. Thereafter the crew consisted of four archaeologists who worked as a single team when examining large areas requiring complete coverage and when recording extensive sites. To expedite reconnaissance of steep areas, the crew divided into two two-person teams operating independently from one another.

When employing intensive survey techniques (i.e., in areas of 10-degree slopes or steeper), spacing between surveyors did not exceed 25 meters. When examining steeper slopes, spacing between surveyors was dictated to a large extent by terrain. Surveyors attempted to follow any small terrace systems, grade changes, and vegetation zone boundaries that occurred on the canyon side slopes. All vertical rock faces and potential rock shelter locations were examined.

#### Site Recording

Prehistoric archaeological sites are defined minimally as occurrences of three or more items of lithic debitage, two or more tools, one tool plus one item of debitage, or any feature (hearth, stone circles, etc.) whether associated with artifacts or not. To be considered part of a single site, an artifact had to be separated from the next nearest artifact by no more than 50 meters. Prehistoric isolated finds (IFs) are defined as occurrences of fewer than three pieces of debitage, or isolated tools or tool fragments, occurring more than 50 meters from other prehistoric materials.

Historic archaeological sites are defined as occurrences of any historic structure or feature other than isolated cairns, small retaining walls, or prospect pits. Historic IFs are defined as any occurrences of artifacts such as bottle fragments, horseshoes, or tin cans, situated at least 50 meters from other

historic materials, or occurrences of small retaining walls, prospect pits or cairns with no associated artifacts. To merit recording as a site or IF, an occurrence of historic materials had to be at least 40 years old.

When archaeological materials were located, all visible artifacts and features were marked with pin flags and the general areas was examined systematically to accurately define site boundaries. A site datum was established and marked with an 18-inch length of one-inch-diameter PVC pipe. Each site was assigned a unique field number with a "CA" prefix, and this number was marked on the datum stake in permanent ink. A site sketch map was then drawn using a Brunton pocket transit with distances determined by pacing. The map illustrated site datum and boundaries, formal artifacts and features, concentrations of debitage, and natural and man-made features of the immediate site area (drainages, roads, rock outcrops, etc.).

Two sites, 5LR1098 and 5LR1112, were mapped in greater detail owing to topographic and cultural complexities. On site 5LR1098 over 90 small features were found distributed across the approximately 3.40-acre site area. Precise planimetric mapping was essential to accurate site documentation and to ensure horizontal control during subsurface testing. To achieve this, two instrument stations were established 50 m apart on a 90 degree 00-minute azimuth, and bearing angles were recorded from both stations to the centers of each feature using a transit equipped with a 5-minute vernier. Horizontal distances were then derived trigonometrically.

On both sites named, contour lines were interpolated by direct proportional slope divisions generated by an electronic calculator program. Elevations were determined by three-wire leveling using a transit and stadia rod.

At least one black-and-white overview photograph was taken of each recorded site, and features were photographed individually. All facades of intact structures were photographed.

Each site location was plotted on the appropriate USGS 7.5' quadrangle. Colorado OAHF Archaeological Component Forms and Inventory Records were completed for each site, and Historic/Architectural Component Forms were completed for each historic structure. Colorado OAHF Isolated Find Records were completed for each IF locality. Isolated Finds were assigned temporary field numbers prefixed by IF and beginning with IF-1. Surface collection was limited to temporally diagnostic artifacts such as projectile points with intact haft elements.

Shovel probing was conducted on several sites as a facet of the recording process. On sites for which a valid determination of significance could not be made on the basis of surface evidence alone, shovel probing was used to determine whether a

potential for buried deposits existed, and therefore formal evaluative test excavations would be necessary. Shovel probing was also conducted within five rock shelters which contained no visible evidence of occupation. Two of these shelters were found to contain buried archaeological materials.

Shovel probes were placed at intervals ranging from 1 m to 20 m depending on the areal extent of a given site. All shovel probe locations were plotted on site maps. The probes were generally 30 cm in diameter and were excavated to a maximum depth of 75 cm. All loose fill was passed through quarter-inch hardware mesh; artifacts were collected and bagged separately by shovel probe unit. Shovel probe placement was subjective, with locations chosen to maximize data recovery while minimizing time expenditures. All excavations were backfilled.

### Subsurface Testing

Formal subsurface test excavations were conducted on five sites (5LR1098, 5LR1102, 5LR1110, 5LR1112, and 5LR1099) in order to formulate valid determinations of significance. Subsurface testing was also conducted at two nonsite locations. One of these localities is a rock shelter high on a canyon slope in dense timber; the other is a charcoal concentration exposed in a cut bank at an undeveloped campground.

Most excavation units varied in size from 1 m X 1 m to 2 m X 2 m, and included a variety of rectangular configurations. Test excavations of stone circles utilized 50 cm X 3 m trenches oriented at right angles.

Excavation unit locations were mapped from site datums using a transit and tape. The elevation of each unit corner below datum was determined by three-wire leveling. Vertical control was maintained by use of a line level attached to the southeast corner stake of each unit. All excavation units were aligned with true north.

Excavation proceeded in arbitrary 10 cm levels. All loose fill was passed through quarter-inch hardware mesh. Debitage and nondiagnostic bone fragments were bagged by level; diagnostic items were bagged and field-catalogued separately. An excavation level record form was completed for each arbitrary level.

One-half on any basin type feature or cobble concentration encountered during testing was excavated by arbitrary 10 cm levels and the remaining one-half was left intact. Fill from feature basins was water-screened through 1/32-inch mesh and recovered material was bagged and catalogued separately from general level artifacts. If sufficient amounts of charcoal were present, samples were recovered for radiocarbon dating.

Stratigraphic profiles were drawn of at least one wall of each completed excavation unit. Walls were also photographed if stratigraphy was sufficiently defined. All excavation units were backfilled following excavation.

## CHAPTER SEVEN

### SURVEY RESULTS

#### Summary of Results

A total of 6,390 acres was surveyed for archaeological and historical remains. Of this figure, 3,188 acres (49.9%) were subjected to intensive surface examination, and the balance (3,202 acres, or 50.1%) were subjected to surface reconnaissance (see Chapter 6). Twenty historic sites and nine prehistoric archaeological sites were recorded. One previously recorded archaeological site (5LR548) is located within the survey area and another (5LR512) is located immediately west of the survey area. Ten historic isolated finds and eight prehistoric isolated find were also recorded.

Non-habitation historic sites include remnants of bridges, road grades, canals and mines. Historic habitation sites include dugouts, cellar holes, masonry foundations, and standing structures. These sites are associated with a variety of themes including homesteading, ranching and farming, early tourism, and Depression-era public works projects.

Four (40%) of the prehistoric sites, including 5LR548, are open camps consisting of hearth areas or firepits and associated artifact scatters located in open terrain. One prehistoric open camp (10%) also contains stone circles. Three (30%) of the prehistoric sites are open lithic scatters with one associated stone circle, and two (20%) are sheltered camps located within small rock shelters. Both sheltered camps consist solely of buried archaeological components. One site (10%) consists entirely of lithic debitage and ground stone fragments located in open terrain.

Most historic isolated finds are small prospect pits lacking associated artifacts. Also recorded as historic isolated finds were small field stone retaining walls not associated with artifacts or other features, an isolated cairn, and a horseshoe. Three of the prehistoric isolated finds are biface fragments and two are single pieces of lithic debitage. One utilized flake, one ground stone fragment, and one projectile point were also recorded as prehistoric isolated finds.

Historic and prehistoric archaeological sites are summarized individually in the following text. Table IV gives condensed data about both sites and isolates. Site-specific locational data are presented in tabular form in Appendix B, Table B-2.

Six sites are recommended for inclusion in the National Register of Historic Places (NRHP). Four of these sites are prehistoric (5LR1098, 5LR1102, 5LR1110, and 5LR1112) and two are historic (5LR1113 and 5LR1123). National Register significance evaluations and management recommendations are presented in Chapters 10 and 11.

### Site Descriptions

#### 5LR1095 (Temporary Number CA-48)

Site Type: Canal remnant

Period: Twentieth century

Dimensions: Approximately 3.75 km X 1 m

Elevation: 5,280 - 5,360 feet (1,609 - 1,634 m)

Physical Setting: Site traverses vertical rock faces, hill slopes, and upland terraces near the base of Poudre Canyon. Vegetation on hill slopes is primarily scattered ponderosa pine with an understory of short grasses or mountain mahogany. Vegetation on upland terraces is primarily open grassland dominated by wheatgrass.

Description: Remnants of an irrigation canal traversing the northern slope of Poudre Canyon (Figure 7). The canal extends westward approximately 3/4 mile (1.25 km) from the survey boundary. Those segments of the canal which traverse relatively level terrain are indicated by low, rounded berms and a shallow central ditch. Where traversing steep slopes the canal consists of a dry-laid dressed stone retaining wall along the canal's outer edge and remnants of a one-meter-wide grade. Portions of this retaining wall are apparently intact, approximately 0.75 m (2.46 feet) wide and up to one meter (3 feet) in height. In other locations the wall is indicated only by the first course of masonry. Those segments of the canal which traverse vertical rock faces are indicated by an artificial cut approximately one meter wide in the rock face and following a consistent grade.

This abandoned canal segment appears to have once been a part of the Poudre Valley Canal. This canal probably extended farther up the north side of the Cache la Poudre River than at present. It is believed that the construction of Colorado Highway 14 resulted in a realignment of the canal. It now taps the Cache la Poudre River in the SW/SW/SW of Section 10, T8N-R70W. The Poudre Valley Canal, or Poudre Valley Canal and Reservoir Canal, appears on all early maps of Larimer County including the Livermore 1907 USGS quadrangle and Gelder's Map of Larimer County dated 1916. The canal parallels the river and Colorado Highway 14 through Ted's Place, then follows the east

side of U.S. Highway 287 southward for about one mile. It then travels in a northeasterly direction following the natural contours of the land to Douglas Reservoir. It passes along the east side of the reservoir and appears to feed the system of reservoirs in this area including North Poudre Reservoir Nos. 2, 5, and 6. This canal, in association with the Larimer County Canal (1881) and North Poudre Canal (earlier known as the North Fork Ditch and constructed to Boxelder Creek by 1884) and an extensive system of reservoirs, waters thousands of acres of prairie lands. Homesteaders quickly took up adjacent lands and engaged in farming starting in the mid-1880s. In 1901, the North Fork Ditch, reservoirs, and rights-of-way were purchased by the North Poudre Irrigation Company, a combination of farmers and businessmen, who subsequently improved the entire system allowing a new influx of settlers on previously waterless lands. Thus, the entire Boxelder Valley was settled and farmed. The exact construction date of the Poudre Valley Canal is not known but appears to have been in the 1880s from maps and associated canal and reservoir construction (Watrous 1911:72, 133, 208-210). The canal is still in use today.

5LR1096 (CA-49)

Site Type: Historic ditch

Period: Unknown historic

Dimensions: 623 m X 5 m

Elevation: 5,320 feet (1,621 m)

Physical Setting: Rocky terrace on the west bank of the Cache la Poudre River. The terrace supports a shrub-grassland dominated by mountain mahogany, rabbitbrush, wheatgrass, ricegrass, and little blue stem.

Description: This site is a 123 m long segment of an irrigation or diversion ditch. The feature traverses a terrace along the west bank of the Cache la Poudre River. The ditch consists of two low earthen berms approximately 5 meters (16.40 feet) wide at the crests, forming a ditch approximately 1.5 m (4.90 m) deep. No other features and no artifacts are associated with the ditch.

The site is located on land patented by the State of Colorado on 2/1/1886 for an Agricultural College (BLM Land Records, Denver). Therefore, it was never homesteaded and is not associated with this activity. This ditch is not depicted on either the 1877 General Land Office plat or the 1937-1938 resurvey of Township 8 North-Range 70 West or any subsequent maps of Larimer County, including the 1907 USGS Livermore, Colorado quadrangle; Gelder's Map of Larimer County, Colorado, 1916; Larimer County Highway and Transportation Maps issued by the

Colorado State Highway Department in 1936 and 1940; or the Larimer County Atlas, 1940. Therefore, it is impossible to trace its original route and assign a specific date range to the site.

SLR1097 (CA-50)

Site Type: Historic (explosives storage cellar)

Period: Twentieth century

Dimensions: 30 m X 70 m

Elevation: 5,400 feet (1,646 m)

Physical Setting: Hill slope at the mouth of an unnamed gulch approximately 400 m west of the Cache la Poudre River. The site area is enclosed by steep slopes to the west, north, and south. Vegetation on and surrounding the site is mountain mahogany with an understory of wheatgrass and prickly pear.

Description: This site consists of a collapsed dugout, purportedly used as an explosives storage shed during the construction of State Highway 14 (Figure 8). The structure is 5 m X 8.5 m (16.40 feet X 27.90 feet) in planview and is 2.9 m (9.50 feet) deep. The structure is excavated into an east-facing hill slope at the mouth of a small unnamed gulch approximately 400 m west of the Cache la Poudre River.

The dugout walls are retained by 4" X 4" and 6" X 6" milled lumber uprights planked with 2" X 8" boards. The structure exhibits a sod roof over 4" X 4" joists and planking. The roof has collapsed recently. Round wire nails are used throughout the structure. A remnant of a road grade leads from the entrance of the dugout across the unnamed gulch toward the present location of Highway 14. No associated artifacts were noted.

The site is located on a parcel of land patented by Fred Stearley on 3/9/1916 (Patent No. 518115). The parcel consisted of the NE/SW, SE/SW of Section 4, and the NE/NW, SE/SW of Section 9. However, according to local informants, the site is related to the building of Colorado Highway 14 and was used for explosives storage. A previous road through the canyon mouth ended in Section 32, T8N-R70W, just past the water filtration plant. The new road was started in 1912 using convict labor and involved building a tunnel through solid rock (the Baldwin Tunnel). Due to the difficult terrain, the road was not pushed through to Rustic until 1920 (Parsons 1968:1-3). The road finally reached Cameron Pass in August 1926. Asphalt paving was completed in sections over an extended period of time through the 1970s (Parsons 1968:1-3; The Poudre River 1976:75-77).



Figures 7 and 8

(1 page)

SLR1098 (CA-51)

Site Type: Open camp

Period: Paleo-Indian through Late Prehistoric

Dimensions: 110 m X 125 m

Elevation: 5,480 - 5,510 feet (1,670 - 1,679 m)

Physical Setting: Site occupies a broad north-facing terrace which is inundated by Seaman Reservoir approximately six months of the year. Prior to the construction of Seaman Reservoir, the terrace would have been on or immediately above the floodplain of the North Fork Cache la Poudre River. The site is denuded of vegetation. Adjacent areas support scattered ponderosa pine, mountain mahogany, rabbitbrush, wheatgrass, and blue grama grass. It is likely that the site area supported similar vegetation prior to inundation by Seaman Reservoir.

Description: This site consists of a minimum of 93 prehistoric hearth locations and three stone circles with associated lithic, ground stone, and ceramic scatters. The site occupies approximately 3.40 acres (Figure 9, map pocket; Figure 10).

Hearth areas are represented by clusters of heat-fractured cobbles and slabs (Figures 11, 12, 13). These concentrations are generally circular in outline and range from 0.60 to 2.50 m in diameter. The stone circles consist of spaced circular arrangements of 15 to 54 slabs and boulders and range from 3.2 m to 3.75 m in diameter. Hearth areas occur densely throughout the site, while stone circles are confined to the site's western extremity.

At the time of recording, artifactual material was sparse. Two projectile point bases were collected and several ground stone fragments were noted. Lithic debitage was very scarce. However, the site has been collected systematically since 1976 by Grant Jones, a water chemist employed by the City of Fort Collins Filtration Plant. Jones' collection contains no fewer than six lanceolate parallel flaked projectile point bases representing the Plano Tradition and an equal number of large side-notched specimens representing the Early Archaic Period. Small corner-notched and side-notched Late Prehistoric projectile points are also included in the collection as are several hundred cord-impressed and cord-obiterated pottery sherds (Figures 14, 15, 16). Jones' collection from this site also contains numerous bifacially flaked and unifacially flaked lithic artifacts. Jones related that the density of surface material on site has been decreasing steadily since 1976.

Results of systematic test excavations conducted between September 23-27, 1987 indicate that most hearths are surficial. Shallow basins, up to 10 cm in depth, are associated with two

Figures 10-16

(5 pages)

features (12 and 34), and these yielded radiocarbon age estimates of  $570 \pm 60$  B.P. (Beta-23490) and  $1080 \pm 80$  B.P. (Beta-23491), respectively. Limited excavations within one of the stone circles (Feature 26) recovered a comparatively high density of lithic debitage, as well as a Late Prehistoric or Late Archaic projectile point base and ground stone fragments, all from a consistent elevation. These results suggest the presence of in situ cultural deposits within the stone circles (see following chapter).

5LR1099 (CA-52)

Site Type: Open camp

Period: Historic/unknown prehistoric

Dimensions: 175 m X 80 m

Elevation: 5,480 - 5,500 feet (1,670 - 1,676 m)

Physical Setting: The site occupies level east-facing terraces and a portion of an adjacent hill slope. Approximately one-half the site area is inundated by Seaman Reservoir six months of the year. Prior to construction of Seaman Reservoir, the terraces and hill slope would have been situated immediately above the floodplain of the North Fork Cache la Poudre River. Vegetation on site consists of wheatgrass, downy brome, rabbitbrush, and prickly pear. Surrounding vegetation include ponderosa pine, mountain mahogany, gooseberry and skunkbrush. It is likely the portions of the site which are intermittently inundated by Seaman Reservoir originally supported similar vegetation.

Description: The site consists of four widely scattered prehistoric hearth areas, a light scatter of historic debris, and a stone enclosure (Figure 17). The hearth areas are amorphous to circular scatters of heat-fractured cobbles and range from approximately 0.60 m to 2.50 m in diameter. The stone enclosure (Feature 2) consists of approximately 90 angular boulders and is approximately 4 meters in diameter. A scatter of wood stove parts and a heavily oxidized shovel blade are located adjacent to the stone enclosure. Test excavation within Feature 2 recovered two cut nails among subsurface boulders comprising part of the enclosure's northern wall. These were the only artifacts recovered and their presence suggests the feature, which differs markedly from prehistoric stone circles typical of the region, is of historic affiliation, probably predating ca. 1890 (see following chapter).

The site area has been collected by Grant Jones, a water chemist employed by the City of Fort Collins Water Filtration Plant. Jones reports that the site's prehistoric component once

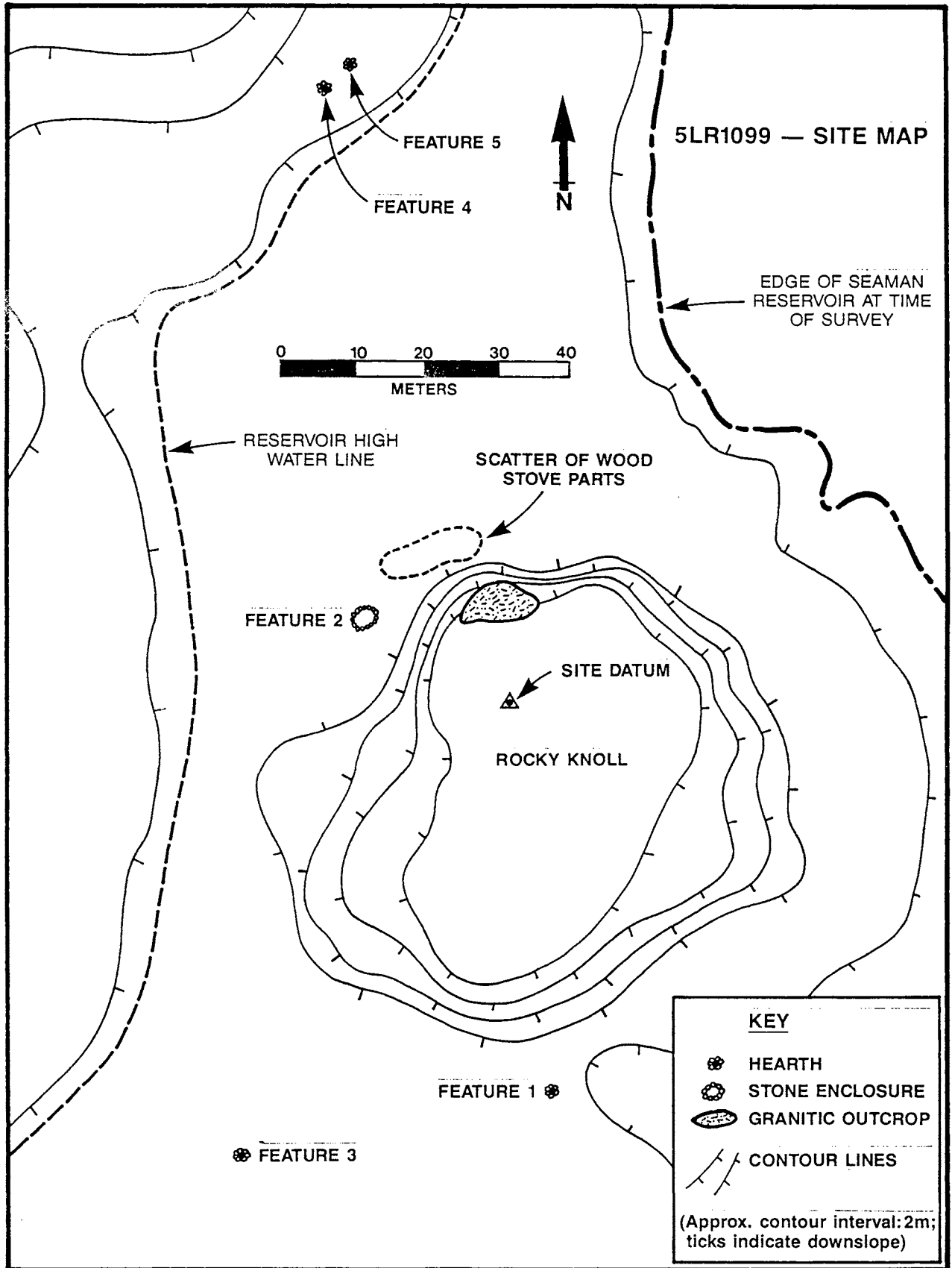


Figure 17. 5LR1099, site map.

included several pieces of ground stone and a light lithic scatter which he collected.

5LR1100 (CA-53)

Site Type: Open camp

Period: Unknown prehistoric

Dimensions: 43 m X 22 m

Elevation: 5,480 feet (1,670 m)

Physical Setting: Site occupies a narrow west-facing bench at the base of a steep hill slope. The site area is inundated by Seaman Reservoir approximately six months of the year. Prior to the construction of Seaman Reservoir, the bench would have been situated directly above the floodplain of the North Fork Cache la Poudre River. Vegetation surrounding the site include mountain mahogany, ponderosa pine, rabbitbrush, wheatgrass, downy brome, and prickly pear. It is likely the site area supported similar vegetation prior to intermittent inundation by Seaman Reservoir.

Description: This site consists of three disturbed hearth areas and three pieces of ground stone located on a south-facing bench a few meters above the North Fork Cache la Poudre River. Features 1 and 2 are roughly circular concentrations of heat-fractured cobbles. The mean diameter of the two features is 0.86 m. Feature 3 consists of an organic stain, approximately 1.60 m in diameter and a single fire-cracked cobble. The feature has been disturbed heavily by livestock and erosion. All pieces of ground stone observed on the site are incomplete unifacially ground sandstone slabs.

5LR1101 (CA-54)

Site Type: Historic structures

Period: Late nineteenth to early twentieth centuries

Dimensions: 90 m X 70 m

Elevation: 5,320 feet (1,622 m)

Physical Setting: Level terrace along the north bank of the Cache la Poudre River. The site area has been subjected to several years of intensive grazing and cultivation in some localities. Other portions of the site area are landscaped. Consequently, the current vegetation on site is not representative of the natural setting. Surrounding vegetation

is open grassland dominated by blue grama grass and wheatgrass, with mountain mahogany and scattered ponderosa pine on the overlying hill slopes.

Description: Two structures comprised this site. Structure 1 is the remnant of a log cabin which measures 5.10 m X 6.60 m (16.70 X 21.65 feet). The cabin is constructed of V-notched logs, which are round on the exterior faces and adze-hewn on the interior faces. Four walls are standing, but in poor condition. A door jam is located in the south wall. The roof is deteriorated and there is no evidence of a floor. Both wire nails and cut nails are present in the structure. The cabin remains are used presently for the storage of lumber and farm equipment.

Structure 2, located 30 m northeast of Structure 1, is a refurbished garage that abuts a residence. Both the garage and the residence were constructed during the early 1920s, but the residence has been remodeled and reconstructed so extensively that none of the original superstructure remains. The garage is comprised primarily of original materials. The building's west wall is native stone and mortar, while the other three are frame construction. The garage measure 7 m X 12.70 m (23 X 41.67 feet). The structure is used presently as a workshop and storage area.

The site is located on a 160-acre parcel of land patented by Fred Stearley on 3/9/1916 (Patent No. 518115). The parcel included the NE/SW, SE/SW of Section 4 and the NE/NW, SE/SW of Section 9 (BLM Land Records, Denver, Colorado). Stearley would have resided on the property for at least five years prior to the patent date. Stearley was the stepson of George Stearley, a pioneer rancher and blacksmith who came to Laporte in 1873 (Watrous 1911:484).

SLR1102 (CA-55)

Site Type: Historic structures, foundations/sheltered camp

Period: Late Prehistoric/early twentieth century

Dimensions: 175 m X 75 m

Elevation: 5,580 - 5,620 feet (1,701 - 1713 m)

Physical Setting: The site occupies a gently-sloping west-facing terrace located approximately 75 m east of and 20 m above the Cache la Poudre River (see Figure 3, Chapter 2). The terrace is bounded to the east by steep hill slopes. Site vegetation is disturbed in many areas due to extensive historic occupation. Short grasses are dominant, with scattered gooseberry, skunkbrush, and ponderosa pine. Juniper and chokecherry occur along the site's western edge. Hill slopes to the east of the

site support dense stands of ponderosa pine and occasional Douglas fir.

Description: This site consists of 16 historic features and a small rock shelter that contains prehistoric deposits. Fourteen of the historic features are structural remains and two are nonstructural boulder piles. Feature 14 is a standing frame structure; the remaining historic features are foundation remnants, wells or cisterns, and dry-laid field stone retaining walls. Three modern residence are located within the site.

The foundation remnants include concrete pads, dry-laid dressed stone enclosures, and concrete foundations with intact plank floors. A concentration of adjoining foundations, concrete walkways, stairwells, and a backfilled well or cistern located in the west central portion of the site near Highway 14, appears to have been a focus of historic activity. This locus is comprised by Features 6 through 11 and Feature 16. Historic artifacts observed on site include oxidized wire nails, fragments of white-glazed ironstone, refined earthenware, and clear and manganese bottle glass.

The site is located on a 72.26-acre parcel patented by Alvah Yauger on 10/20/1917 (Patent No. 604405). The parcel consisted of the SE/NE and Lot 1 of Section 1 (BLM Land Records, Denver, Colorado). Yauger would have resided on the property for at least five years prior to 1917. Alvah Yauger married Lois Yauger in 1922. The couple ran a resort at this location known as Yauger's Cabins or Yauger's Resort, starting in about 1920. Mr. Yauger was reportedly responsible for building the Greyrock Trail. Yauger died in 1947, and his wife died in 1978 (Lois Yauger obituary, Biographical File, Local History Collections, Fort Collins Public Library).

A small rock shelter formed by an upward protruding shelf of bedrock is located on the site's eastern edge at the base of the canyon sideslope. Maximum depth, from dripline to rearwall, is approximately 3 meters; the shelter is approximately 14 m long and faces due west. A light scatter of historic debris was observed on the shelter surface. Limited shovel probing recovered historic debris to a depth of approximately 20 cm below present ground surface. Extensive charcoal and ash deposits, burned spirally fractured large mammal bone, and a single flake were recovered between 23 and 35 cm below present ground surface. Subsequent test excavations defined a minimum of two prehistoric cultural components within the rock shelter. The upper cultural component (encountered during initial probing) yielded lithic debitage, ground stone, and flaked stone artifacts, and faunal remains, and charcoal with a radiocarbon date of 1650 +/- 50 B.P. One small corner-notched projectile point, indicative of the Late Prehistoric stage, was recovered from this component. The second cultural component was encountered between 110 cm and 170 cm below present ground surface. Cultural material from these



levels consisted of lithic debitage and a single hammerstone (see following chapter).

Given the limited amount of excavation conducted within the rock shelter and the nature of colluvial deposits in which the cultural material occurs, it is difficult to discern how many temporal/cultural components may actually be represented. Test Unit 3, the deepest unit excavated, was terminated at 2 m below present ground surface. However, more deeply buried cultural strata may be present since neither alluvial deposits nor Pleistocene terrace formations were encountered in the lower level of Test Unit 3.

5LR1103 (CA-56)

Site Type: Bridge remnants

Period: Historic

Dimensions: 20 m X 10 m

Elevation: 5,380 feet (1,640 m)

Physical Setting: Base of canyon on Cache la Poudre River

Description: Two bridge pylons constructed of massive native boulders and concrete and remnants of a stone, concrete, and timber retaining wall (Figure 18). The pylons are rectangular and measure approximately 8 feet X 8 feet (2.44 m X 2.44 m). The structures are located in the Cache la Poudre River to the north and south of the main channel. The retaining wall is visible in profile in an embankment below the north edge of Highway 14. The material is located approximately 3.3 meters (10 feet) below the present highway grade and coincides approximately with the upper elevations of the pylons. The stone and concrete retaining wall is overlain by a single horizontal axe-cut timber which may represent a remnant of a corduroy road or bridge surfacing.

The bridge remnants are located within a 40-acre parcel of land patented by William H. Dixon on 1/26/1916 (Patent No. 509852). The parcel consisted of the SW/SE of Section 32. The parcel was later owned by the City of Fort Collins. The bridge was constructed in 1935-1936 by the Poudre Canyon Civilian Conservation Corps Camp (Camp S.P.-15-C). The camp was located on the north side of Colorado Highway 14 near the mouth of Poudre Canyon, and its primary purpose was the construction of tourist and picnic facilities along the Poudre Canyon. Enrollees constructed the Fort Collins Municipal Campground or Mountain Park near the Fort Collins Water Filtration Plant in 1935-1936 that included picnic equipment, tables, benches, stone fireplaces, rest rooms, and bridges (Fort Collins Leader, Vacation Edition, 1938; Gleyre and Alleger 1936:86). The picnic

ground has been separately recorded as Site SLR1105 and is abandoned. The bridge has been removed.

SLR1104 (CA-57)

Site Type: Bridge remnants

Period: Historic

Dimensions: 20 m X 10 m

Elevation: 5,460 feet (1,664 m)

Physical Setting: Base of canyon on Cache la Poudre River

Description: Remnants of a bridge destroyed by high water from the 1976 storm that caused the Big Thompson flood. Two boulder-filled cribbed log pylons are present, one on the north edge of the Cache la Poudre River and another in approximately the middle of the river (Figure 19). Both structures are approximately 8 feet (2.44 m) square; original heights cannot be determined. Remnants of a log and 4" X 4" milled lumber structure protruding from the south embankment of Highway 14, approximately 1.20 meters (4 feet) below the present highway grade, probably represent the original bridge platform.

The bridge remnants are located within a group of land parcels patented by William H. Dixon. The first parcel was a 100.57-acre Cash Entry Patent (No. 15764) dated 1/5/1892 that included the SE/NW and Lots 2 and 3 of Section 5. The third parcel was a Homestead Entry Patent (No. 74960) issued on 5/3/1920 to the heirs of Mary Ann Dixon that included the SW/NE, NW/SE, and the E-1/2/SW of Section 5 (BLM Land Records, Denver, Colorado).

SLR1105 (CA-58)

Site Type: Historic features

Period: Early twentieth century

Dimensions: 90 m X 70 m

Elevation: 5,400 feet (1,646 m)

Physical Setting: The site occupies level southeast-facing second and third level terraces at the confluence of the Cache la Poudre River and an unnamed ephemeral tributary. The site is located approximately 30 meters north or and 10 meters above the Cache la Poudre River. The site area is enclosed by steep canyon

Figures 18-19

(1 page)

side slopes. Vegetation on site is dominated by mountain mahogany, wild plumb, gooseberry, and ponderosa pine.

Description: The site consists of five artificially leveled terraces retained by dry-laid field stone walls, five outdoor fireplaces, a well and cistern, milled lumber scraps, a small dam, and an earthen canal. The retained terraces are generally rectangular, approximately 5 m (16.40 feet) wide and range in length from approximately 5 to 12 m (16.40 to 39.40 feet). The largest of these terraces, located near the center of the site, contains a scatter of milled lumber with round wire nails. A square cement cistern (Feature 6) is located within the southwest edge of the terrace. A large concrete-capped well (Feature 7) is located approximately 25 m (82 feet) north of the cistern. Five small native stone fireplaces or barbecue pits are located throughout the site, none within the retained terrace areas. An earthen canal, which follows the west bank of the Cache la Poudre River just above the high water line, defines the site's eastern boundary. The canal is approximately 1 m (3 feet) wide and is heavily eroded and overgrown in most areas. The canal continues northward from the site area and terminates at sluice gate directly across the river from the Fort Collins Water Works. A 1.50 m (4.90 feet) wide dry-laid stone dam (Feature 2) is constructed across a small unnamed ephemeral drainage that traverses the site's northern portion. Remnants of a small wooden sluice in the center of the dam apparently controlled the discharge of water into the canal.

The site is located on a 40-acre parcel of land patented by William H. Dixon on 1/26/1916 (Patent No. 509852). The property was later owned by the City of Fort Collins. In 1935-1936 the Civilian Conservation Corps built the City of Fort Collins Mountain Park on this location. The site included a well constructed bridge (site SLR1103) over the Cache la Poudre River, picnic equipment, tables, benches, stone fireplaces, and rest rooms. The CCC also built a fence around the park. CCC Camp SP-15-C was located at the mouth of the Poudre Canyon on the north side of Colorado Highway 14. The 180-man camp was established on August 2, 1935, and its first project was the building of the park facilities (Glenyre and Allegar 1936:86). The site was used through the mid-1960s but was later abandoned, and the bridge was also removed.

The site is located near CA-56, the remnants of an early bridge, and CA-59, the remnants of a wagon road, and is probably associated with both. The site may also be associated with the earliest structures of the Fort Collins Water Works (CA-76).

5LR1106 (CA-59)

Site Type: Road grade

Period: Early twentieth century

Dimensions: 120 m X 2.60 m

Elevation: 5,440 feet (1,658 m)

Physical Setting: Rocky slopes on northwestern canyon wall. The area is heavily overgrown with stands of wild plumb, gooseberry, and mountain mahogany. A narrow, heavily vegetated floodplain is located approximately 10 meters below the site to the southeast along the edge of the Cache la Poudre River. The canyon slope northeast of the site location is nearly a vertical face.

Description: This site consists of the eroded remnant of a wagon road that is discernible for a short distance along the northeast edge of Poudre Canyon between site CA-58 and the Fort Collins Water Works. The road is indicated by a level grade, approximately 2.60 meters wide in the most intact areas. The grade is retained by a dry-laid field stone retaining wall, which is poorly preserved. The most intact portion of the road, near its western terminus, is retained by dry-laid masonry and horizontally laid axe-cut logs. The road is heavily overgrown with shrubs and vines and is difficult to discern. No evidence of the road was found west of site CA-58, although it may have extended as far as the bridge remnants as CA-56. It seems likely the road originally extended eastward to the Fort Collins Water Works. The road may be associated with an earthen canal at site 5LR1105, which the road parallels.

No road is shown on the north side of the Cache la Poudre River at this point on either the 1877 GLO plat or the 1939-1940 resurvey for Township 9 North-Range 70 West. However, an early wagon road was built from the mouth of Poudre Canyon to the SE1/4 of Section 32, T8N-R70W, just west of the Fort Collins Filtration Plant. This road was presumably built to access the waterworks there. In 1904, a pipeline from Fort Collins to the waterworks site was completed, augmenting the city's water supply by tapping the Cache la Poudre River above the confluence with the North Fork. In 1909, a filtration system was installed at this location (Nortier and Smith 1982:25-29; Watrous 1911:254). The Fort Collins Filtration Plant was recorded as site 5LR1123 during the current survey. The USGS Livermore quadrangle dated 1907 (surveyed in 1904-1907) depicts the road and two buildings at the waterworks site. This road appears to have stayed on the north bank of the Cache la Poudre River and terminated about 1/3 mile west of the waterworks. Colorado Highway 14, built through the lower canyon from 1912 to 1920, utilized the south bank and cut through the projecting ridge southwest of the waterworks. It appears that the older road was used for access to the waterworks and the remaining segment west of the plant was abandoned. This

abandoned road segment appears to be the grade recorded during the current survey. All other early transportation routes were located either north or south of Poudre Canyon due to the steep, narrow, rocky cliffs in its lower section.

SLR1107 (CA-60)

Site Type: Historic structures (Greyrock Lodge)

Period: Early twentieth century

Dimensions: 40 m X 110 m

Elevation: 5,520 - 5,538 feet (1,682 - 1,688 m)

Physical Setting: The site occupies a rolling terrace at the confluence of the Cache la Poudre River and an unnamed intermittent tributary. The location is surrounded by steep canyon slopes. Stands of wild plumb and chokecherry are extremely dense throughout the gulch adjacent the site to the west. The site area supports thick stands of mountain mahogany with sparse stands of ponderosa pine.

Description: Five historic structures comprise this site. Features 1 and 2 are cabins which are currently in use. Feature 1 is a frame cabin with a stone and mortar addition and two attached concrete patios. The main structure measures 9 m X 10 m (29.50 feet X 32.80 feet) and the stone addition measures 2.50 m X 5.0 m (8.20 X 16.40 feet). The structure contains two native stone chimneys.

Feature 2, located approximately 40 m (131 feet) west of Feature 1, is a frame cabin with attached porch and stone enclosure. The main portion of the cabin measure 4.90 m X 7.50 m (16 X 24.60 feet). The attached porch measures 2.2 m X 5.10 m (7.20 X 16.70 feet). A native stone and mortar enclosure, measuring 2.60 m X 2.47 m (8.50 X 8.10 feet) high. The enclosure contains no roofing and is partially collapsed.

Features 3 and 4 are outbuildings associated with Features 1 and 2, respectively. Feature 3 is a frame building; Feature 4 is constructed of native stone and mortar. Feature 5, a small frame outhouse, is associated with Features 2 and 4.

This site is on a parcel of land that was never homesteaded and has been a part of the Roosevelt National Forest since 1916. W.E. Vaplon obtained a special use permit to construct a summer residence here on 5/14/1923. He constructed a one-story frame cabin on a lot measuring 210' square. He also constructed a garage and an outhouse on this parcel. These structures correspond to Features 1 and 3 on the site map accompanying the site form (Appendix C). On 5/7/1931, N.O. Warner obtained a

special use permit to construct a summer residence adjacent to Vaplon on the west side. He also had a parcel measuring 210' square. He constructed a one-story frame cabin, an outhouse, and a wood shed. These structures correspond to Features 2, 4, and 5 on the site map accompanying the site form. By June 1942, Mark Watson held the special use permit for Vaplon's cabin. Both cabins are still in use as summer residences, and the special use permits are still in effect (Roosevelt National Forest, Supervisor's Office, Land Records).

5LR1108 (CA-61)

Site Type: Open lithic scatter

Period: Unknown prehistoric

Dimensions: 10 m X 16 m

Elevation: 5,560 feet (1,695 m)

Physical Setting: Site occupies a level east-facing terrace approximately 100 meters west of and 25 meters above the North Fork Cache la Poudre River. The site and surrounding area support blue grama grass, rabbitbrush, fringe sage, and prickly pear. The site is located within a wide valley bottom with moderate side slopes.

Description: The site consists of two pieces of ground stone and a small lithic scatter. Both ground stone specimens are incomplete. One (FS 1) is a large fragment of a unifacially ground granitic slab, the other (FS 2) is a smaller fragment of a bifacially ground sandstone slab. The two are located within a 10 meter radius. A concentration of four interior flakes is located within 15 meters of the ground stone fragments. Three of the flakes are chert, all a different color, and one is clear chalcedony.

5LR1109 (CA-62)

Site Type: Open lithic scatter/stone circle

Period: Unknown prehistoric

Dimensions: 75 m X 40 m

Elevation: 5,520 feet (1,682 m)

Physical Setting: Site occupies a level east-facing terrace approximately 75 meters west of and 25 meters above the North Fork of the Cache la Poudre River. The site and surrounding area

support short grasses, rabbitbrush, ponderosa pine, yucca, and prickly pear. The location is on the interior of a wide valley bottom surrounded by moderately steep side slopes.

Description: The site consists of one stone circle and an associated sparse lithic scatter. The stone circle is approximately 3.50 meters in diameter, constructed of 16 cobbles. Associated artifacts, which are widely scattered within the surrounding area, include one chalcedony primary flake, one quartzite interior flake, one chert uniface, one fragment of unifacially ground sandstone, and a possible quartz chopper.

SLR1110 (CA-63)

Site Type: Open lithic scatter/stone circle

Period: Unknown prehistoric

Dimensions: 120 m X 50 m

Elevation: 5,510 - 5,580 feet (1,679 - 1,701 m)

Physical Setting: Site occupies a level west-facing terrace approximately 40 m east of and 12 m above the North Fork Cache la Poudre River. The site area supports a dense community of wheatgrass throughout the central portions. The terrace edges are relatively free of vegetation. The site is enclosed toward the east by a ponderosa pine forest and moderately steep canyon side slopes. Limited riparian communities are present along floodplains immediately west of the site.

Description: The site consists of a stone circle and associated hearth or cairn and a lithic scatter of variable density (Figure 20). The stone circle, designated Feature 1, is approximately 3.80 m in diameter and is constructed of 12 cobbles and boulders. Three flake concentrations were noted on the site surface, all of which were located in slightly eroded or denuded areas. Lithic materials on site represent locally available cherts and chalcedonies and a small percentage of fine-grain gray quartzite. One fragment of a unifacially ground sandstone slab was found near the densest lithic concentration. A cluster of river cobbles (Feature 2) is located 1.50 m east of the stone circle.

A grid of 10 shovel probes placed at 10 and 20 m intervals, was excavated on site to determine whether subsurface cultural material was present. Probes 7 and 8, located in the grassy central portion of the site where no artifactual material was visible, yielded a total of two chert interior flakes. Subsequent excavation of a 1 m X 1 m test unit in the vicinity of Shovel Probes 7 and 8 recovered 2 quartzite interior flakes at 5 to 10 cm below present ground surface. Limited excavations within the stone circle recovered a single utilized chert flake



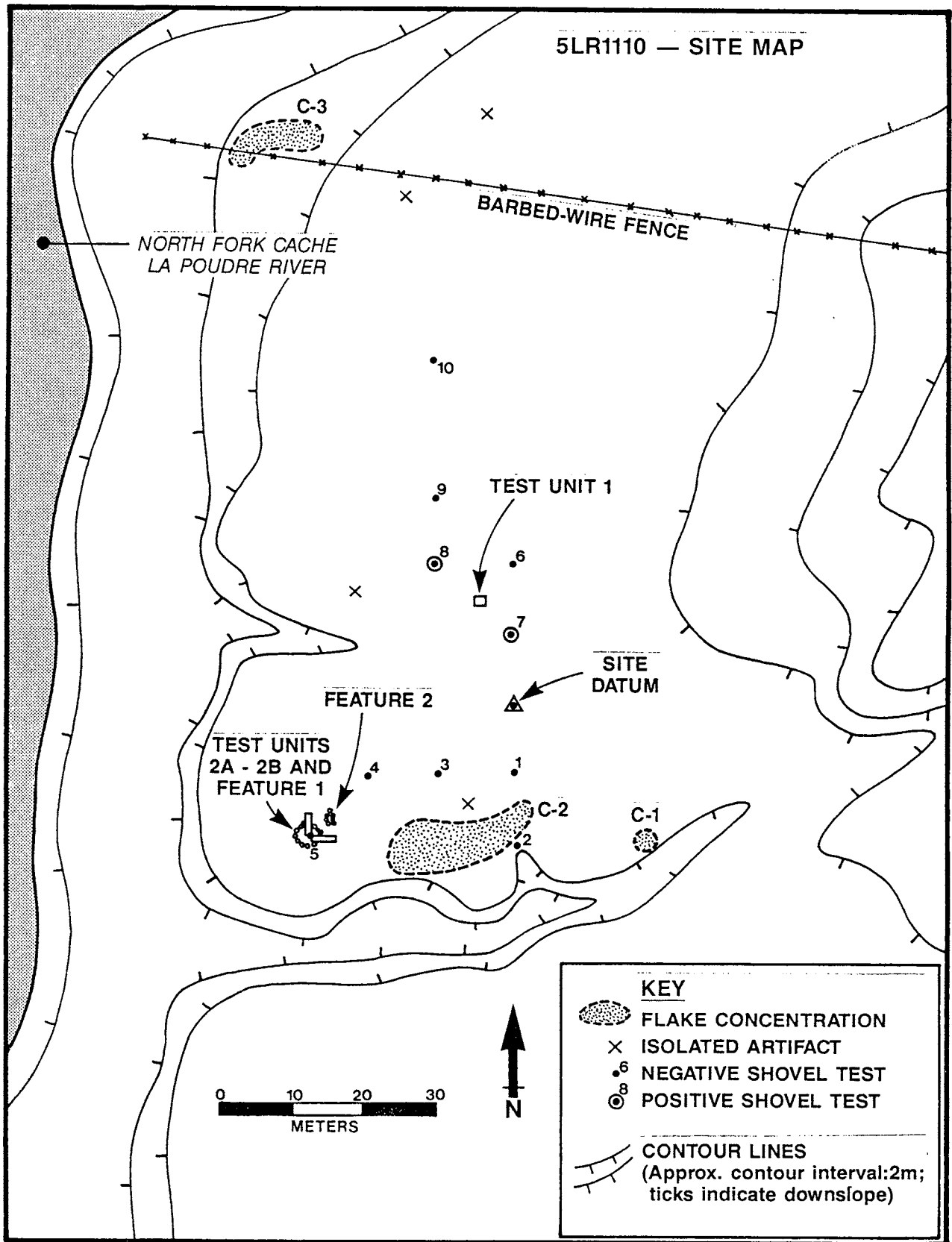


Figure 20. 5LR1110, site map.

at 5 cm below PGS. Soils on site appear well developed with a potential to contain buried archaeological sediments at depths to 50 cm (see following chapter).

SLR1111 (CA-64)

Site Type: Historic structures (homestead)

Period: Late nineteenth to early twentieth century

Dimensions: 145 m X 25 m

Elevation: 5,520 - 5,600 feet (1,682 - 1,707 m)

Physical Setting: The site is located at the mouth of a small unnamed side canyon on an ephemeral tributary of the North Fork Cache la Poudre River. Structures are located on both banks of the tributary stream and on a broad east-facing terrace approximately 30 m east of and 12 m above the North Fork. The side canyon is narrow and precipitous with dense vegetation on the canyon floor. Dominant floral communities are mountain mahogany, skunkbrush, gooseberry, juniper, and ponderosa pine. The terrace adjacent to the canyon is open grassland dominated by blue grama grass and forbs, with rabbitbrush and prickly pear.

Description: The site consists of two stone foundations and associated debris and several intact or partially intact structures which probably represent a later component (Figures 21, 22). The larger of the two stone foundations (Feature 1) is a single course of dry-laid dressed granite slabs measuring 6 m X 10 m (19.70 feet X 32.80 feet). A collapsed chimney, of the same material, is located in the northwest corner (Figure 21). No remnants of a superstructure are present. The smaller stone foundation (Feature 3) is a one m (3 feet) deep depression with remnants of a dry-laid foundation similar to that comprising Feature 1 along the exterior edges. The masonry remnants define an area approximately 3 m X 4 m (9.85 feet X 13.10 feet). Several axe-cut timbers are scattered within and near Feature 2, and most of these contain cut nails. Between Features 1 and 3 is a shallow depression approximately 1.50 m in diameter, designated Feature 2. A shovel probe excavated at the center of this feature recovered numerous fragments of shoe leather, aqua bottle glass, yellow glazed and brown salt-glazed utilitarian earthenware and unidentifiable metal objects, as well as cut nails, a padlock, and pieces of a porcelain figurine. The probe reached 75 cm. On the basis of these results, Feature 2 is believed to represent a refuse pit associated with the site's earliest period of historic habitation. Also recovered from this shovel probe at a depth of 40 to 60 cm below PGS was a single chert interior flake.

Figures 21-22

(1 page)

Features 4 through 8 are believed to represent a period of occupation later than that represented by Features 1 - 3. Feature 4 is the upper rear segment of a ca. 1920 automobile. Feature 5 is the remnant of a stock chute constructed of milled lumber and wire nails (Figure 22), and Feature 7 is a remnant of a pole and rail corral. Features 5 - 7 are located in close proximity and a considerable distance west of Feature 1 - 4.

Feature 8 is the remnant of a large sheepherder type wagon that was apparently placed permanently in the side canyon approximately 50 m west of the main site area. The wagon's axles and wheels have been removed and a large flagstone step is placed adjacent to the east-facing entryway. The wagon measures approximately 2.70 m X 4.20 m (8.90 feet X 12.75 feet) and is constructed of milled lumber, wire nails, lag bolts, and steel braces. An associated lumber scatter contains both cut and wire nails.

The site is within a 160-acre parcel of land patented by Arthur John Stephens on 8/24/1891 (Patent No. 3060). The parcel consisted of the NW/NE, SW/NE, NW/SE, and SW/SE of Section 21. This parcel was owned by G.B. Sparks in 1940. In 1959 it became part of the Roosevelt National Forest and the Seaman Reservoir Recreation Area through a land exchange (BLM Land Records, Denver).

5LR1112 (CA-65)

Site Type: Rock shelter

Period: Late Prehistoric

Dimensions: 6 m X 3 m

Elevation: 5,600 feet (1,707 m)

Physical Setting: The rock shelter is located at the base of a vertical rock face on a flat east-facing floodplain of the North Fork Cache la Poudre River. The site is situated approximately 40 meters west of and 2 meters above the North Fork. The scar of an abandoned stream channel is visible on the floodplain surface approximately 25 meters east of the rock shelter. The floodplain is sparsely vegetated with short grasses and rabbitbrush. The overlying rock faces support isolated mountain mahogany and rabbitbrush, while the ridgetops above are characterized by open grasslands with scattered ponderosa pine.

Description: The site is located within a rock shelter 6 m long and 3 m deep (Figures 23, 24). At the time of recording, the shelter ceiling was approximately 1.25 above ground surface. No artifacts were visible in or near the rock shelter. Four shovel probes were excavated at two meter intervals along an east-west

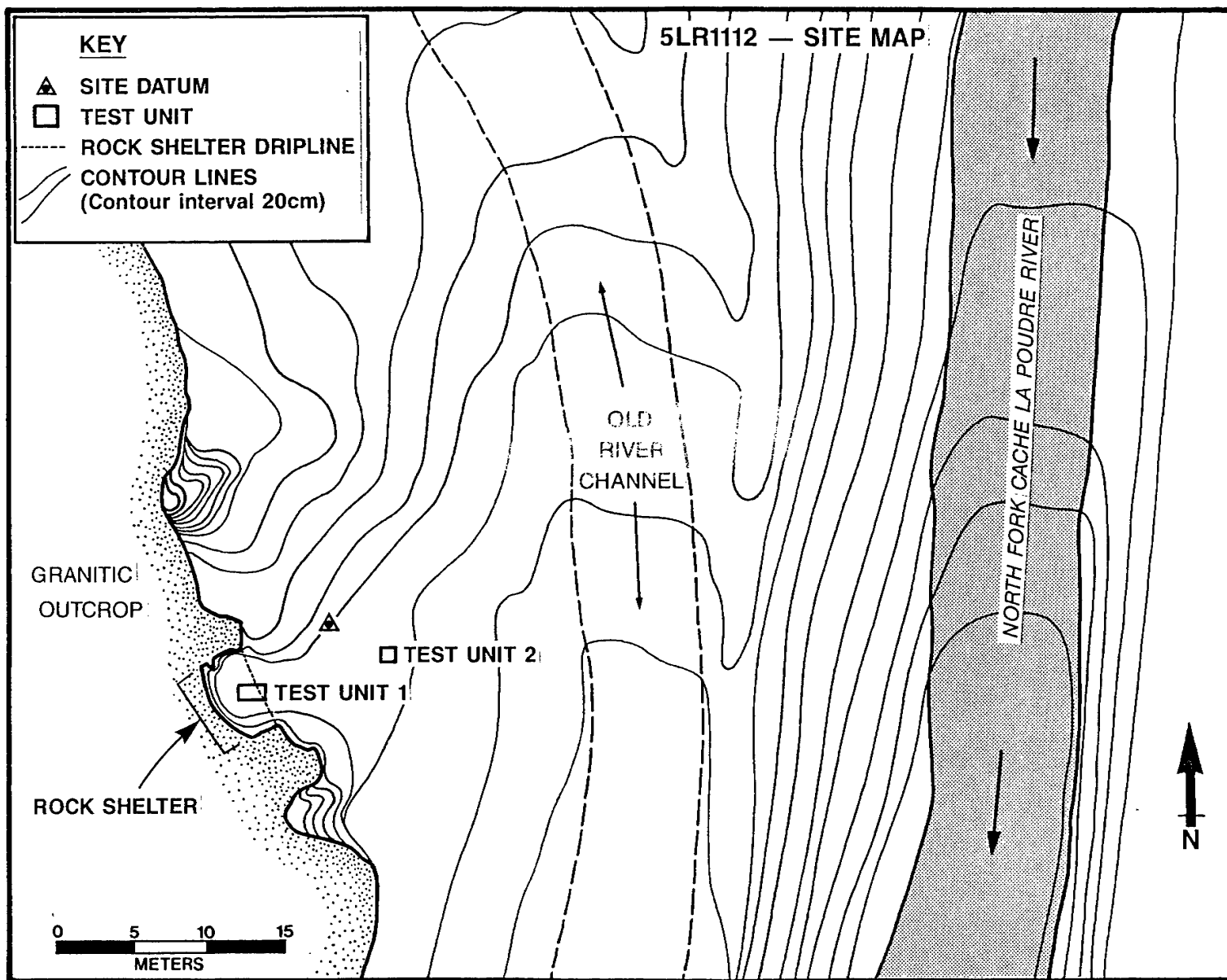


Figure 23. 5LR1112, site map.

Figure 24  
(1 page)

line extending from the rear shelter wall. Lithic debitage and spirally fractured large mammal bone fragments were recovered from two shovel probes within the shelter (Probes 3 and 4) at depths of 50-70 cm below present ground surface.

Subsequent formal test excavations demonstrated the presence of two cultural components within the rock shelter. The upper cultural component, which occurs between 50 and 57 cm below present ground surface (PGS), is characterized by a moderately dense amount of lithic debitage, as well as unifacially and bifacially flaked lithic artifacts, ground stone, and one ash-filled pit with burned bone (Feature 1). A possible structural feature was also found within this stratum (Feature 3). The feature consists of vertical and horizontal slabs, and apparently unaltered timber. This upper component yielded a radiocarbon date of 1200±50 B.P.

The second cultural stratum, which occurs between 120 and 130 cm below PGS, is comparatively ephemeral. Scattered charcoal granules, small fragments of burned bone, and a shallow, possibly deflated or eroded basin type feature (Feature 2) were recovered within this stratum (see following chapter).

#### 5LR1113 (CA-66)

Site Type: Historic structures (Poland Homestead)

Period: 1889-1915

Dimensions: 230 m X 100 m

Elevation: 5,580 - 5,650 feet (1,701 - 1,722 m)

Physical Setting: The site occupies rolling terraces and floodplains on both sides of the North Fork Cache la Poudre River (see Figure 4, Chapter 2). The great majority of material is located on the west side of the river at the mouth of a small unnamed box canyon. Dominant vegetation communities are short grasses, wheatgrass, and ponderosa pine. Rabbitbrush, cottonwood, prickly pear, and bitterbrush are also present. The surrounding slopes support communities of mountain mahogany and ponderosa pine.

Description: The site consists of three partially intact structures (Features 1, 5 and 7), three foundations (Features 3, 6 and 8), a stone lined well (Feature 2), a corral (Feature 10), and associated farm and ranch equipment, building refuse, and slab piles (Features 4, 9, 11-15) (Figures 26 through 31). Feature 1, a log cabin remnant, is the only feature located on the east bank of the North Fork Cache la Poudre River (Figure 26). The structure measures 6 m X 4.5 m (17.70 X 14.75 feet). Three walls are intact to a height of approximately 1 meter (3

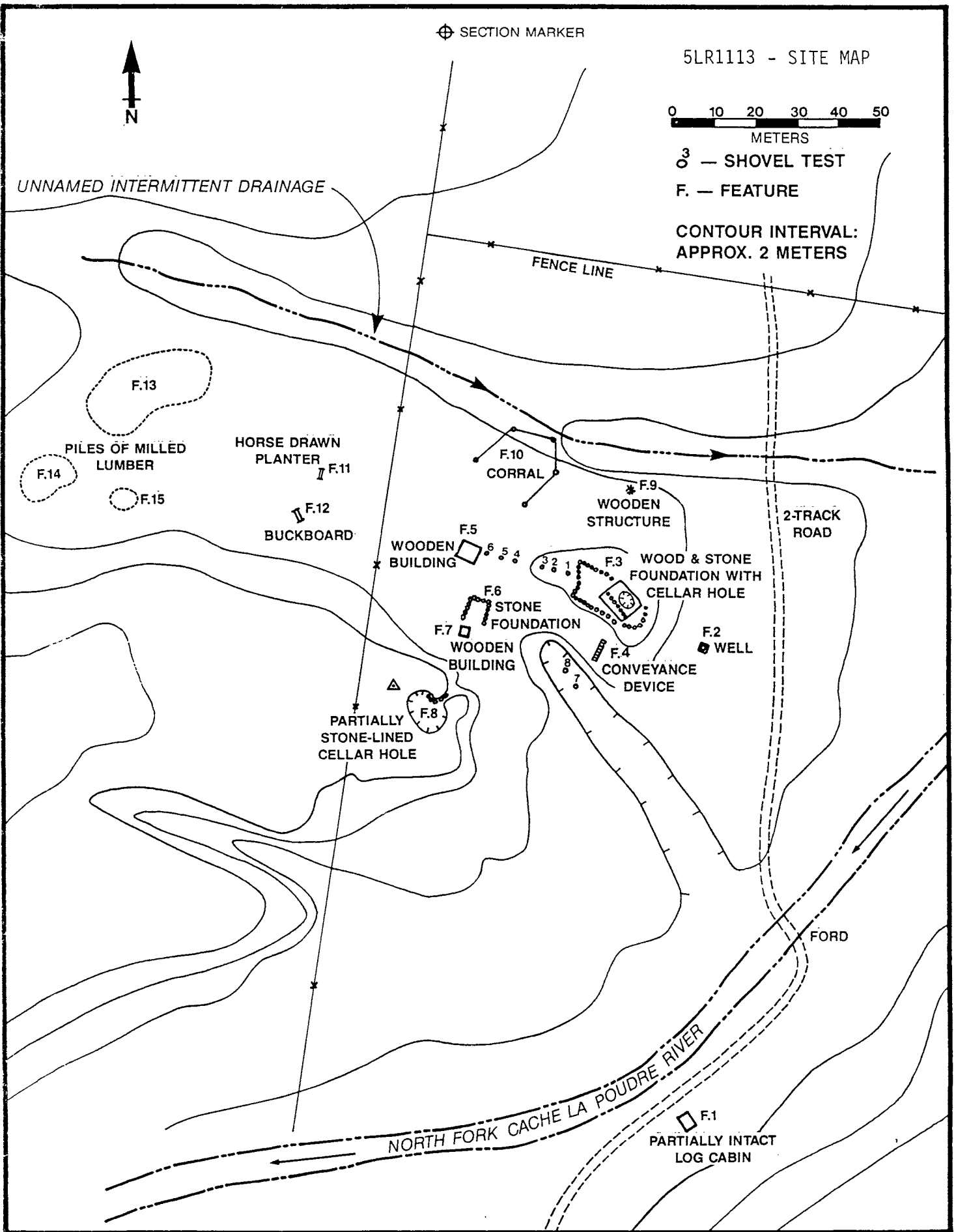


Figure 25. 5LR1113, site map



Figures 26-31

(3 pages)

feet). The cabin is constructed of both axe-cut and sawed logs. Intersections are both V-notched and square-notched.

Feature 5, located on the west bank of the river in the site's central portion, is a 5 m X 5 m (16.40 X 16.40 feet) structure that exhibits several types of construction. The east wall is constructed of massive adze-hewn rectangular logs; the north wall is constructed of large round sawed logs. Both these walls contain cut nails. The south and west walls and the roof, which is approximately 90% deteriorated, are constructed of milled lumber frames and board siding (Figure 29). These portions of the structure contain wire nails. No flooring is present. The structure appears to have served most recently as a stable.

The interior east wall and exterior north wall contain several inscriptions (Figure 30). Both carved and penciled inscriptions are present on the interior east wall. The majority are carved deeply in thick block letters. From top to bottom and from right to left, the following inscriptions are carved on this wall: "W;" "DP;" "CP;" "H;" "1 SKUNK;" "2 FOX;" "4 MINK;" "TWO SKUNK;" "1 CIVITCAT;" "GHJ."

Several illegible sections of penciled script are present, as well as a clearly legible penciled date "1889-1890." The name "ETHEL" is penciled on the wall along with several faintly discernible childlike drawings.

The following are carved in thick block letters on the exterior north wall: "1890;" "Wm POLAND;" "W/P;" "18;" "AUG;" "1889;" "CP."

Feature 7, which is located approximately 40 meters (131.30 feet) south of Feature 5, is the remnant of a frame building measuring 10 m X 4 m (32.80 X 13.10 feet) with peaked roof gables intact on the north and south ends (Figure 31). Both cut and wire nails are present in the structure. Three walls are relatively intact. The roof and west wall are deteriorated.

Feature 3 is a large foundation outlined by a dry-laid field stone enclosure. The interior foundation contains a substantial cellar hole with doorway and staircase and remnants of adze-hewn floor joists, field stone alignments, piles of bricks and shake shingles (Figure 28). The foundation's exterior dimensions are 11 m (36 feet) X 20 m (65.60 feet). The cellar hole is approximately 2 m (6.60 feet) deep 5 m (16.40 feet) square. A minimum of four interior divisions are indicated by the floor joists. Both cut and wire nails are present. Associated artifacts include several dozen sherds of utilitarian earthenware, window glass, ironstone and porcelain, and a shutter hinge with patent date 1883.

Feature 6 is a dry-laid dressed stone foundation measuring 11 m (36 feet) X 10 m (32.80 feet). Approximately 40 roughly

dressed blocks of native granite comprise the foundation. No evidence of a superstructure remains. Feature 7 is located just off the southwest corner of the foundation.

Feature 8 is a cellar hole with a stone walled entranceway. The cellar hole measures approximately 6 m (19.70 feet) square and is approximately 1.80 m (5.90 feet) deep. The entranceway extends approximately 3 m (9.80 feet) northeastward from the cellar hole. Maximum height of the dry-laid stones retaining the entranceway is approximately 0.70 m (2.30 feet). No evidence of a superstructure or enclosing foundation stones are present.

Feature 2 is a stone lined well approximately 1.50 m (4.90 feet) in diameter and roughly 12 to 15 m (40 to 50 feet) deep (Figure 27). A formed concrete pad surrounding the well head and remnants of a frame structure with a wooden spindle and crank appear to be relatively late additions. The well is located directly east of Feature 3.

Remnants of a pole and rail corral (Feature 10) and lap-jointed adze-hewn beams, apparently dislocated from a structure (Feature 9) are located in a shallow gulch east of Feature 3. Remnants of a buckboard (Feature 12), a horse-drawn planter (Feature 11), and three sawmill slab piles (Features 13-15) are located in a rolling meadow west of the main site area.

Feature 4 is a problematic object located adjacent to Feature 3 on the south edge of the foundation. This feature consists of six wooden rollers mounted on a 4 m (13.10 feet) long wooden and metal frame. The device may be raised or laid on its side by means of a central wooden bracket that pivots around a one-inch diameter pipe. The pipe extends over a deep ravine to the south and continues into the ground northward toward Feature 3.

The site is located on a 160-acre parcel of land patented by William Poland on 7/11/1910 (Patent No. 143417). The parcel consisted of the NW/NW of Section 15, the SW/SW of Section 10, and the NE/SE, SE/SE of Section 9. Poland probably occupied the site for at least five years prior to 1910. William Poland is mentioned in History of Larimer County as one of the early homesteaders settling in the Livermore area in the 1880s (Watrous 1911:194).

The same parcel had previously been filed upon on 9/19/1885 but was canceled on 4/19/1897 (Homestead Entry No. D 6392). A portion of this homestead parcel, including the NW/NW of Section 15, was first filed upon on 9/23/1882 and canceled on 9/19/1885 (Homestead Entry No. D 4940) (BLM Land Records, Denver). Therefore, the site could have been occupied with at least some improvements as early as 1882. These dates would account for the presence of square nails and the early dates inscribed and written on the cabin walls.

William Poland came from Boston, Massachusetts. His wife's name was Marion, and they had four sons, William C. (Chad), Sidney, Charlie, and Douglas, and one daughter, Ellen. Poland engaged in cattle raising and was still living on the homestead as late as 1918 (Poland Biographical File, Local History Collections, Fort Collins Public Library). Poland's home is depicted on the USGS Livermore quadrangle dated 1907 in the NW/NW of Section 15. At that time, there was a road running along the North Fork of the Cache la Poudre River leading to Livermore on the north and bypassing Poudre Canyon in a southeasterly direction to reach the open plains northwest of present-day Ted's Place. By 1940, W.P. Johnson was listed as the owner of the Poland land parcel.

5LR1114 (CA-67)

Site Type: Historic structures

Period: Twentieth century

Dimensions: 100 m X 30 m

Elevation: 5,600 feet (1,707 m)

Physical Setting: The site is located within an unnamed side canyon of an ephemeral tributary of the Cache la Poudre River. The location is approximately 300 m south of and 50 m above the Cache la Poudre River. The site area is enclosed to south, east and west by steep, heavily wooded slopes. Ponderosa pine, Douglas-fir, wild plumb, aspen, and cottonwood are dense within the gulch, while the surrounding slopes are covered with ponderosa pine and mountain mahogany.

Description: The site consists of a partial dry-laid field stone foundation and intact stone and mortar chimney (Feature 1), two dry-laid field stone retaining walls (Features 2 and 3), a trash dump (Feature 4), and a graded access road (Feature 5). Feature 1 consists of two dry-laid field stone walls retaining a level terrace with a standing stone fireplace and chimney at the south edge (Figure 32). This feature apparently represents the remains of a cabin or cottage. The dry-laid foundations roughly define two 3 m X 5 m (10 X 16.40 foot) rooms or partitions. A dry-laid field stone retaining wall (Feature 2) is located along the overlying slope east of Feature 1. A similar retaining wall (Feature 3) is located approximately 25 m south of Feature 1, west of and above a small ephemeral spring. The functions of these walls are unknown. Feature 4 is a small trash dump, consisting of clear bottle glass, white china, sanitary cans, and oxidized metal scraps. The trash is strewn down the eastern slope of the gulch at a point approximately 25 m north of Feature 1. A grown over, but well defined road grade leads from a point adjacent to Feature 1 to Highway 14 at the mouth of the gulch.

The site is located on a 160-acre parcel of land patented by the heirs of Mary Ann Dixon on 5/3/1920 (Patent No. 747960). The parcel consisted of the SW/NE, NW/SE, and E-1/2/SW of Section 5 (BLM Land Records, Denver). The homestead would have been occupied at least five years prior to the patent date. William Dixon had previously patented several parcels of land adjacent to this parcel starting in 1892. This was the last parcel to be patented by the Dixons and appears to have been used chiefly to expand their existing holdings. Walter and Mary Ann Dixon emigrated from England in 1870 and became part of the Union Colony at Greeley. Fifteen years later they moved to the Fort Collins area. One of their sons was the William Dixon who homesteaded in Poudre Canyon (Wagner 1984:6-7).

Most of this parcel is quite steep and generally unsuitable for agricultural pursuits. The site is small and confined to a single cabin that has burned and a small refuse dump indicating only limited or short term use of the site. The property was owned by Mabel Jumaway in 1940.

SLR1115 (CA-68)

Site Type: Cellar hole/homestead remnant

Period: Unknown historic

Dimensions: 4 m X 5.50 m

Elevation: 5,400 feet (1,646 m)

Physical Setting: The site is located at the base of a canyon side slope on an east-facing terrace approximately 75 west of and 24 m above the Cache la Poudre River. The meadow supports wheatgrass, rabbitbrush, skunkbrush, gooseberry, and prickly pear. Wild plumb grows inside the cellar hole. The overlying canyon slopes support dense stands of ponderosa pine. Scattered stands of ponderosa pine occur on the western portion of the terrace.

Description: The site consists of a depression approximately 1 m deep (probably a poorly preserved cellar hole) with portions of a dry-laid field stone wall retaining the east and north edges. The depression measures 4 m X 5.50 m (13.10 X 18 feet). No artifacts or additional features were found on site.

The site is located on a 96.88-acre land parcel patented by George Wollner on 5/15/1919 (Patent No. 6777810). The parcel consisted of the N-1/2/NW and SE/NW of Section 4. Portions of this homestead had been previously filed upon. The first filing was a 120-acre parcel consisting of the NW/NW, SW/NW, and SE/NW of Section 4 on 4/9/1908 (Homestead entry No. D 03527). It was relinquished on 1/25/1909. The second filing was for a 140.24-

acre parcel consisting of the NW/NW, SW/NW of Section 4, and the SE/NE, SW/NE of Section 5 on 7/19/1910 (Homestead Entry No. D 013759). It was relinquished on 1/20/1913. Therefore, the earliest occupation date for the site was 1908 (BLM Land Records, Denver).

SLR1116 (CA-69)

Site Type: Mine and tailings

Period: Unknown historic

Dimensions: 10 m X 20 m

Elevation: 5,640 feet (1,719 m)

Physical Setting: Site occupies steep, heavily wooded canyon side slope approximately 60 m east of and 24 m above the Cache la Poudre River. The slope supports dense stands of mountain mahogany and ponderosa pine with occasional Douglas fir. Stands of cottonwood occur along the canyon floor.

Description: The site consists of an open pit excavation approximately 3.50 m wide and 8 m deep cut into the canyon side slope. A shallow tunnel extends approximately 4.50 m into the hill slope off the east end of the excavation. Tailings extend downslope from the excavation almost to the east edge of Highway 14. No artifacts or additional features were noted in association with the mine and tailings.

The site appears to be located on a 72.26-acre land parcel patented by Alvah Yauger on 10/20/1917 (Patent No. 604405). The parcel consisted of the SE/NE and Lot 1 of Section 1. Remnants of the nearby Yauger Homestead were recorded as site SLR1102. The site appears to be a small exploratory adit for precious metals. No record of filings could be found for the mine at either the Supervisor's Office, Roosevelt National Forest, or in the Larimer County Courthouse.

SLR1117 (CA-70)

Site Type: Historic features

Period: Unknown historic

Dimensions: 15 m X 12 m

Elevation: 5,960 feet (1,817 m)

Physical Setting: Site is situated on a steep, heavily wooded canyon sides slope immediately east of an unnamed intermittent tributary of the Cache la Poudre River approximately 350 m southeast of and 75 m above the river. The site and surrounding areas support dense stands of ponderosa pine with less frequent occurrences of Douglas fir. Mountain mahogany is the dominant understory. Massive blocky granitic outcrops occur throughout the gulch and surrounding area. The site occupies a small relatively level terrace surrounded by granitic outcrops and steep slopes.

Description: The site consists of two cisterns or troughs, a sluice, and a scatter of milled lumber. Feature 1 is a circular concrete-lined basin approximately 1.50 m (4.90 feet) in diameter and 0.25 m (0.80 feet) deep. A narrow concrete and stone sluice extends approximately 5 m from the west edge of Feature 1 to the upper east edge of Feature 2 (Figure 33), an ovoid stone and mortar trough located approximately 1.50 m below Feature 1. Feature 2 measures 1 m (3.30 feet) X 2.30 m (7.55 feet). The structure is built above ground and is approximately 1 m (3.30 feet) in height. Several weathered pieces of milled 2" X 6" lumber are scattered nearby. Remnants of two possible wooden troughs, approximately 4.90 m (16 feet) long were noted among the lumber.

The site is located on an 80-acre parcel filed upon on 4/22/1914 (Homestead Entry No. D 019790). However, the parcel was relinquished less than four months later on 8/8/1914. This parcel was never filed upon again and became a part of the National Forest system in 1916 (BLM Land Records, Denver). It is unlikely that the site is related to this short occupation.

The site appears to be a stock watering facility. The circular concrete-lined basin or cistern may have stored water from a seep or spring, and the sluice and trough made it accessible for livestock to drink as it captured and held the overflow. The facility could have been built by nearby homesteaders such as the Yauger family (see site 5LR1102), who patented several land parcels in adjacent areas in Section 6 and Section 1, T8N-R71W.

5LR1118 (CA-71)

Site Type: Historic feature

Period: Post-1930

Dimensions: 6 m X 8 m

Elevation: 5,875 feet (1,791 m)

Figures 32-33

(1 page)



Physical Setting: Site is situated on a steep canyon side slope approximately 23 meters above an unnamed intermittent tributary of the North Fork Cache la Poudre River. The location is approximately 600 m west of and 95 m above the North Fork. The site is located within a dense stand of mountain mahogany surrounded by a ponderosa pine forest.

Description: The site consists of a collapsed sheet metal shack and two truck or automobile engines mounted on railroad ties. The shack apparently enclosed the engines. Two fifty gallon fuel tanks are located immediately east and west of the shack remnants. The shack is designated Feature 1. Feature 2 is a Ford model 59A-B V-8 engine in reasonably good condition (the carburetor and valve covers are intact.) Feature 3 is a GM model 838101 six cylinder engine short block missing two pistons. Both engines' radiators are intact. A 2 1/1 inch pipe leads downslope from the northwest edge of the site toward the base of the underlying gulch.

The site is located on Forest Service land that was never previously homesteaded. However, Arthur John Stephens patented a nearby 160-acre parcel on 8/24/1891 (Patent No. 3060). An historic homestead on his property was recorded as site 5LR1111. The parcel comprised the NW/NE, SW/NE, and SW/SE of Section 21. This parcel was reconveyed to the Forest Service in 1959 (BLM Land Records, Denver).

The site appears to be recent and may have served to pump water or as a portable sawmill location. However, there is no nearby evidence of sawdust piles or discarded slabs. Secondly, there is no evidence of nearby mining-related activity. Therefore, the exact function of the site is unknown.

5LR1119 (CA-72)

Site Type: Stone and timber fence/wall

Period: Late nineteenth century and/or early twentieth century

Dimensions: 240 m X 1 m

Elevation: 6,090-6,250 feet (1,856-1,905 m)

Physical Setting: The site extends along the northern crest of a steep canyon rim approximately 400 meters west of and 330 meters above the North Fork Cache la Poudre River. The location overlooks unnamed intermittent tributaries of the North Fork to the north and west. Portions of the structure traverse blocky granitic bedrock outcrops and portions are within dense communities of mountain mahogany and bitterbrush. A scattered ponderosa pine forest surrounds the site area.

Description: The site consist of a 240 m long segment of stone and timber fence that extends northeastward from summit 6252 along the northern rim of the canyon of the North Fork Cache la Poudre River. Approximately two thirds of the structure is constructed of 10 to 20 cm diameter timbers forming a crude pole-and-rail type fence. Uprights are formed by tri-pods and quadrapods of timbers with horizontal members attached. Both cut and wire nails were noted in the timbers, cut nails being dominant. Approximately one third of the structure is comprised of dry-laid unaltered granitic boulders. The masonry segments of the fence are partially or totally collapsed, the most intact segments being 4 courses high. No artifacts or additional features were noted in association with the fence. The structure is located approximately 500 meters southeast of 5LR1113 and may be associated.

Section 16 was granted to the State of Colorado by the federal government; in 1936 this section became part of the National Forest by means of a forest exchange. No homesteading activity ever occurred within Section 16 (BLM Land Records, Denver).

The site appears to be a drift fence for controlling livestock. The abundance of cut nails used in construction suggests a construction date prior to 1900 (Fontana et al. 1962). Therefore, the fence appears to pre-date Forest Service grazing leases and units. The fence could be related to known cattle raising activity at the nearby William Poland Homestead (site 5LR1113).

5LR1120 (CA-74)

Site Type: Cabin

Period: Early twentieth century

Dimensions: 40 m X 15 m

Elevation: 5,700 feet (1,737 m)

Physical Setting: The site occupies the base of a small side canyon of an unnamed intermittent tributary of the North Fork Cache la Poudre River. The site is located on the north bank of the unnamed tributary approximately 400 m west of the North Fork. The area supports dense stands of mountain mahogany and scattered stands of ponderosa pine and juniper. The cabin is surrounded in all directions by moderately steep to steep slopes.

Description: The site consists of an intact log cabin that measures 5 m X 8.50 m (16.40 X 27.90 feet). The cabin's main segment rests on a dry-laid field stone foundation. The cabin contains one window in the east wall. The entryway is from the

south, through the porch-like room. Floors and roof are reasonably intact, but in a state of deterioration. Wire nails are used throughout the structure.

SLR1121 (CA-75)

Site Type: Mine

Period: Unknown historic

Dimensions: 45 m X 5 m

Elevation: 5,840 feet (1,780 m)

Physical Setting: The mine is located on a steep south-facing hill slope approximately 350 m east of and 90 m above the North Fork Cache la Poudre River. It is situated within a ponderosa pine forest with scattered stands of blue spruce. Mountain mahogany is the dominant understory and is dense throughout areas surrounding the site.

Description: The site consists of an open mine excavated into a steep hill slope. The excavation is 13 feet (4 m) wide and 43 feet (13 m) long. Maximum depth of the trench is approximately 8 feet (2.50 m). The mine's tailings extend approximately 98 feet (30 m) down slope from the excavation. No artifacts and no other features are associated with the mine.

The site is located within a section that was granted to the State of Colorado. In 1936 the entire section was granted to the National Forest (Forest Exchange Patent No. D 04722). The site appears to be a prospect for precious metals. It may also be related to mica mining. According to Poland family correspondence in 1907 (the William Poland homestead is north of the site and was recorded as site SLR1113), a St. Louis manufacturer was interested in developing mica mines in the area, and Sidney Poland had given him samples from nearby mica ledges. Sidney Poland mentions sites on the north side and head of Long Gulch, the side of Openchain Gulch on the east side of the river. It is not known if any of the deposits were subsequently developed (Poland Correspondence, Biographical file, Local Historical Collections, Fort Collins Public Library). However, this prospect is merely an open trench and was never extensively developed. There is no record of filing at the Supervisor's Office, Roosevelt National Forest, or at the Larimer County Courthouse.

SLR1122(CA-73)

Site Type: Stone circle/open lithic scatter

Period: Late Prehistoric

Dimensions: 55 m X 45 m

Elevation: 5,725 feet (1,745 m)

Physical Setting: The site occupies rolling upland terraces along the western slope of the canyon of the North Fork Cache la Poudre River. The location is approximately 100 m west of and 60 m above the North Fork. The general site area is characterized by open grassland dominated by blue grama grass and wheatgrass, with scattered communities of rabbitbrush and sagebrush. The western side of the canyon is rolling to moderately steep while the eastern side is extremely precipitous. Limited riparian communities occur along the floodplains of the river below the site.

Description: The site consists of one stone circle, approximately 3.75 m in diameter, and an associated lithic scatter. Approximately 25 cobbles comprise the stone circle. A lithic scatter to the north of the stone circle contains approximately 20 secondary and tertiary flakes of locally available cherts and quartzites. A small corner-notched serrated projectile point, indicative of the Late Prehistoric period, was recovered near the site's eastern edge. A unifacially retouched chert interior flake was also noted on the surface.

SLR1123 (CA-76)

Site Type: City of Fort Collins Water Filtration Facility

Period: 1918-1987

Dimensions: 350 m X 350 m

Elevation: 5,374 feet (1,638 m)

Physical Setting: The main site area is located on a broad terrace at the confluence of the Cache la Poudre River and the North Fork of the Cache la Poudre River. Feature 4 is located along the north bank of the Cache la Poudre River at the base of a steep slope. The main site area has been landscaped and terraced extensively. This area is bounded to the east by the Cache la Poudre River and to the west by the steep slopes of a spiny ridge, known locally as Waterworks Hill. The site area is surrounded by scattered ponderosa pine forest with a dense understory of mountain mahogany. Stands of wild plum are

extremely dense along the north edge of the Cache la Poudre River surrounding Feature 4.

Description: This site is the Fort Collins Water Filtration Facility. The earliest components were constructed ca. 1918 and construction of new facilities and modification of existing facilities has continued to the present. Four structures which were constructed entirely, or in part, prior to 1957 are recorded as historic features (Figures 34 through 37).

Feature 1 is the main plant facility (Figure 34). This is an L-shaped red brick and concrete building which measures approximately 60 m X 50 m (197 feet X 164 feet). A portion of this structure, located at the rear of the present building, was erected ca. 1918. Most of the present structure was erected in the mid-1950s, with a later addition during the 1970s.

Feature 2 is a small red brick pump station (Figure 35) located approximately 150 m NW of Feature 1. It measures approximately 10 m X 10 m (33 feet X 33 feet). This is apparently one of the plant's original structures erected ca. 1918. No alterations or additions are apparent.

Feature 3 is a red brick pump station (Figure 36) similar to Feature 2. This structure is located approximately 100 m west of Feature 2. Feature 3 represents a second construction period during the late 1940s and early 1950s. No additions or alterations are apparent.

Feature 4 is the remnant of an irrigation canal that originates on the north bank of the Cache la Poudre River adjacent to the water filtration plant and extends approximately 500 m west to site 5LR1105. Portions of the canal adjacent to the water filtration plant consist of dry-laid masonry walls (Figure 37) retaining earthen berms, and a central V-shaped trough constructed of 2" X 8" milled lumber. Portions of the canal located west of the water filtration plant are more heavily deteriorated. In these areas the canal is indicated only by low earthen berms.

The site is located on a land parcel patented as a State Selection for an Agricultural College on 2/1/1886 (Patent No. 1) (BLM Land Records, Denver). The City of Fort Collins Water Filtration Facility was built on the site starting in 1904. The first phase involved the building of a pipeline from this site to Fort Collins. The pipeline gathered water from the Cache la Poudre River above its confluence with the North Fork. It is not clear what structures were built at the intake; however, the USGS Livermore quadrangle dated 1907 (surveyed from 1905-1907) shows two buildings at this site, probably to house pumping machinery. A complete history of the filtration facility, including building episodes and dates, may be found in Chapter 3 under the heading "Irrigation Projects and Water Systems".

Figures 34-37

(2 pages)

Despite the modifications to the filtration plant, the core of this building complex is still similar to its original exterior appearance. Feature 1 (see site map and photos) is one of the oldest components (ca. 1909 or 1913) and consists of a two-story hipped roof brick building with an exterior chimney and a one-story brick addition with gabled roof and round metal ventilators. In 1925-1926, a new filter building was added onto the south end of this complex. It is a flat-roofed one-story brick building. A new brick chlorine and polymer feed and storage facility was constructed on the west elevation of the filter building in 1977. The older chemical feed and storage building located to the northwest of Feature 1 was removed at an unknown date.

Feature 2 and Feature 3 are flat-roofed brick pumping facilities located adjacent to the sedimentation basins. These features are perhaps the two oldest components remaining at the plant and may have been constructed in 1904 or 1909. The sedimentation basins have been modified numerous times and no longer retain any physical integrity.

TABLE IV

## CULTURAL RESOURCE DESCRIPTIVE DATA

Resource No.	Field No.	Description	Age	Topographic Position	Elevation
5LR1095	CA-48	Poudre Valley Canal- earthen dry-laid masonry canal	AD 1880s	Canyon slopes/ terraces	5280-5360' (1609-1634 m)
5LR1096	CA-49	Earthen ditch	Unknown historic	River terrace on canyon floor	5320' (1621 m)
5LR1097	CA-50	Explosives storage cellar	AD 1912-1920	Side slope of drainage	5400' (1646 m)
5LR1098	CA-51	Open camp/stone circle	Middle Paleo- Indian through Late Prehistoric	Stream terrace canyon floor	5480-5510' (1670-1679 m)
5LR1099	CA-52	Prehistoric/historic campsite	Unknown prehistoric/ probable pre-1890 historic	Stream terrace on canyon floor	5480-5500' (1670-1676 m)
5LR1100	CA-53	Open camp with ground stone	Unknown prehistoric	Bench at base of hill slope	5480' (1670 m)



TABLE IV  
(Continued)

CULTURAL RESOURCE DESCRIPTIVE DATA

Resource No.	Field No.	Description	Age	Topographic Position	Elevation
5LR1101	CA-54	Log cabin and 3-bay garage	AD 1890-1920	Bench above river	5320' (1622 m)
5LR1102	CA-55	Yauger Homestead; rock shelter with prehistoric deposits	AD 1912-1930; Late Prehistoric	Upland terraces on canyon floor	5580-5620' (1701-1713 m)
5LR1103	CA-56	Bridge pylons of local stone and concrete	AD 1935-1936	Canyon bottom on river	5380' (1640 m)
5LR1104	CA-57	Cribbed log bridge remnants	Unknown historic	Flood terrace on canyon floor	5460' (1664 m)
5LR1105	CA-58	Dry-laid retaining walls, BBQ pits, check dam, well, cistern	AD 1935/1936-1960s	Stream terrace on canyon floor	5400' (1646 m)
5LR1106	CA-59	Rock bed shored by timber and dry-laid masonry	AD 1890-1920?	Base of canyon side slope	5440' (1658 m)

TABLE IV  
(Continued)

CULTURAL RESOURCE DESCRIPTIVE DATA

Resource No.	Field No.	Description	Age	Topographic Position	Elevation
5LR1107	CA-60	Greyrock Lodge: historic habitation, 5 structures	AD 1923-1931	Base of steep ridge	5520-5538' (1682-1688 m)
5LR1108	CA-61	Open lithic scatter/ chipped and ground stone	Unknown prehistoric	Flat river terrace	5560' (1695 m)
5LR1109	CA-62	Open lithic scatter and stone circle	Unknown prehistoric	Flat river terrace	5520' (1682 m)
5LR1110	CA-63	Open lithic scatter with stone circle/ possible hearth	Unknown prehistoric	Flat river terrace	5510-5580' (1679-1701 m)
5LR1111	CA-64	Stone foundation dugout, associated features	AD 1891-1940s?	Stream terrace at at base of canyon	5520-5600' (1682-1707 m)

TABLE IV  
(Continued)

CULTURAL RESOURCE DESCRIPTIVE DATA

Resource No.	Field No.	Description	Age	Topographic Position	Elevation
5LR1112	CA-65	Rock shelter with lithic debitage and faunal remains	Late Prehistoric	Flood plain at base of high ridge	5600' (1707 m)
5LR1113	CA-66	William Poland Homstead, 10 historic structures	AD 1889-1915	Rolling terraces on canyon floor	5580-5650' (1701-1722 m)
5LR1114	CA-67	Stone foundation and chimney, retaining walls, dump, and road bed	AD 1915-?	Sloping terrace above drainage	5600' (1707 m)
5LR1115	CA-68	George Wollner Homstead, dugout	AD 1919	Sloping meadow	5400' (1646 m)
5LR1116	CA-69	Small open pit mine	Unknown historic	Canyon slope	5640' (1719 m)

TABLE IV  
(Continued)

CULTURAL RESOURCE DESCRIPTIVE DATA

Resource No.	Field No.	Description	Age	Topographic Position	Elevation
5LR1117	CA-70	Two cisterns/troughs, a sluice, milled lumber	Unknown historic	Side slope of canyon	5960' (1817 m)
5LR11118	CA-71	Sheet metal shack and 2 auto engine blocks	Unknown historic	Canyon slope	5875' (1791 m)
5LR1119	CA-72	Stone and timber fence	Pre-1900	Canyon rim	6090-6250' (1856-1905 m)
5LR1120	CA-74	Log cabin and outhouse	Early twentieth century	Stream terrace in steep gulch	5700' (1737 m)
5LR1121	CA-75	Open pit mine and tailings	Unknown historic	Steep drainage slope	5840' (1780 m)
5LR1122	CA-73	Stone circle and open lithic scatter	Late Prehistoric	Upland terraces	5725' (1745 m)

TABLE IV  
(Continued)

CULTURAL RESOURCE DESCRIPTIVE DATA

Resource No.	Field No.	Description	Age	Topographic Position	Elevation
5LR1123	CA-76	Fort Collins Water Filtration Facility, 3 historical buildings and masonry canal	AD 1918-1987	Stream terrace in canyon	5374' (1638 m)
5LR1124	IF-1	White chert biface tip	Unknown prehistoric	Canyon slope	5720' (1744 m)
5LR1125	IF-2	Prospect pit	Unknown historic	Canyon rim	6000' (1829 m)
5LR1126	IF-3	Prospect pit	Unknown historic	Interior summit/ canyon rim	6135' (1870 m)
5LR1127	IF-4	Cast iron horseshoe	Unknown historic	Canyon rim	5710' (1741 m)
5LR1128	IF-5	Prospect pit	Unknown historic	Ridge spine on side slope	5800' (1768 m)

TABLE IV  
(Continued)

CULTURAL RESOURCE DESCRIPTIVE DATA

Resource No.	Field No.	Description	Age	Topographic Position	Elevation
5LR1129	IF-6	Side-notched quartz projectile point	Early Archaic	Flood terrace	5480' (1670 m)
5LR1130	IF-7	Chalcedony biface tip	Unknown prehistoric	Interior ridge top	5560' (1695 m)
5LR1131	IF-8	Prospect pit	Unknown historic	Steep ridge slope in side canyon	5780' (1762 m)
5LR1132	IF-9	Dry-laid field stone wall	Unknown historic	Drainage	5640' (1719 m)
5LR1133	IF-10	Prospect pit	Unknown historic	Ridge top	5840' (1780 m)
5LR1134	IF-11	Cairn	Unknown historic	Ridge crest	5850' (1783 m)

TABLE IV  
(Continued)

CULTURAL RESOURCE DESCRIPTIVE DATA

Resource No.	Field No.	Description	Age	Topographic Position	Elevation
5LR1135	IF-12	Utilized quartzite flake	Unknown prehistoric	Ridge top meadow	5640' (1720 m)
5LR1136	IF-13	Chert biface tip	Unknown prehistoric	Ridge top	5838' (1779 m)
5LR1137	IF-14	Collapsed foot bridge	Unknown historic	Intermittent drainage	5580' (1701 m)
5LR1138	IF-15	Dry-laid field stone wall	Unknown historic	Stream terrace	5560' (1695 m)
5LR1139	IF-16	Bifacially ground sandstone slab (incomplete)	Unknown prehistoric	Stream terrace	5560' (1695 m)
5LR1140	IF-17	Red chert tertiary flake	Unknown prehistoric	Canyon rim	5610' (1710 m)

TABLE IV  
(Continued)

CULTURAL RESOURCE DESCRIPTIVE DATA

Resource No.	Field No.	Description	Age	Topographic Position	Elevation
5LR1141	IF-18	Lavender chert tertiary flake fragment	Unknown prehistoric	Terrace on hill slope	5620' (1713 m)



## CHAPTER EIGHT

### RESULTS OF TEST EXCAVATIONS

SLR1098

#### Testing Rationale

Ninety-three cultural features comprise the surface component of this site. Most features are cobble and slab concentrations which appear intact and well preserved. Diagnostic artifacts collected from this site by Grant Jones, an amateur archaeologist, indicate that cultural components spanning the Paleo-Indian through Late Prehistoric periods are present. However, the site has been inundated by Seaman Reservoir for approximately six months of each year since 1952. While the surface component and material in Jones' collection indicated the site fulfilled National Register of Historic Places (NRHP) criteria, test excavations were necessary to determine conclusively whether undisturbed components were present.

#### Unit Placement

Five excavation units, ranging in size from 0.75 m X 1.50 m to 2.0 m X 2.0 m, were excavated into cobble concentrations (Features 12, 15, 91, 92, and 93) and surrounding areas. These features were chosen as the best examples of the various feature types that occur on the site. Two 0.50 m X 3.0 m trenches adjoining at right angles were excavated through Feature 26, a stone circle.

The surface component of the site is distributed over an area of approximately 3.41 acres with 4.0 m of vertical relief. Surface elevations of test units (TUs) range from 2.31 m below datum (TU 4) to 3.5 m below datum (TU 2). While unit placement did not sample the full range of site surface elevations, units were placed within the site's principal microtopographic features. These include a flat, relatively high terrace in the site's southeast quarter, a broad swale through the south-central portion of the site, a small but pronounced lobe in the southwest quarter, and a broad featureless terrace comprising the northern segment. Figure 9 (map pocket) illustrates test unit locations in relation to cultural features and surface contours.

#### Results

Stratigraphy: Soil textures and colors are quite homogeneous throughout the site (Figures 38, 39, 40). Stratum I is a light yellowish brown to reddish brown silty sand, varying in depth from approximately 25 to 75 cm below present ground surface (PGS). This stratum is thinnest within TU 5 near the site's western edge and is markedly thicker in other portions of the

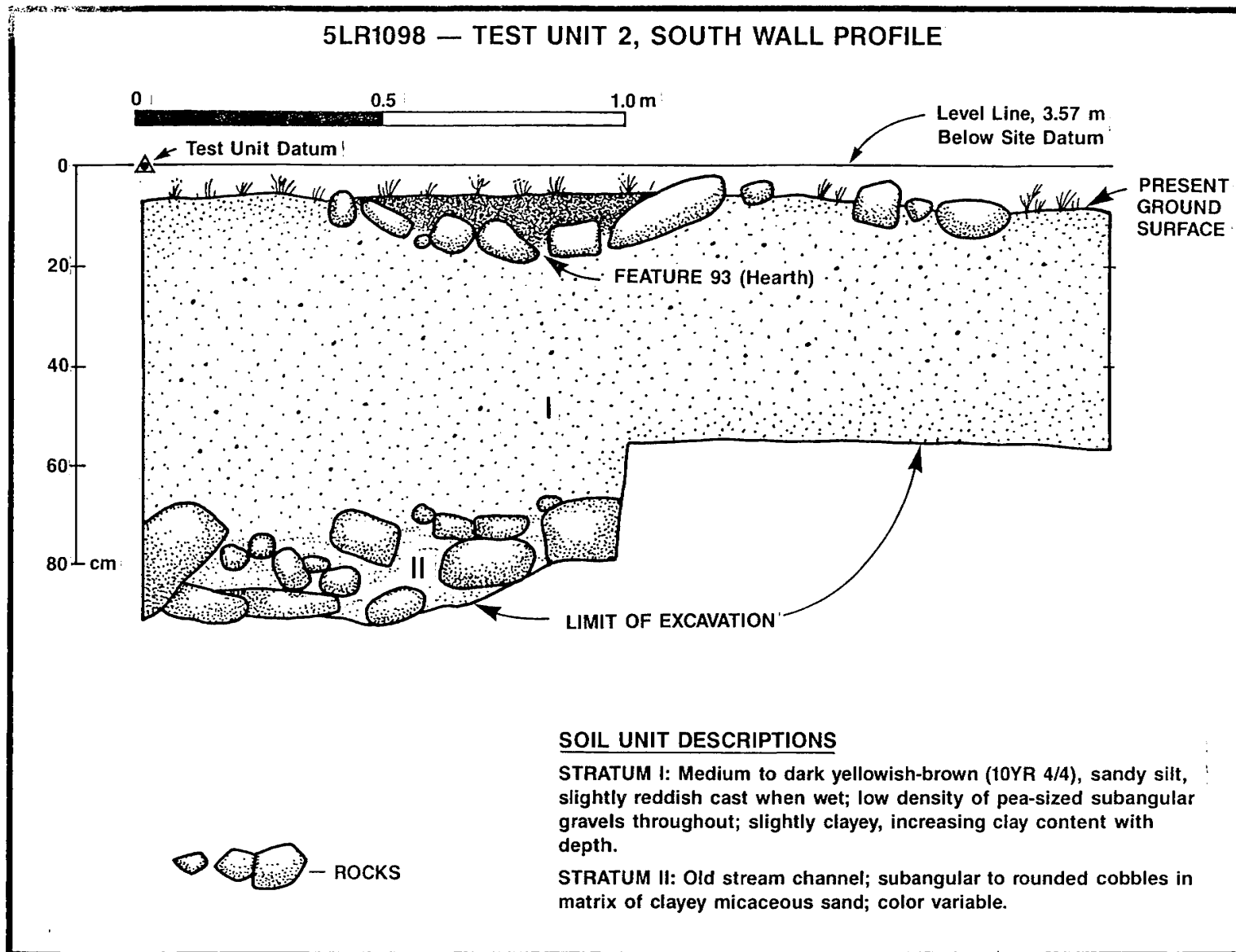


Figure 38. Site 5LR1098, profile of south wall of Test Unit 2.

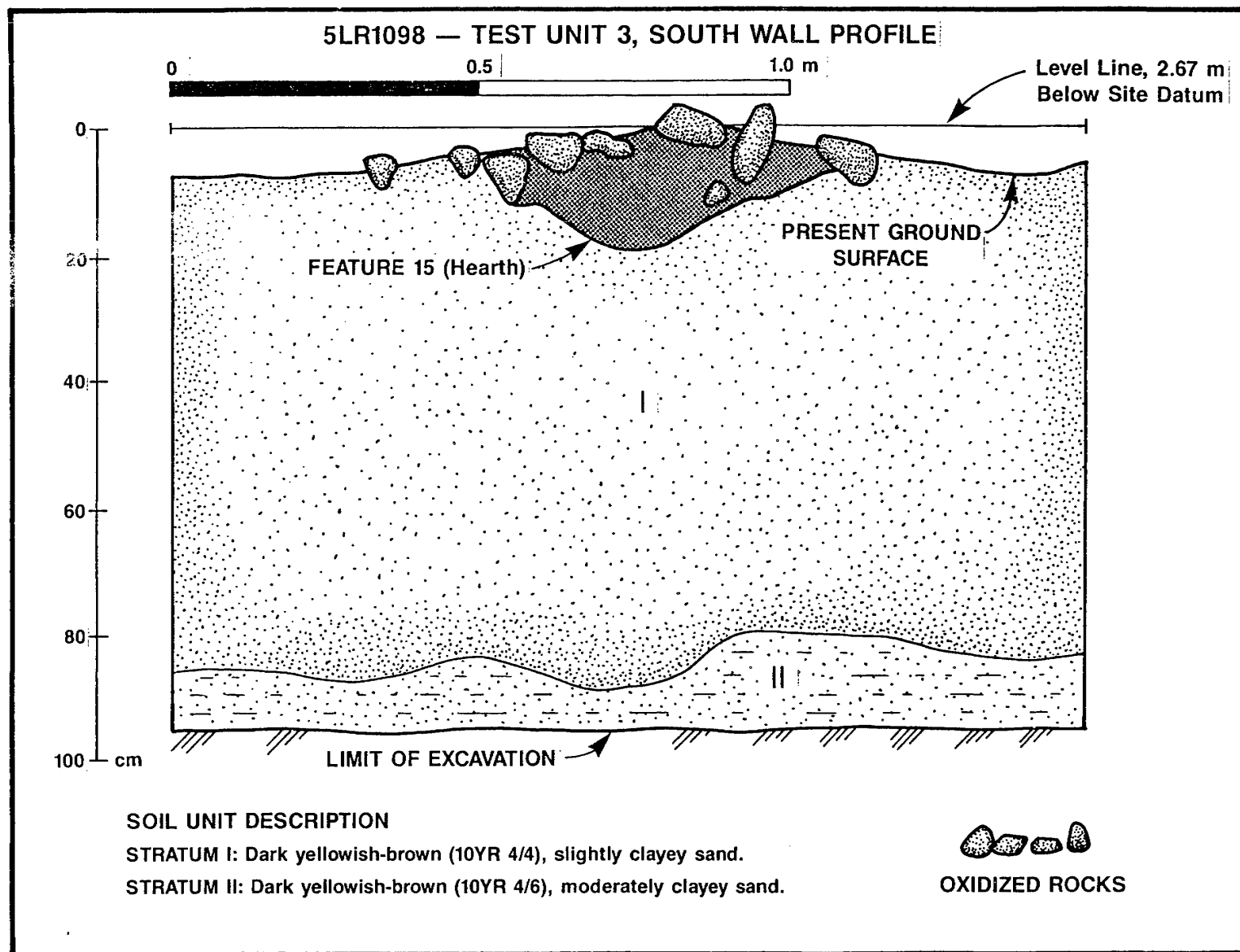
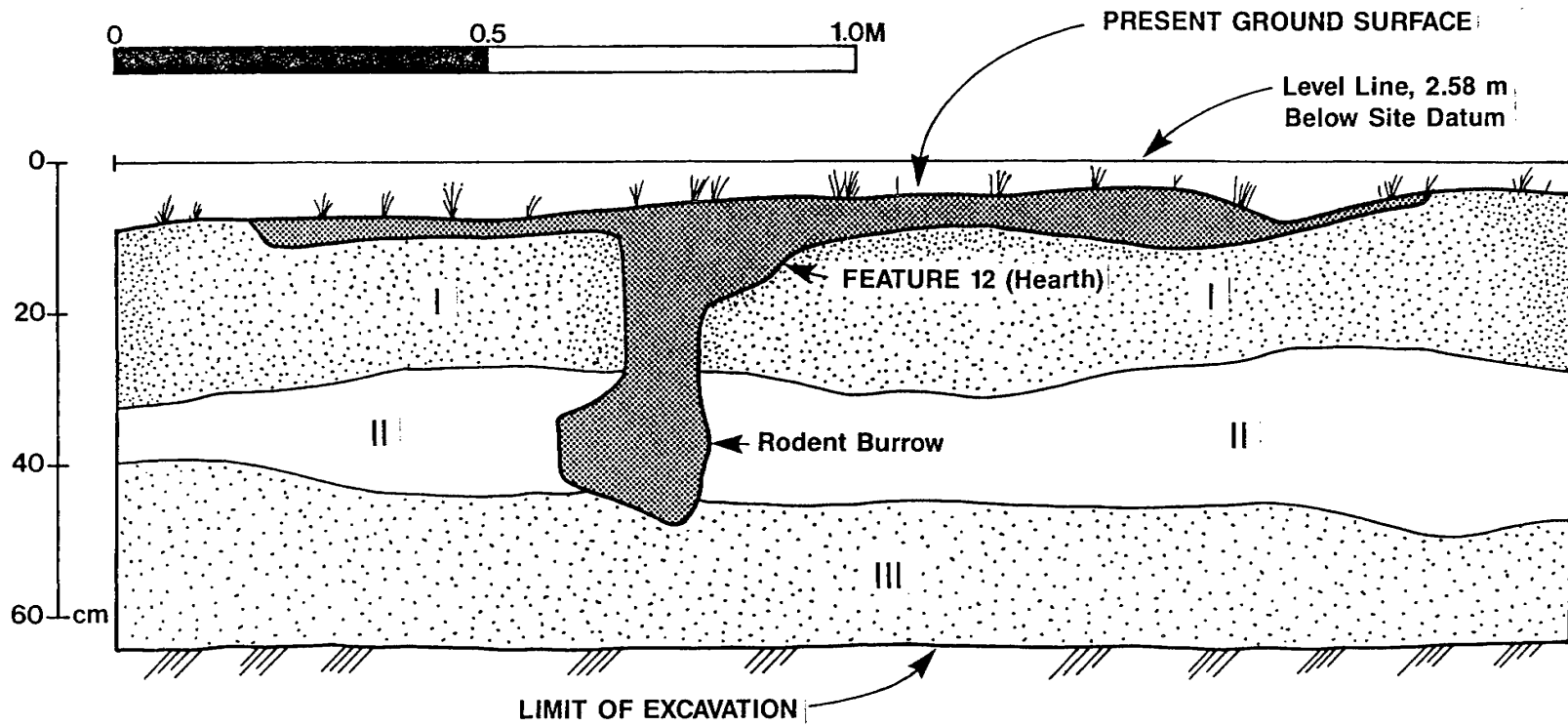


Figure 39. Site 5LR1098, profile of south wall of Test Unit 3.

5LR1098 — TEST UNIT 5, NORTH WALL PROFILE



**SOIL UNIT DESCRIPTION**

STRATUM I: Light brownish-gray (10YR 6/2) silty sand.

STRATUM II: Brownish-yellow (10YR 6/6) clayey sand.

STRATUM III: Dark yellowish-brown (10YR 4/6) clayey sand.

FEATURE 12: Black (10YR 2/1)

Figure 40. Site 5LR1098, profile of north wall of Test Unit 5.

site. Within TU 2, Stratum I extends from ground surface to 60 cm below PGS (3.67 m below datum) where it is replaced by a lens of alluvial boulders indicative of a former channel of the North Fork of the Cache la Poudre River (hereafter North Fork) (Figure 38).

Stratum II is slightly darker in color than Stratum I and contains a moderate amount of clay. The clay content of Stratum I increases gradually with depth, and the transition between Stratum I and Stratum II in all areas of the site is gradational rather than abrupt.

Within TU 3, probing indicated the presence of a former channel of the North Fork immediately below Stratum II at a depth of 98 cm below PGS (3.65 m below datum). Within TU 4, Stratum II extends from approximately 60 cm below PGS (2.91 m below datum) to the terminus of unit excavation at 1.70 m below PGS (4.01 m below datum). Within TU 5, on the western edge of the site, Stratum II attains a maximum thickness of approximately 25 cm (Figure 40).

Stratum III is characterized by a markedly greater clay content than Stratum II. This stratum was noted only within TU 5, where it extends from approximately 40 cm below PGS (2.98 m below datum) to the terminus of unit excavation at 70 cm below PGS (3.28 m below datum).

All artifactual materials were recovered from Stratum I. A fossilized tooth (5LR1098.39) recovered from Test Unit 4 at a depth of 1.18-1.22 m below PGS (3.49-3.53 m below datum) within Stratum II, has been identified as mammoth (Mammuthus sp.). The specimen's presence within this stratum indicates that Stratum II sediments probably predate human occupation of the site.

Cultural Features: Five cobbles concentrations (Features 12, 15, 91, 92, 93) were partially excavated. Two of these features (12 and 15) contained intact subsurface basins with organic fill.

Feature 12 is a circular cluster of large slabs and boulders, 1.70 m in diameter, with dark organic staining visible in the central portion. The feature's southern one-half was excavated within a 1 m X 2 m excavation unit (TU 5).

The excavated portion of Feature 12 yielded extensive deposits of charcoal and small amounts of unburned wood. Although the organic fill encompassed the entire south one-half of the feature, this material does not exceed 8 cm in depth within intact portions of the features. A rodent burrow in the approximate center of Feature 12 caused the organic fill to intrude into underlying strata within the south central portion of TU 5 (Figure 40). Charcoal from Feature 12 was radiocarbon dated at 570 ± 60 B.P.

Sixteen flakes were recovered in direct association with Feature 12. Ten of these are chert tertiary flakes and two are chert secondary flakes; one secondary and two tertiary chalcedony flakes and one quartzite tertiary flake were also recovered. The cherts vary in color from yellow to brick red, while the chalcedonies are milky to amber. The quartzite is gray. Also recovered in direct association with Feature 12 were an unusual ground quartzite cobble (5LR1098.24) and a quartz hammerstone (5LR1098.26).

Feature 15 is a slightly ovoid concentration of cobbles and slabs which measures approximately 110 cm X 80 cm. The northern one-half of this feature was excavated within a 0.75 X 1.50 m excavation unit (TU 3). The feature exhibits a well-defined charcoal- and cobble-filled basin with a maximum depth of 10 cm (Figure 39). The basin is markedly smaller than the overlying cobble and slab concentration. Charcoal from this feature was radiocarbon dated at 1080  $\pm$  80 B.P.

Thirteen flakes were recovered from the upper 20 cm of TU 3 in direct or indirect association with Feature 15. Eight of these are chert tertiary flakes and one is a chert primary flake; four chalcedony tertiary flakes were recovered. One unifacially utilized chalcedony tertiary flake (5LR1098.15) was recovered from Level 2 and the midsection of a large chert biface (5LR1098.17) was recovered from Level 3. Analysis (following chapter) indicates that the biface is associated with Feature 15. Lithic materials from this unit are similar in color range to those from TU 5, discussed above. An incomplete bifacially ground and pecked sandstone slab (5LR1098.23) was recovered among stones comprising the northern one-half of the feature.

Features 91 and 92 are cobble and slab concentrations similar to Feature 15. Feature 91 is the most poorly preserved of the tested features. The southeastern one-quarter of this feature was excavated within a 1.50 X 1.50 m excavation unit (TU 4). No evidence of subsurface cobbles or an associated basin were found. Two chert tertiary flakes and one chalcedony tertiary flake were recovered from the upper 10 cm of excavation.

Feature 92 is a cobble cluster approximately 1.0 m in diameter. The northern one-half of this feature was excavated within a 1.50 m X 1.50 m excavation unit (TU 1). The cobble concentration that comprises this feature is entirely surficial. Twelve flakes were recovered from the upper 10 cm of excavation within TU 1 in direct or indirect association with Feature 92. Four chert and four chalcedony tertiary flakes were recovered as well as two chert primary flakes, one chalcedony secondary flake, and a possible quartz tertiary flake. The blade of a small corner-notched projectile point (5LR1098.3) (following chapter) was recovered in possible association with Feature 92. Lithic materials are similar to those from other portions of the site.

Feature 93 is a circular enclosure of cobbles with an interior diameter of approximately 50 cm and an exterior diameter of 80 to 100 cm. An amorphous cluster of cobbles and slabs extends approximately 80 cm from the enclosure's western edge. The northern one-half of this feature was excavated within a 1 m X 2 m excavation unit (TU 2).

Excavation revealed a cobble lined basin approximately 10 cm deep within the interior of the enclosure (Figure 38). However, no distinct soil change was noted within the basin and no organic materials are present. The cobble and slab cluster comprising the feature's western portion is entirely surficial.

One quartzite tertiary flake, 14 chert tertiary flakes, and three chalcedony tertiary flakes were recovered from the upper 10 cm of TU 2 in possible association with Feature 93. Eleven flakes were recovered from Level 12 (10-20 cm) within TU 2. The materials' possible relationship to Feature 93 is uncertain. A blocky chert biface fragment (5LR1098.10) recovered from Level 4 (30-40 cm) of TU 2 is probably not associated with Feature 93.

Feature 26 is a stone circle approximately 3.80 m in diameter comprised by 46 cobbles and boulders (Figure 41). Two trenches 3 m long and 50 cm wide (TU 6a, b) were excavated through this feature. TU 6a extends due south from the center of the feature, and TU 6b extends due east from the same point (Figure 41). A 50-cm-square area at the intersection of the two trenches was removed as a fine screen sample.

Excavation of the upper 10 cm of TUs 6a and 6b recovered an unusually high density of lithic materials. Thirty-one flakes were recovered from the trenches and four from the fine screen sample. Fifteen of these are chert tertiary flakes, eight are chalcedony tertiary flakes, and 11 are quartzite tertiary flakes; one chalcedony primary flake was recovered. The majority of quartzite flakes are gold to crimson, while the cherts and chalcedonies are similar to those recovered from other portions of the site. A unifacially retouched chalcedony interior flake was also recovered.

Approximately the lower two-thirds of a side/corner-notched projectile point (5LR1098.32) was recovered from the northern segment of TU 6a, near the center of the stone circle at 4 cm below PGS. One fragment of a bifacially ground and pecked sandstone slab (5LR1098.31) was recovered from TU 6a approximately 50 cm south of 5LR1098.32 at 7 cm below PGS. Both artifacts were recovered in situ within the stone circle. A spent core of fine-grained gold quartzite was recovered among stones forming the feature's exterior southern edge at 10 cm below PGS (see discussion, following chapter).

Several subsurface stones were encountered in TUs 6a and 6b. The lower elevations of these stones range from 3 to 16 cm below PGS. Most subsurface stones originate at elevations ranging from

5LR1098 — FEATURE 26, PLAN VIEW

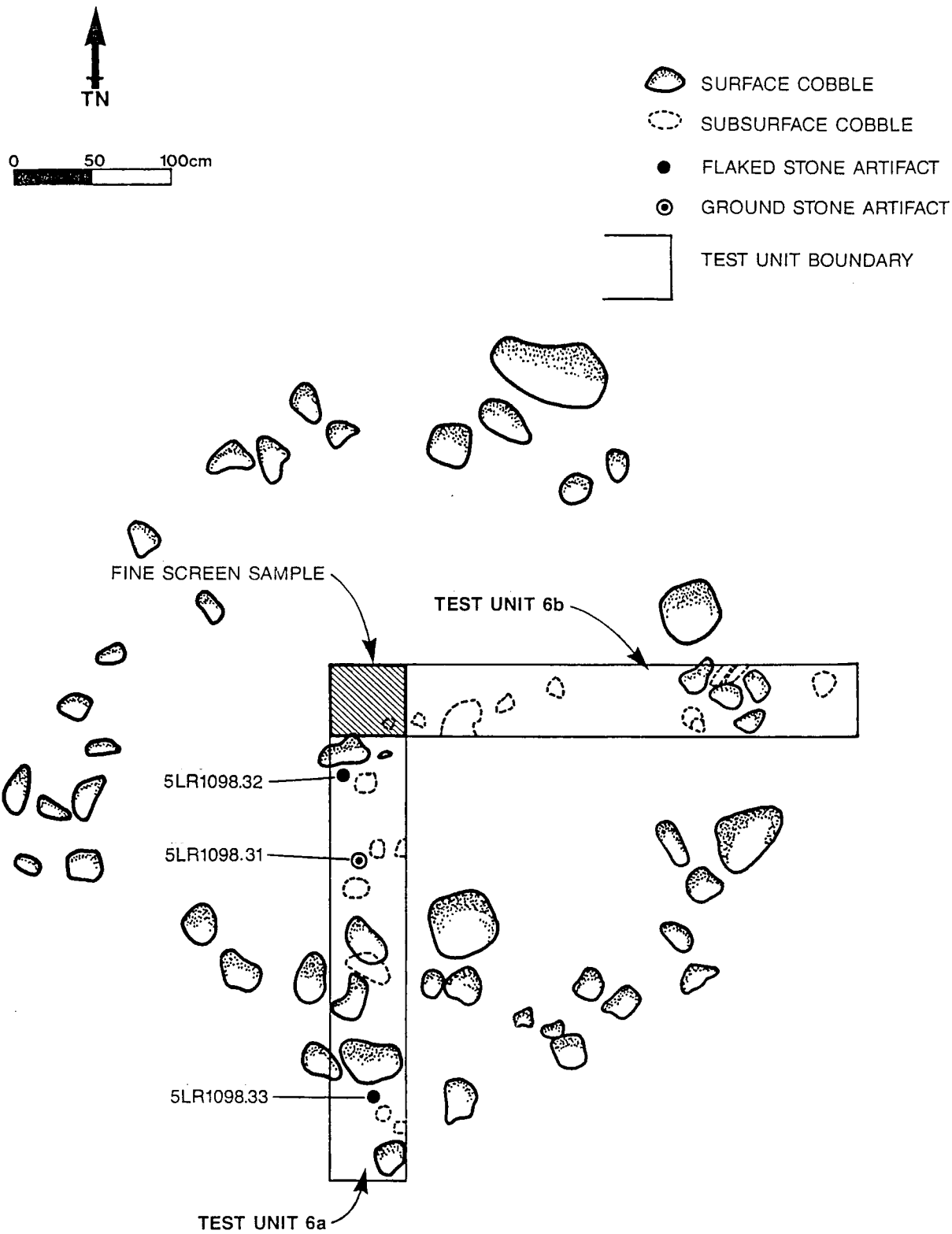


Figure 41. Site 5LR1098, plan map of Feature 26 (stone circle) and Test Units 6a and 6b.



5 to 9 cm below PGS. Some are obviously subsurface components of Feature 26 (Figure 41).

Artifacts Recovered:

Lithic Debitage: One hundred thirty-six pieces of lithic debitage were recovered from excavations. Chert is the dominant material type, comprising 59% (80) of the sample. Chalcedony comprises 28% (38) of the sample, and quartzite, 12% (17). One possible quartz flake (1%) was recovered. Tertiary flakes account for 91% (124) of the debitage. Primary and secondary flakes comprise 4% (5) and 5% (7), respectively, of the debitage. All lithic material collected from the site is similar to material found on prehistoric sites throughout northern Larimer County.

Utilized Flakes: Three utilized flakes (5LR1098.15, 27, 40) were recovered from excavations. 5LR1098.15 is a chalcedony tertiary flake marginally retouched on the dorsal surface along one straight edge. The retouched portion is 0.87 cm wide.

5LR1098.27 is a chert tertiary flake that exhibits crushing and attrition along one slightly convex edge. The utilized portion is 1.36 cm long.

5LR1098.40 is a chalcedony tertiary flake that is marginally retouched along one straight edge on the ventral surface. The retouched edge is steep, 1.42 cm long.

5LR1098.15 was recovered from level 2 of TU 3 in possible association with Feature 15. 5LR1098.27 is from Level 2 of TU 5 in possible association with Feature 12. 5LR1098.40 is from Level 1 of TU 6a within Feature 26, a stone circle. Table V below gives complete dimensions of retouched/utilized flakes.

TABLE V

DIMENSIONS OF RETOUCHE/UTILIZED FLAKES, 5LR1098

Specimen Number	Length	Width	Max. Thickness
5LR1098.15	1.95 cm	1.56 cm	0.30 cm
5LR1098.27	1.77 cm	1.20 cm	0.40 cm
5LR1098.40	1.42 cm	1.03 cm	0.70 cm

Core: One core (5LR1098.33) was recovered from the base of Level 1 in TU 6a. The specimen is of fine-grained gold quartzite

similar to material that is abundant on portions of the Pawnee National Grassland in western Weld County, Colorado. The core is six-sided and appears to have been reduced randomly. Maximum dimensions are 2.71 cm X 3.10 cm X 2.46 cm.

Bifaces: Two bifaces (5LR1098.10, .17) were recovered from excavations. 5LR1098.10 is probably the distal end of a blocky chert biface or preform. The specimen appears to have been thinned and shaped by percussion flaking and lacks edge retouch. Maximum width is 2.70 cm; maximum thickness is 1.04 cm; and the incomplete length is 2.27 cm. The specimen is from Level 4 of TU 2 and is not directly associated with other artifacts.

5LR1098.17 is the midsection of a large chert biface. It is biconvex in cross-section and exhibits both percussion flake scars and edge retouch. Maximum width is 2.09 cm; maximum thickness is 0.94 cm; and the incomplete length is 2.79 cm. It was recovered from Level 3 of TU 3 in association with five tertiary flakes, one of which is the same distinctive banded lavender chert. Tertiary flakes of this same unique chert were recovered from Levels 1 and 2 of TU 3. This trend suggests that 5LR1098.17 is associated with Feature 15, which originates in Level 2.

Projectile Points: Four incomplete projectile points were recovered from the site. Two (5LR1098.1, .2) are from the surface and two (5LR1098.3, .32) were recovered from excavations. 5LR1098.1 is the basal portion of a large side-notched projectile point with a concave base. It is manufactured from petrified wood. The blade remnant is asymmetrical and appears to have been resharpened. The specimen is difficult to assign reliably to any cultural or temporal episode. It exhibits characteristics similar to certain types which occur during the Early, Middle and Late Archaic periods. Without associated material it can only be assigned broadly to the Archaic stage.

5LR1098.2 is the basal portion of a reworked lanceolate projectile point. It is manufactured from possibly heat-treated petrified wood and exhibits parallel edges and a concave base. The edges and base are ground. The original flaking appears to have been in a parallel pattern with extensive basal thinning. The tool appears to have been broken and subsequently reworked along the distal 0.85 cm of the remaining portion. The specimen may be assigned morphologically to the Plano tradition of the late Paleo-Indian period.

Specimen number 5LR1098.3 is a portion of the blade and haft element of a small corner-notched projectile point. It is of red chert, and appears to have been manufactured from a tertiary flake with the dorsal surface extensively thinned and shaped and the ventral surface retouched only marginally along the blade edges. Flaking on the dorsal surface is slightly chevron-patterned. The blade is leaf-shaped with a tanged diagonal notch on one side. Morphology and manufacturing

attributes place this point generally within the Late Prehistoric stage, in the Plains Woodland (Early Ceramic) period. This item was recovered from Level 1 of TU 1 in association with Feature 92. Twelve pieces of debitage, none of which are the same material as the projectile point, were recovered from Level 1 of TU 1.

Specimen number 5LR1098.32 is approximately the lower one-third of a side/corner-notched projectile point. It is manufactured from fine-grained gray quartzite. The blade is apparently palmate, and notches are broad and nearly lateral; the stem is expanding with a convex base. Flaking on both blade surfaces is roughly parallel. The specimen is difficult to assign reliably to a specific cultural or temporal episode because it exhibits characteristics of projectile points occurring in both Late Archaic and Late Prehistoric contexts. This item was recovered from TU 6a at a depth of 4 cm below PGS within Feature 26, a stone circle. It is associated stratigraphically and spatially with a ground stone fragment (5LR1098.31) and 36 pieces of debitage, including one retouched flake (4LR1098.40). The specimen is indirectly associated with a quartzite core (5LR1098.33).

Dimensions and other projectile point data are given in Table VI.

TABLE VI  
PROJECTILE POINT DATA, 5LR1098

Specimen Number	Length	Width	Max. Thickness	Cross-section	Stage/Period
5LR1098.1	Incom.	3.35 cm	0.50 cm	Biconvex	Unknown Archaic
5LR1098.2	Incom.	2.53 cm	0.61 cm	Biconvex	Paleo-Indian (Plano)
5LR1098.3	Incom.	Incom.	0.32 cm	Plano-convex	Late Prehistoric
5LR1098.32	Incom.	1.82 cm	0.66 cm	Biconvex	Late Archaic or Late Prehistoric

Ground Stone: Three items of ground stone were recovered from excavations. Two of these (5LR1098.23, .31) are fragments of bifacially ground and pecked sandstone slabs and one (5LR1098.24) is an edge-ground quartzite cobble.

Specimen number 5LR1098.23 was recovered from stones comprising the southern one-half of the surface of Feature 15. It is manufactured from medium-grained sandstone that is discolored by oxidation. Both ground surfaces are flat and appear heavily utilized. Maximum dimensions are 10 cm X 5.70 cm X 3.85 cm thick.

Specimen number 1098.31 was recovered from TU 6a at a depth of 7 cm below PGS within Feature 26, a stone circle. It is manufactured from fine-grained pinkish-gray sandstone. One ground surface has exfoliated extensively; the reverse surface is intact. The intact ground surface is flat and appears to have been utilized heavily. Maximum dimensions are 11.60 cm X 7.50 cm X 2.25 cm thick.

Specimen number 1098.24 is an ovoid quartzite mano that is ground on a portion of one edge and exhibits slight battering on both ends. One surface appears polished and the opposite surface appears pecked. It was recovered from the surface of TU 5, 20 cm south of Feature 12. The ground portion of the cobble forms a flat facet 4.50 cm long and 1.25 cm wide at the widest point on one edge. Both ends of the cobble exhibit flat facets that are ovoid in outline and approximately 1.65 cm long and 1 cm wide at the widest points. One surface of the cobble is extremely smooth and may be polished. The opposite surface has been lightly pecked, but no grinding is discernible.

Hammerstone: One hammerstone (5LR1098.26) was recovered from Level 1 of TU 5. The specimen is an irregularly shaped quartz cobble that exhibits localized battering and crushing on portions of three edges. It is associated indirectly with specimen number 5LR1098.24, described above, and 16 pieces of debitage recovered from the same level of TU 5. It may be associated with Feature 12. The cobble is 11 cm long, 9.50 cm wide, and varies in thickness from 3.70 cm to 5.50 cm.

### Interpretation

Diagnostic artifacts comprising the Grant Jones collection (Figures 14 and 15, Chapter 7) and those recovered during recording and test excavations by Centennial Archaeology, Inc. indicate that occupation of the site spans the middle portion of the Paleo-Indian stage through the Late Prehistoric stage. However, the vertical frequency distribution of artifacts from test units suggests the presence of a single cultural stratum. Vertical artifact distribution is illustrated by a bar chart in Figure 42. In this illustration each bar represents the total number of artifacts recovered from 10 cm arbitrary levels within

TUs 1-5. Data from TUs 6a and 6b are omitted since only one arbitrary level was excavated in those units.

As Figure 42 illustrates, the vertical frequency distribution of artifacts from TUs 1-5 is unimodal and heavily skewed to the left. Seventy-eight percent (89) of the artifacts from these units were recovered from the upper 20 cm of sediments and 98% (108) were recovered from the upper 30 cm of sediments. However, since none of the excavated features originates at depths greater than 20 cm below PGS, it is possible that all in situ material is confined to the upper 20 cm of sediments.

Several natural factors may account for the occurrence of artifacts at depths greater than 20 cm. Since construction of Seaman Reservoir in the 1950s, annual variations in the water level have resulted in tremendous fluctuations in the moisture content of site sediments. During late winter and spring soils on site are usually saturated with moisture, but by late summer these sediments are devoid of moisture other than incidental rainfall. Expansion and contraction of sediments in response to these changes in moisture content could have a marked effect on the locations of objects in the soil.

The frequency of crayfish burrows observed in excavation units is another important factor in the natural displacement of artifacts. Each test unit exhibited numerous crayfish burrows ranging from approximately 1.25 cm to 4.0 cm in diameter. The crayfish burrows extend from the present ground surface to depths of more than one meter. Small objects in the soil could be transported significant distances vertically through these burrows.

Downward displacement of artifacts from relatively intact deposits within the upper 10-20 cm of sediments is also suggested by the vertical distribution of flakes associated with a biface fragment (5LR1098.17) from TU 3. The biface fragment, which occurred within Level 3, was manufactured from a distinctive banded lavender chert. Tertiary flakes of the same material, which do not occur elsewhere on site, were recovered from Levels 1-3 of TU 3. The vertical distribution of all artifacts from TU 3 resembles the overall distributional pattern illustrated in Figure 42.

These factors indicate that while several temporally divergent components may be present, they are compressed vertically onto a single elevational plane. The most feasible explanation for this vertical compression is the occurrence of an extensive but low-energy degradational episode subsequent to the deposition of most artifacts and features. Such a degradational event (or events) would have transported smaller soil aggregates from the site, undermining larger objects which would have settled on a common erosional surface.

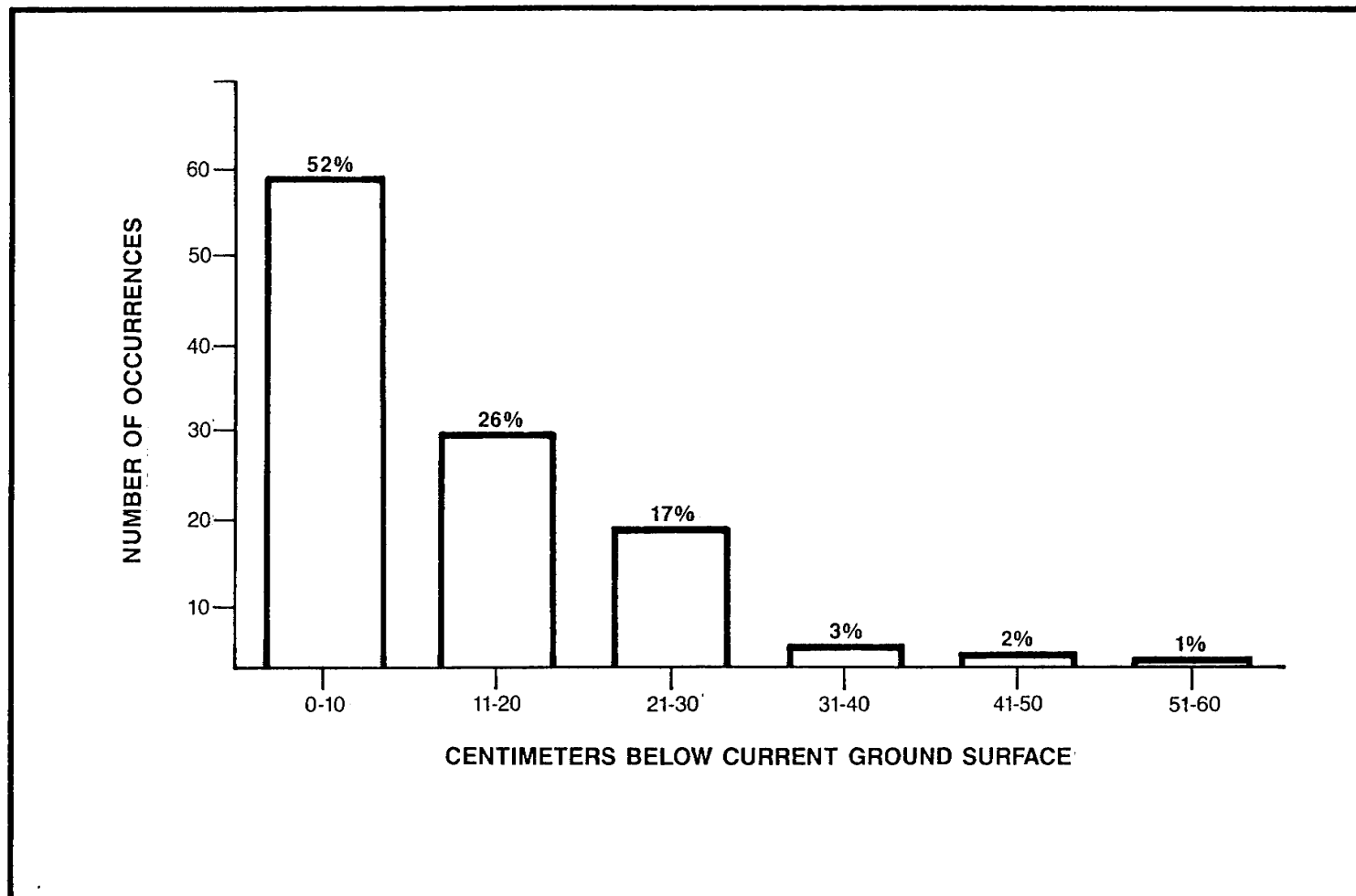


Figure 42. Site 5LR1098, bar chart showing vertical distribution of artifacts from test units.

Despite the apparent lack of stratigraphic integrity, several factors indicate that the site is spatially intact. While the vertical artifact distribution is strongly unimodal, the lateral distribution of artifacts is multimodal. This distributional pattern is shown by a bar chart in Figure 43. In this illustration each bar represents the total number of artifacts recovered from Level 1 of TUs 1-6a-b. The horizontal axis in this illustration represents cubic centimeters of earth excavated from Level 1 of each test unit.

Three test units (2, 3 and 5) yielded artifact frequencies that are nearly proportional to the volume of excavation. TU 3, which represents 9% of the total volume of excavation within Level 1, yielded 7% of the total artifact count from that level. Similarly, TUs 2 and 5, each of which represent 16% of the total volume of excavation within Level 1, yielded 18% and 17%, respectively, of the total artifact count from Level 1. However, TU 4, which represents 17% of the total volume of excavation within Level 1, yielded only 3% of the total artifact count from that level. Conversely, TU 6a, which represents 14% of the total volume of excavation within Level 1, yielded 27% of the artifacts from that level. The combined volumes of TUs 6a and 6b and the 50 cm<sup>2</sup> fine screen sample, all of which are located within Feature 26, account for 25% of the total volume of excavation and 40% of the total artifact count from Level 1.

This trend indicates that artifacts cluster strongly in certain portions of the site and occur sparsely in others. The uneven artifact distribution suggests that activity loci comprising the various temporal components are areally intact. Differences in artifact frequencies associated with tested features may reflect cultural/temporal differences, variation in feature function, differences in season of occupation, or a combination of these factors.

Areas of relatively high artifact frequencies may also indicate components which post-date the degradational episode responsible for the loss of stratigraphic integrity. Feature 26, the stone circle associated with a markedly higher artifact frequency than occurs elsewhere in the site, may represent one such component. Grant Jones, who has surface collected the site since 1976, reports never having found surface material associated with the stone circles and corroborates this possibility. The fact that all Paleo-Indian and Early Archaic materials were found on the site surface, while the two diagnostic projectile points recovered from test excavations probably represent Late Prehistoric material, may also be significant in this respect.

Of the six cultural features that were partially excavated during site testing, Feature 26, a stone circle, is the most interesting. Results suggest that this feature represents remains of a domestic structure with remnants of an interior habitation surface.

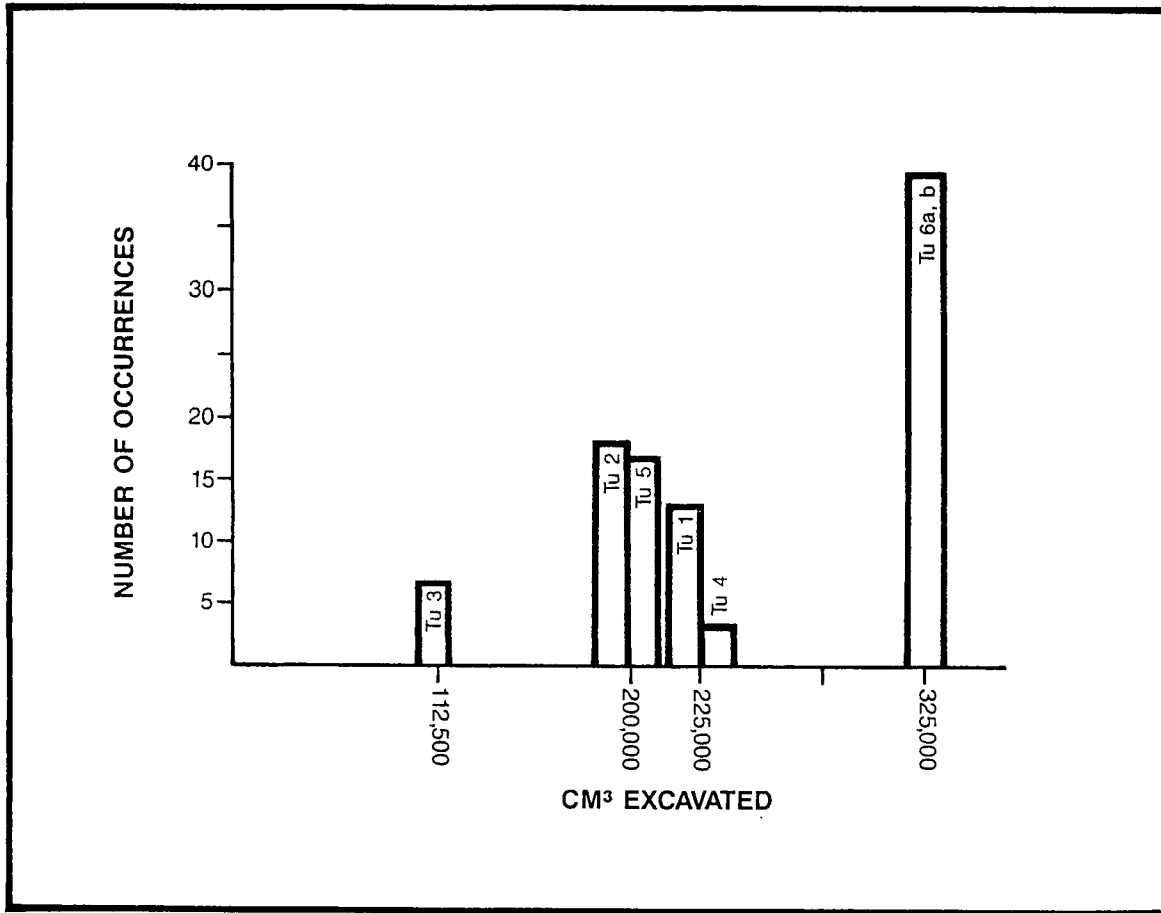


Figure 43. Site 5LR1098, bar chart showing artifact densities in individual test units.



Feature 26 is set apart from the other tested features not only by morphological differences and frequencies of associated artifacts, but by the relative proportions of associated lithic material types. As Table VII illustrates, 65% of all flaked stone artifacts recovered from TUs 1-5 are manufactured from chert and 6% of all flaked stone artifacts from those test units are manufactured from quartzite (see also Table VIII). The proportional occurrences of both material types among flaked stone artifacts recovered from TUs 6a-b and the 50 cm<sup>2</sup> fine screen sample within Feature 26 differ markedly from TUs 1-5. Thirty-eight percent of the flaked stone artifacts associated with Feature 26 are manufactured from chert and 36% are manufactured from quartzite. There is no significant difference in the proportional occurrence of chalcedony artifacts. Since artifacts recovered from TUs 6a-b and the 50 cm<sup>2</sup> fine screen sample represent 40% of the entire assemblage, these differences probably are not a reflection of proportionally inadequate sampling within Feature 26. These proportional differences in lithic material types may reflect changes in lithic procurement patterns and/or cultural preferences.

The effects of erosion and the consequent settling of artifacts and features on a common elevational plane cause the site to appear extensive and dense (Figure 44). However, the combination of a unimodal vertical distribution and multimodal lateral distribution of artifacts suggests that the site may actually represent numerous small loci that have accreted through time. This is further suggested by the results of surface trend analysis illustrated in Figure 45. In this illustration contour lines superimposed on a plan view of the site correspond to the frequency of cultural features per 40 m<sup>2</sup> cells. The resulting configurations indicate as many as seven small discrete clusters of features. The data currently available are inadequate to assess whether these clusters correspond to temporal/cultural components.

The artifact assemblage recovered from the site as a whole indicates a diverse range of activities. Several additional factors indicate intensive and possibly semi-permanent habitation through time. The high frequency of Paleo-Indian and Early Archaic projectile point bases and the absence of blade elements suggests that nonexpedient tasks, such as replacing broken projectiles on foreshafts or darts, were conducted at the site. The high frequency of ground stone artifacts is another indication of intensive occupation.

TABLE VII

PROPORTION OF MATERIAL TYPES AMONG ALL FLAKED STONE ARTIFACTS,  
TEST UNITS 1-5 AND 6a-b, SLR1098

Test Unit	Chert	Chalcedony	Quartzite	Total	
TU 1-5	68 (67%)	28 (27%)	6 (6%)	102 (72%)	
TU 6a-b	15 (38%)	10 (26%)	14 (36%)	39 (28%)	
TOTALS	83 (59%)	38 (27%)	20 (14%)	141 (100%)	
1 (0-10 cm)	38 (38%)	14 (14%)	2 (2%)	0	54 (54%)
2 (10-20 cm)	16 (16%)	10 (10%)	4 (4%)	0	30 (30%)
3 (20-30 cm)	7 (7%)	4 (4%)	0	1	12 (12%)
4 (30-40 cm)	2 (2%)	0	0	0	2 (2%)
5 (40-50 cm)	2 (2%)	0	0	0	2 (2%)
TOTALS	65 (65%)	28 (28%)	6 (6%)	1 (1%)	99 (100%)

TABLE VIII

DISTRIBUTION OF LITHIC DEBITAGE BY MATERIAL TYPE AND LEVEL,  
TEST UNITS 1-5, SLR1098

Level	Chert	Chalcedony	Quartzite	Other	Total
1 (0-10 cm)	38 (38%)	14 (14%)	2 (2%)	0	54 (54%)
2 (10-20 cm)	16 (16%)	10 (10%)	4 (4%)	0	30 (30%)
3 (20-30 cm)	7 (7%)	4 (4%)	0	1	12 (12%)
4 (30-40 cm)	2 (2%)	0	0	0	2 (2%)
5 (40-50 cm)	2 (2%)	0	0	0	2 (2%)
TOTALS	65 (65%)	28 (28%)	6 (6%)	1 (1%)	99 (100%)

Figure 44

(1 page)

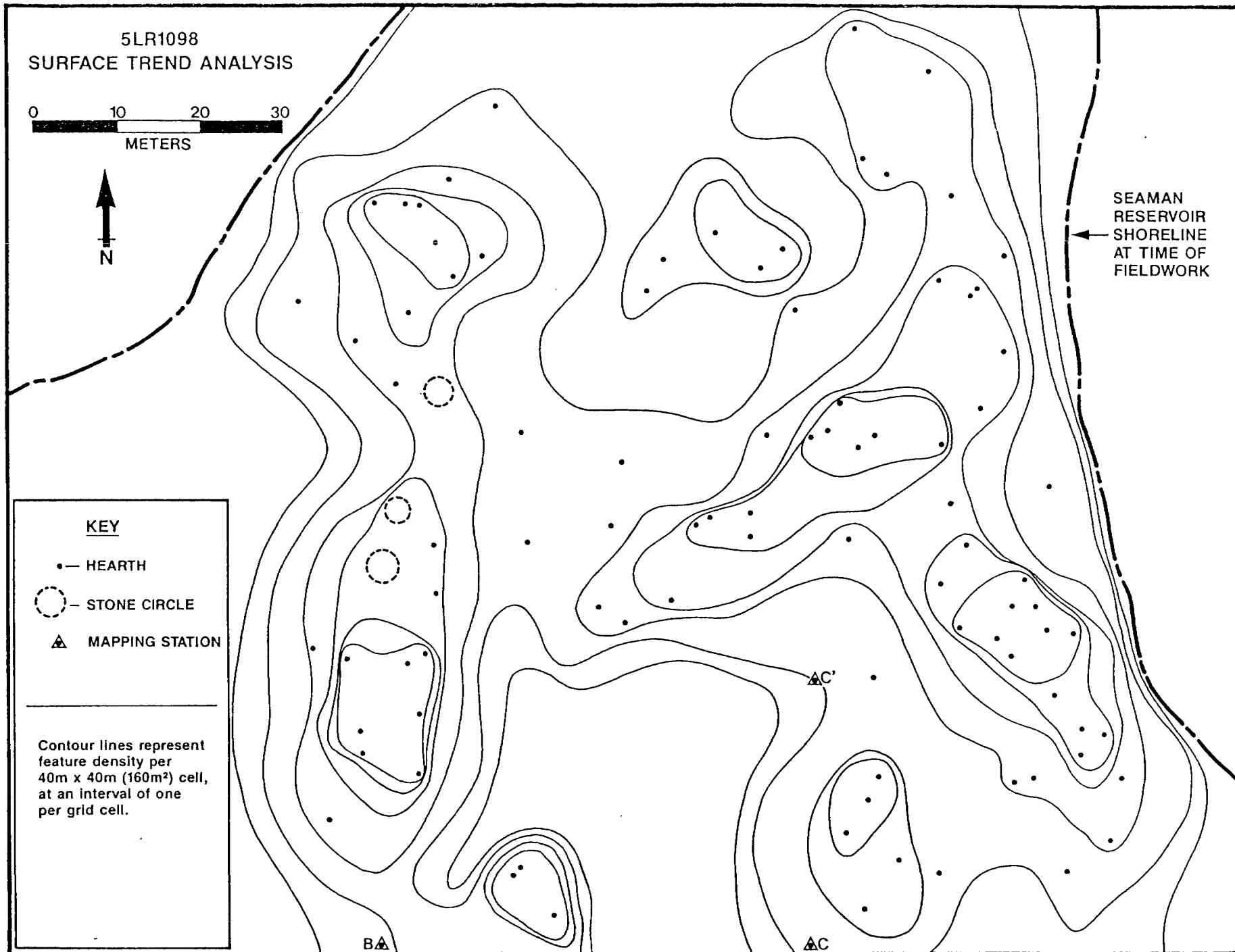


Figure 45. Site 5LR1098, surface trend analysis based on frequency of cultural features per 40m<sup>2</sup> grid cells.

## Summary and Conclusion

Stratigraphic and archaeological evidence suggest that site 5LR1098 represents numerous activity loci which through time accumulated within the site area. The site appears to have been subjected to at least one extensive but low-energy erosional event. This resulted in the settlement of artifactual materials comprising the various loci on a common erosional surface. Certain of the site's components may have been deposited after the erosional event. This appears to be true of the stone circle (Feature 26).

Despite the lack of stratigraphic integrity, the site's various activity loci appear spatially intact. The compression of various components onto a common level, through low-energy erosion, resulted in lateral separation rather than vertical stratification of disparate components.

An undetermined number of hearth-type features at the site contain shallowly buried intact basins with organic fill. Two such features (12 and 15) yielded charcoal and organic material suitable for radiocarbon age estimates and investigation of subsistence patterns. Further, at least one stone circle appears to contain an intact occupational level.

## 5LR1099

### Testing Rationale

Test excavations at nearby site 5LR1098 indicated that stone circles on that site contain a high density of apparently undisturbed cultural materials. Because site 5LR1099 occurs in essentially the same environmental setting, it seemed likely that Feature 2, an unusual stone enclosure, might contain similar materials. Since the other components of site 5LR1099 did not appear to warrant consideration for NRHP nomination, test excavation of Feature 2 was necessary to determine conclusively whether the site contained significant archaeological components.

### Unit Placement

One 3 m X 50 cm excavation unit (TU 1) was excavated within Feature 2. This unit, oriented north/south, approximately bisects the stone enclosure. Approximately 50 cm on the extreme northern and southern ends of the test unit are located outside the stone enclosure; the remainder of the unit is within the feature (Figure 46).

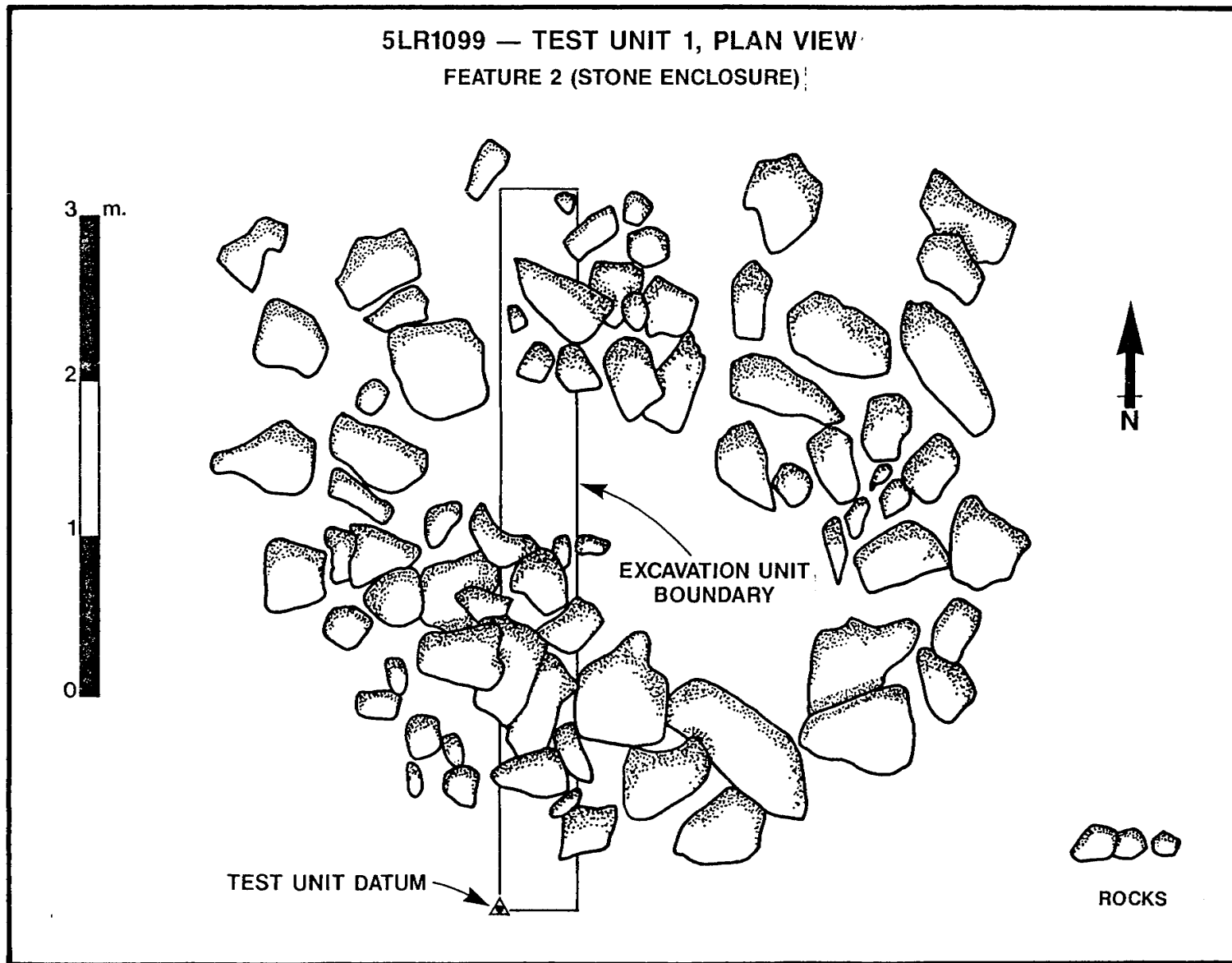


Figure 46. Site 5LR1099, plan map of Feature 2 (stone enclosure) and Test Unit 1.

## Results

Subsurface slabs and boulders, comprising portions of the north and south enclosure walls, extend to a depth of approximately 15 cm below PGS. Soils within and surrounding the enclosure are a homogenous dark brown sandy to silty loam. Two heavily oxidized cut nails were recovered among stones making up the north enclosure wall at a depth of 12 cm below PGS. No other cultural materials were recorded. Excavation was terminated at 30 cm below PGS.

## Interpretation

Testing indicates that Feature 2 is a remnant of a crude historic structure. A scatter of wood-burning stove parts and a shovel blade noted on the surface adjacent the feature may be directly associated with the stone enclosure. The exact function of the enclosure is unknown, but it seems likely that it is a remnant of a temporary shelter used during open range ranching activities.

SLR1102

## Testing Rationale

Shovel probes excavated within the rock shelter situated at the western edge of the site led to recovery of several buried, spirally fractured large mammal bone fragments, charcoal and ash, and one chalcedony flake, from depths of 20-30 cm below PGS. Formal test excavations were conducted to determine the vertical and horizontal extent of buried cultural deposits within the rock shelter.

## Unit Placement

Three 1 m X 1 m test units were excavated (Figure 47). TU 1 is located directly below the dripline near the center of the rock shelter. This test unit was placed adjacent to Shovel Probe #2, from which the greatest quantities of burned bone and charcoal were recovered. TU 2 is located 6 m west of TU 1. This unit was excavated to determine whether cultural deposits extended a significant distance beyond the rock shelter dripline. TU 3 was placed near the southern end of the shelter. This unit was excavated to assess the potential areal extent of cultural deposits within the shelter and to determine whether geologic strata within the rock shelter are consistent throughout the site area.

## Results

Stratigraphy: Four geologic strata were identified within TU 1. Stratum I, the uppermost, is a grayish-brown sandy loam with a high frequency of angular pea-size gravels. It varies in thickness from approximately 9-15 cm.

Stratum II is a yellowish-brown sandy loam with a high frequency of angular gravels smaller than those characteristic of Stratum I. Stratum II attains a maximum depth of 22 cm below PGS; average thickness of the stratum is 6 cm.

Stratum III is a dark grayish-brown loamy clay with numerous inclusions of large granitic slabs and angular boulders. This stratum dips sharply in the eastern one-half of TU 1, attaining a maximum depth of 60 cm below PGS.

Stratum IV is a light yellowish-brown sandy loam with a high frequency of pea-size angular gravels. This stratum was encountered at a depth of 31 cm below PGS in the western one-half of the unit and dips sharply in the eastern one-half of the unit to a depth of 60 cm below PGS. Excavation of TU 1 was terminated at 60 cm below PGS due to the presence of angular slabs too large to be removed without significant widening of the unit.

The upper four strata of TU 3 (Figure 48) are identical to Strata I-IV in TU 1. As in TU 1, angular granitic slabs are encountered within Stratum IV. However, the slabs in TU 3 are smaller than those in TU 1 and excavation proceeded below this level. Stratum IV terminates at 91 cm below PGS within TU 3.

Stratum V is a light grayish-brown sandy loam with a high frequency of pea-size gravels. Average thickness of this stratum is approximately 20 cm. Stratum V attains a maximum depth of 117 cm below PGS.

Stratum VI is a light grayish-brown clayey sand with markedly fewer gravels than the overlying stratum, and a high frequency of charcoal granules. This stratum attains a maximum depth of 165 cm below PGS.

Stratum VII is texturally similar to Stratum VI, but is darker in color and contains markedly less charcoal. The basal depth of this stratum is unknown. Excavation of TU 3 was terminated at 190 cm below PGS because further excavation would have required widening the unit.

Cultural materials were recovered from arbitrary levels 2-5 of TU 1. These levels encompass all of Stratum II, much of Stratum III, and small portions of Strata I and IV. The greatest density of artifacts occurs in Level 4 within Strata III and IV, while the greatest volume of faunal material was recovered from Level 2 within Stratum III. Faunal materials occur also in Level 6, Stratum IV.



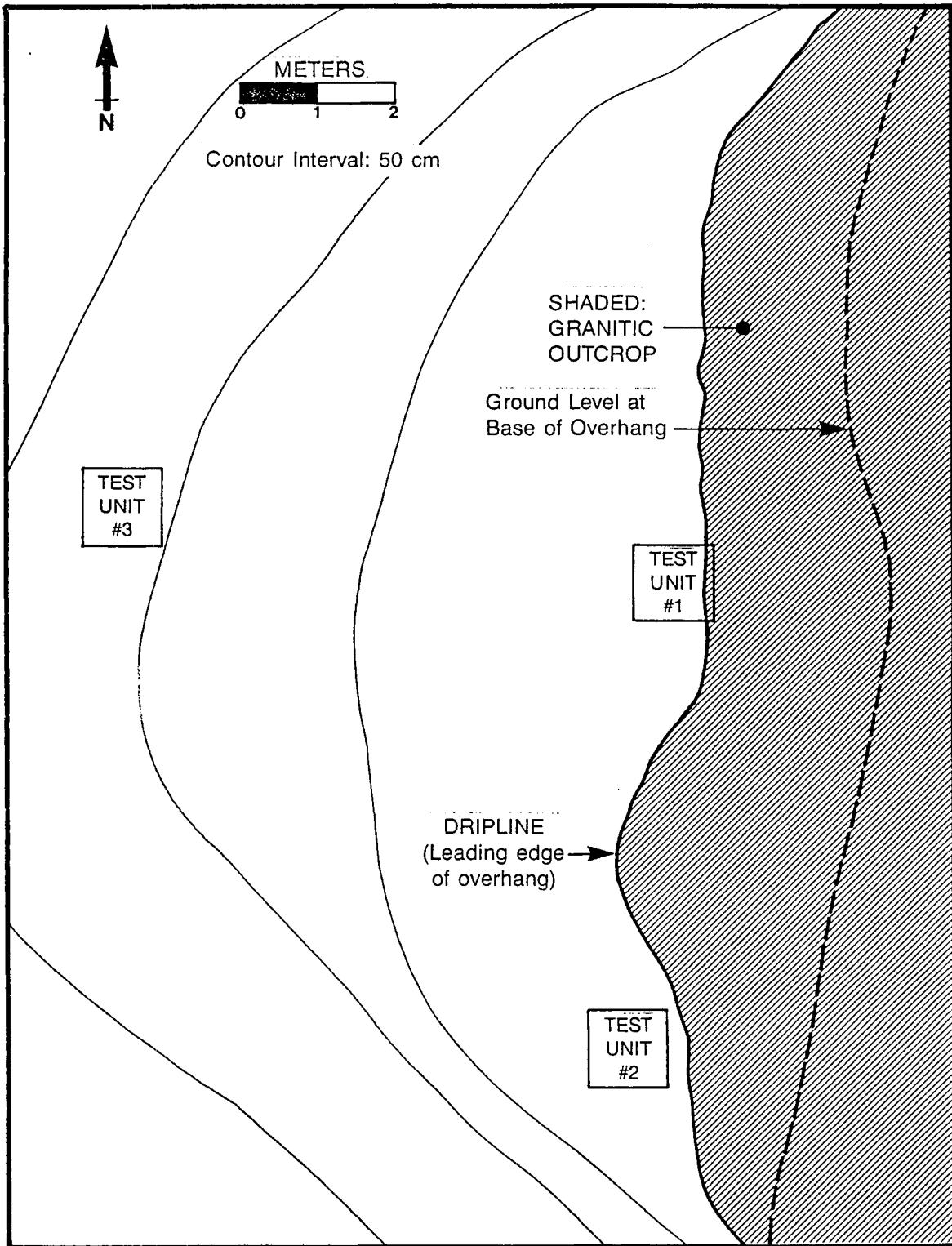


Figure 47. Site 5LR1102, plan map of rock shelter showing test unit locations.

5LR1102 — TEST UNIT 3, SOUTH WALL PROFILE

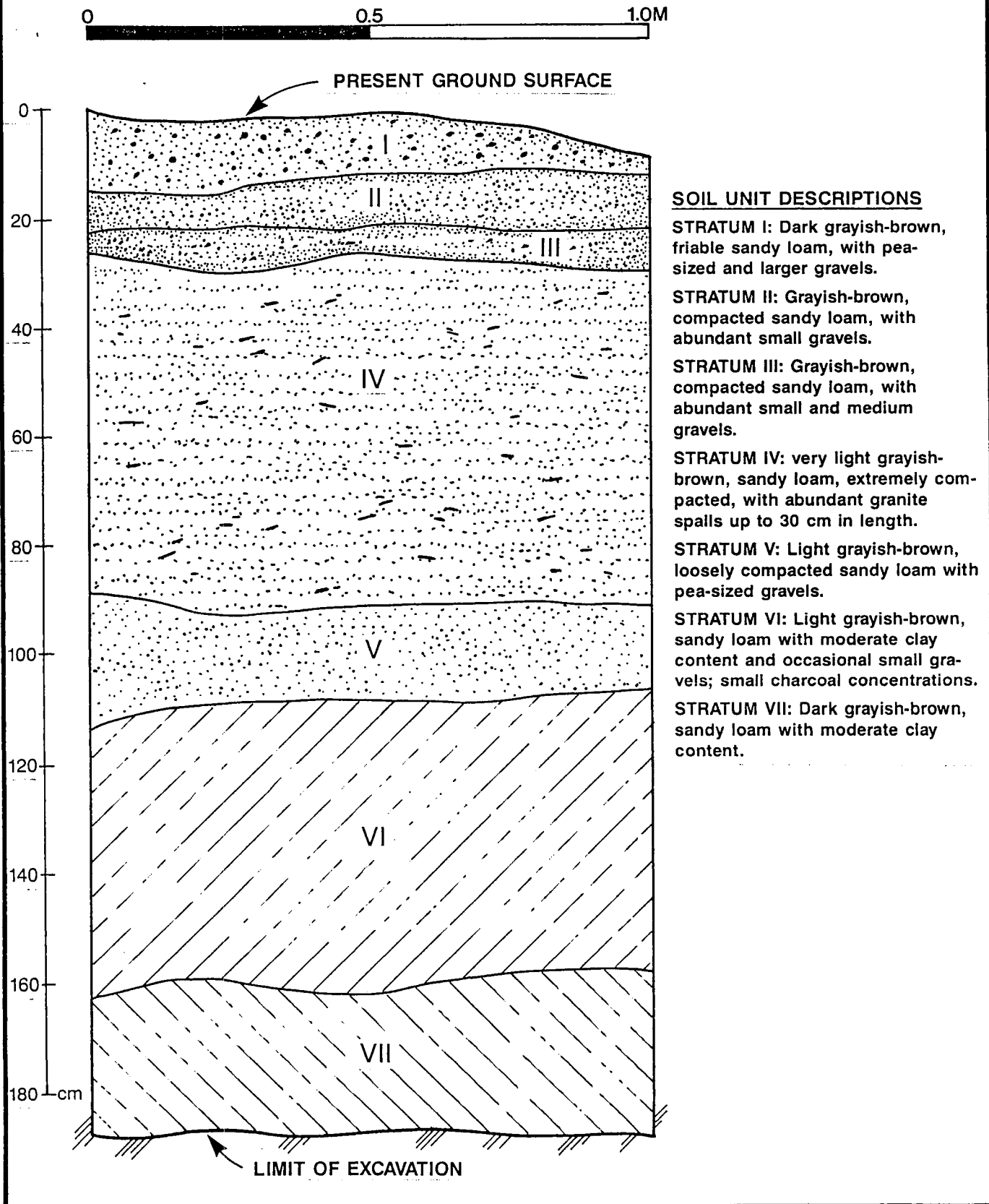


Figure 48. Site 5LR1102, profile of south wall of Test Unit 3.

All cultural material recovered from TU 3 occurs in arbitrary levels 12-17 and is clearly confined to Stratum VI. Although a single hammerstone was recovered from Level 17 within Stratum VII, this artifact may have been intrusive or may have been scraped from the unit wall within Stratum VI. (Excavation of the lower levels of TU 3 became increasingly difficult owing to the depth and narrowness of the test unit.)

Artifacts Recovered: Thirty-four artifacts, 26 of which are pieces of lithic debitage, were recovered from test excavations. Fourteen items are from TU 1 and 20 are from TU 3. As noted above, all artifacts from TU 2 were recovered from arbitrary levels 12-17 at depths of 111 to 170 cm below PGS.

Lithic Debitage: Twenty-six pieces of debitage were recovered. Thirteen of these (50%) are quartzite, 10 (38%) are chert and three (12%) are chalcedony. The distribution of lithic material types is not consistent within TUs 1 and 3. Within TU 1, 75% (6) of the flakes are chert and the balance (2) are chalcedony. Within TU 3, 72% (13) of the flakes are quartzite, 22% (4) are chert, and one is chalcedony. This trend is represented graphically by frequency histograms in Figure 49.

Tertiary flakes account for 88% (23) of the total flake sample and for 100% of the quartzite and chalcedony flakes. Seventy percent (10) of the chert flakes are tertiary, 20% (2) are secondary; one chert primary flake was recovered.

Core: One exhausted chert core (5LR1102.10) was recovered from Level 2 of TU 1. The specimen appears to be a small river cobble that was randomly reduced. It is heavily crazed. Maximum dimensions are 5.45 cm X 2.70 cm X 2.50 cm.

Biface Fragment: One biface fragment (5LR1102.9) was recovered from Level 2 of TU 1. It is a blade fragment and is too incomplete to allow determination of overall size or morphology. It is manufactured from red, probably heat-altered chert and is crazed. Maximum thickness is 0.43 cm; the incomplete length is 2.26 cm; and the incomplete width is 1.80 cm.

Projectile Points: Two projectile points (5LR1102.8 and 5LR1102.13) were recovered from TU 1. Specimen 5LR1102.8 is a small triangular corner-notched projectile point manufactured from white chert. It was recovered from Level 2 of TU 1 and is directly associated stratigraphically with a biface fragment, an exhausted core (5LR1102.10), a granitic mano (5LR1102.30), and burned and unburned deer and bison bone. The specimen is incomplete and heavily spalled and crazed, indicating it was thermally altered after manufacture. It belongs morphologically to the small corner-notched projectile point tradition of the Late Prehistoric stage. It is 2.10 cm long; the incomplete width is 1.04 cm; and the incomplete thickness, 0.30 cm.

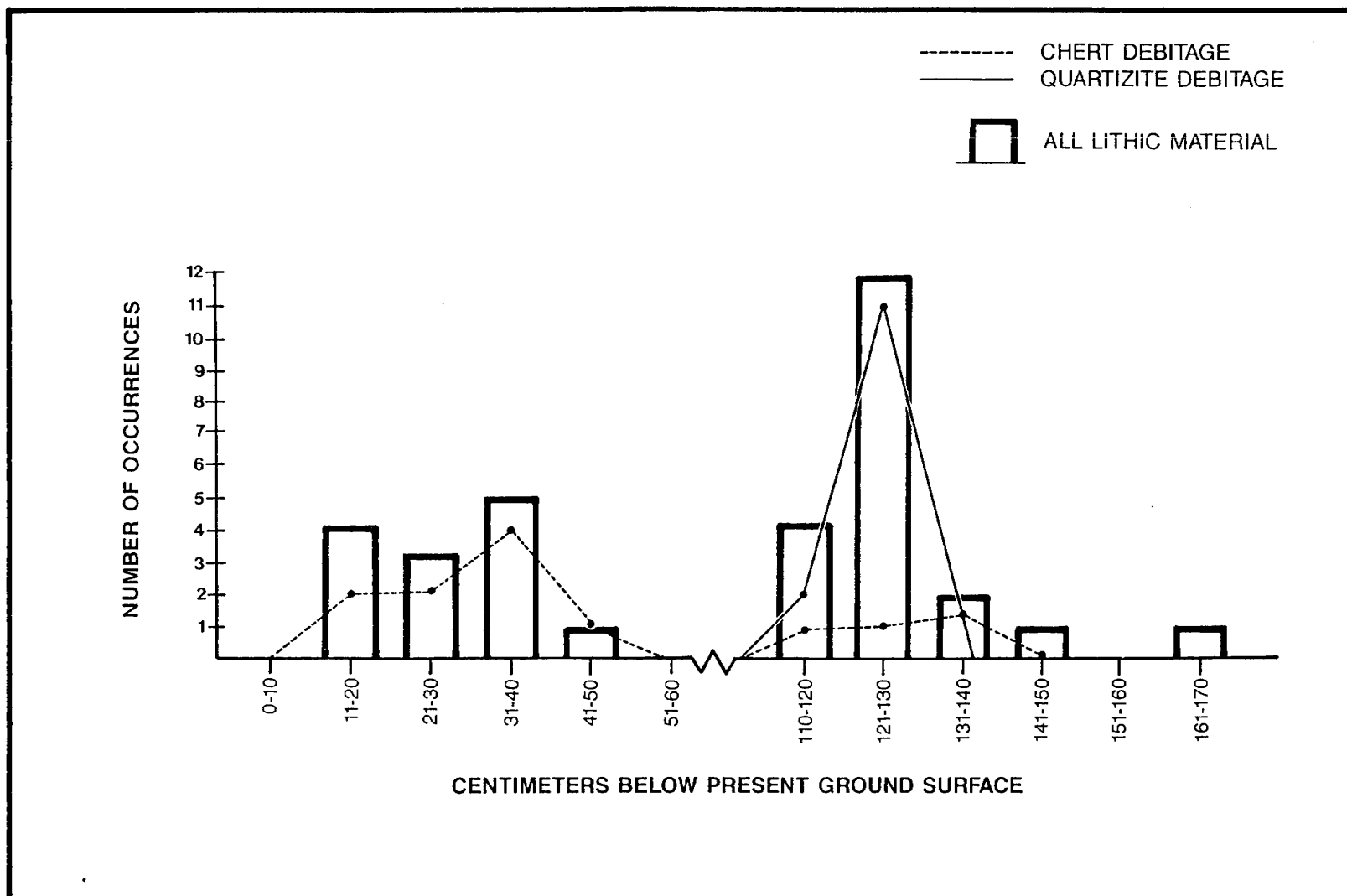


Figure 49. Site 5LR1102, frequency histogram showing vertical distribution of chert and quartzite debitage in Test Unit 3.

Specimen 5LR1102.13 is a small stemmed, triangular projectile point manufactured from gray chert. It was recovered from Level 4 of TU 1 and is directly associated stratigraphically with four items of debitage and six fragments of unburned deer bone. The specimen exhibits a short and relatively wide triangular blade, moderately strong shoulders and straight stem with square base. It is unusually thick in relation to its length and may have been heavily reworked. If it is indeed reworked, it may have been affiliated originally with the Middle Archaic period. However, it could as feasibly be a projectile point preform affiliated with the Late Prehistoric stage. The specimen is 1.84 cm long; 1.50 cm wide at the shoulders; and 1.0 cm wide at the base. Maximum thickness is 0.63 cm.

Ground Stone: Four ground stone (or possible ground stone) specimens were recovered (5LR1102.17, .20, .30, .31). Two each are from TUs 1 and 3.

Specimen 5LR1102.30 was recovered from Level 2 of TU 1. It is an ovoid granitic gneiss cobble that is ground heavily and pecked on one convex surface. It is directly associated stratigraphically with a small corner-notched projectile point (5LR1102.8), a biface fragment (5LR1102.9), an exhausted core (5LR1102.10), and 12 burned and seven unburned bone fragments. Maximum dimensions are 14.20 cm X 9.87 cm X 5.40 cm.

Specimen 5LR1102.31 was recovered from Level 3 of TU 1. It represents approximately one-half of an ovoid granitic cobble that is very lightly ground on one convex surface. It is directly associated stratigraphically with three flakes and 11 burned and unburned bone fragments. Maximum width is 9.10 cm, maximum thickness is 4.55 cm, and the incomplete length is 7.50 cm. It has fractured into six pieces; approximately 30% of one surface is incomplete. The specimen may be lightly ground on one flat surface. A seventh fragment of a granitic cobble was recovered among those comprising 5LR1102.17 and was originally collected as part of this specimen. However, subsequent examination revealed that the seventh fragment represents a different cobble. The specimen's maximum dimensions are 10.15 cm X 7.95 cm X 4.80 cm. Also recovered in direct association with 5LR1102.17 were three flakes.

Specimen 5LR1102.20 was recovered from Level 17 of TU 3. No other artifacts were recovered from this level and none were recovered from Level 16. In view of this, it is possible that 5LR1102.20 was dislodged from the unit wall within an overlying level. The specimen is an ovoid granitic cobble that does not appear to have been ground or otherwise altered. However, since all stones that occur naturally within TU 3 sediments were angular slabs, it is apparent that this specimen was transported to the site by cultural agents. The cobble's maximum dimensions are 8.45 cm X 6.15 cm X 4.50 cm.

## Interpretation

Two distinct cultural components were identified during test excavations. The lower component, which occurs at depths of 111-170 cm below PGS, appears to be more clearly defined stratigraphically than the upper component. This is illustrated in the frequency histogram indicating the total number of artifacts recovered from each arbitrary level (Figure 49). The four bars representing artifact occurrences within the upper cultural component, spanning arbitrary Levels 2-5, are not strongly peaked. However, the bars representing artifact frequencies within the lower cultural component peak very strongly within arbitrary Level 13. This peak in artifact frequency coincides with occurrence of quartzite debitage, which is absent from the upper cultural component. The distribution of lithic material types is illustrated by frequency polygons in Figure 49.

Furthermore, the upper cultural component spans four natural strata while the lower cultural component is confined to Stratum VI. These factors suggest that the site's upper cultural component may represent two or more separate occupations which occurred within a relatively short time span. The upper component yielded a radiocarbon date of 1650±50 B.P., or Plains Woodland (Late Prehistoric stage). The lower cultural component appears to represent a single occupation. No chronometrically datable material was recovered from the lower component levels.

Although the present sample of artifacts is too small to allow conclusive interpretations, the occurrence of quartzite debitage exclusively within the lower cultural component may indicate a shift in lithic procurement patterns and/or cultural preferences. Aside from the divergence in lithic material types, there are no marked differences in the material cultural of the two components. The absence of faunal remains within the lower component may be a result of sampling bias, or of poor preservation within the site's lower levels rather than an indication of changes in site function or subsistence strategies.

Although no cultural features were encountered during test excavations, the density of charcoal granules associated with both cultural components suggests that cultural burning occurred at the site. Furthermore, the recovery of several fragments of shattered cobbles from arbitrary Level 12 of TU 3 may indicate the presence of a cobble concentration or hearth-type feature nearby at that level.

The vertical distribution of faunal remains within TU 1 is bimodal (see discussion of faunal analysis, Chapter 9). Most remains were recovered from arbitrary Level 2 within Stratum II. The overall frequency of faunal material decreases through arbitrary Levels 3-5, then increases sharply in arbitrary Level 6 within Stratum IV. This uneven distribution may further indicate

the presence of more than one occupation comprising the upper cultural component.

### Summary and Conclusion

A minimum of two prehistoric cultural components are present within the rock shelter on the site's western edge. These are overlain by a mixed layer of historic refuse which dates from approximately 1930 to the present. Only small portions of the prehistoric components were sampled. The actual depth of sediments within the rock shelter and the total number of cultural components within those sediments are unknown.

SLR1110

### Testing Rationale

Ten shovel probes were excavated at this site during recording. Shovel Probe #7, which was located 10 m due north of datum and Shovel Probe #8, 20 m north and 10 m west of datum, each yielded one chert interior flake from the upper 10 cm. Shovel Probe #5, within a stone circle designated Feature 1, yielded scattered charcoal granules within the upper 5 cm. These results suggested the presence of buried cultural components. Formal test excavations were conducted in an effort to define the nature and extent of buried cultural materials and thereby assess NRHP eligibility.

### Unit Placement

One 1 m X 1 m excavation unit, designated Test Unit 1, was placed midway between Shovel Probes 7 and 8. The unit's southeast corner is located 14 m north and 4 m west of datum. Two 50 cm X 3 m trenches designated TUs 2a and 2b were excavated along the south and west edges, respectively, of Feature 1 (Figure 50).

### Results

TU 1 was excavated to a depth of 75 cm below PGS. Three natural strata were identified within this unit. Stratum 1, which extends from PGS to a depth of 35 cm, is a grayish-brown fine sandy loam. Two gray quartzite interior flakes were recovered from the upper 12 cm of this stratum. Strata 2 and 3, characterized by increased clay and gravel contents in relation to Stratum 1, contain no cultural material.

TUs 2a and 2b were excavated to a depth of 10 cm below PGS. Scattered charcoal granules occur within the upper 5 cm of these units, but no distinct concentrations were encountered. Two cobbles, which may have been subsurface components of the stone circle, were exposed in TU 2a. Both cobbles originate at a depth

5LR1110 — TEST UNITS 2A AND 2B, PLAN VIEW  
FEATURE 1 (STONE CIRCLE)

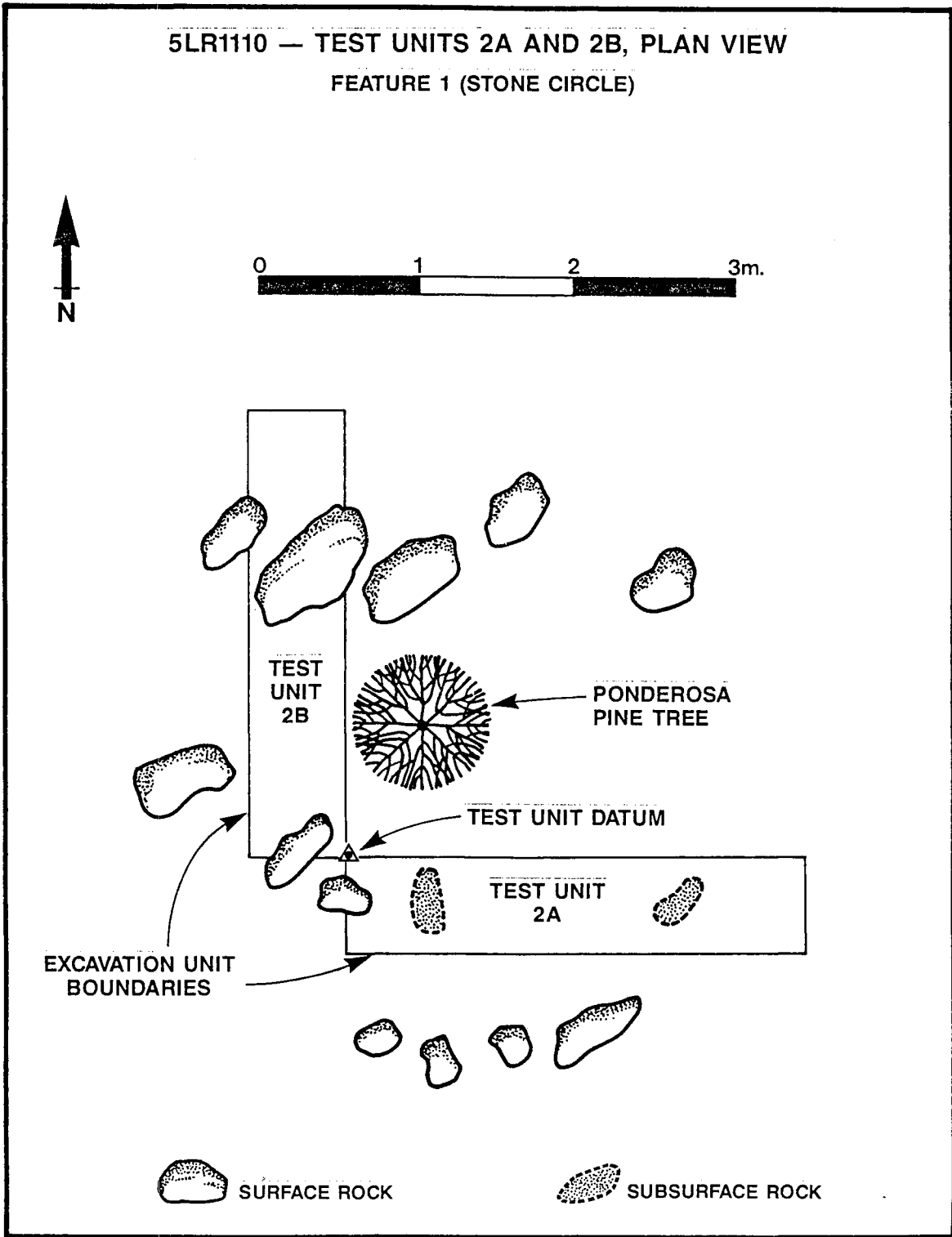


Figure 50. Site 5LR1110, plan view of Feature 1 (stone circle) and Test Units 2a and 2b.



of 23 cm below PGS. An incomplete retouched chert interior flake was recovered from the upper 5 cm of the south one-half of TU 2b.

### Interpretation

Results of the testing program indicate that at least one shallowly buried cultural component is present on site. Given the limited amount of excavation conducted and the nature and depth of site sediments, additional archaeological components may be present. The fact that TU 1 is located well away from any surface artifacts suggests that material is widely distributed throughout the site and that surface artifact distributions may not reflect the nature or density of subsurface materials.

Charcoal granules were noted within TUs 2a and 2b and Shovel Probe #5 within Feature 1, but not within TU 1 or any other shovel probe. While natural factors may account for occurrences of charcoal in any context, it seems likely that this trend indicates remnants of a buried activity locus within Feature 1. The recovery of a retouched flake from TU 2b also suggests the possibility of intact cultural deposits within Feature 1.

Although test excavations at site 5LR1110 failed to define thoroughly the nature of the site's subsurface components, enough evidence was gathered to make a viable determination of significance. It is apparent that intact subsurface components are present within the sites and that intensive investigation of these components may yield significant data.

5LR1112

### Testing Rationale

Five shovel probes were excavated during site recording. Lithic debitage and spirally fractured burned bone fragments were recovered from two shovel probes (#3 and #4) within the rock shelter. Since the shelter is situated on a floodplain only two meters above the normal high water line of the North Fork of the Cache la Poudre River, formal excavations were necessary to determine whether intact subsurface deposits were present.

### Unit Placement

One 1 m X 2 m excavation unit (TU 1) was placed immediately south of the north-south centerline of the rock shelter, with the southeast corner located directly below the dripline. The unit extends westward two meters into the rock shelter. One 1 m X 1 m excavation unit (TU 2) was placed 10 m east of the rock shelter dripline. Since topographic mapping revealed the presence of an abandoned river channel approximately 15 m east of the dripline (see Figure 23, Chapter 7), Test Unit 2 was placed on what was

believed to be the western flood terrace of this abandoned channel.

### Results

Stratigraphy: Eleven geologic strata were identified within TU 1, which was excavated to a depth of 160 cm below PGS (Figure 51). The upper two strata of this unit are composed of wind-borne sands. Stratum 1 is a homogenous lens of medium to coarse sands, approximately 5-10 cm thick.

Stratum II is more complex, consisting of no fewer than 28 very thin laminar deposits of alternatively light and dark fine grain sands with charcoal flecks scattered throughout. This stratum varies in thickness from approximately 8-15 cm.

Stratum III is a 2-3 cm thick lens of fine sands and silt. This stratum, which extends to a depth of 16 cm below PGS, probably represents a brief episode of low-energy alluvial deposition.

Stratum IV is a dark sandy silt with small amounts of clay and a moderately high frequency of pea-size angular gravels. The stratum is approximately 5 cm thick. Stratum IV may represent a variety of depositional factors. Since the angular gravels are unsorted, agents other than alluvial action are probably responsible for at least some of the aggregates comprising this stratum. The sediment may be a result of low-energy alluvial action, aeolian deposition, and natural weathering of the rock shelter ceiling, all occurring simultaneously, or within a brief time span.

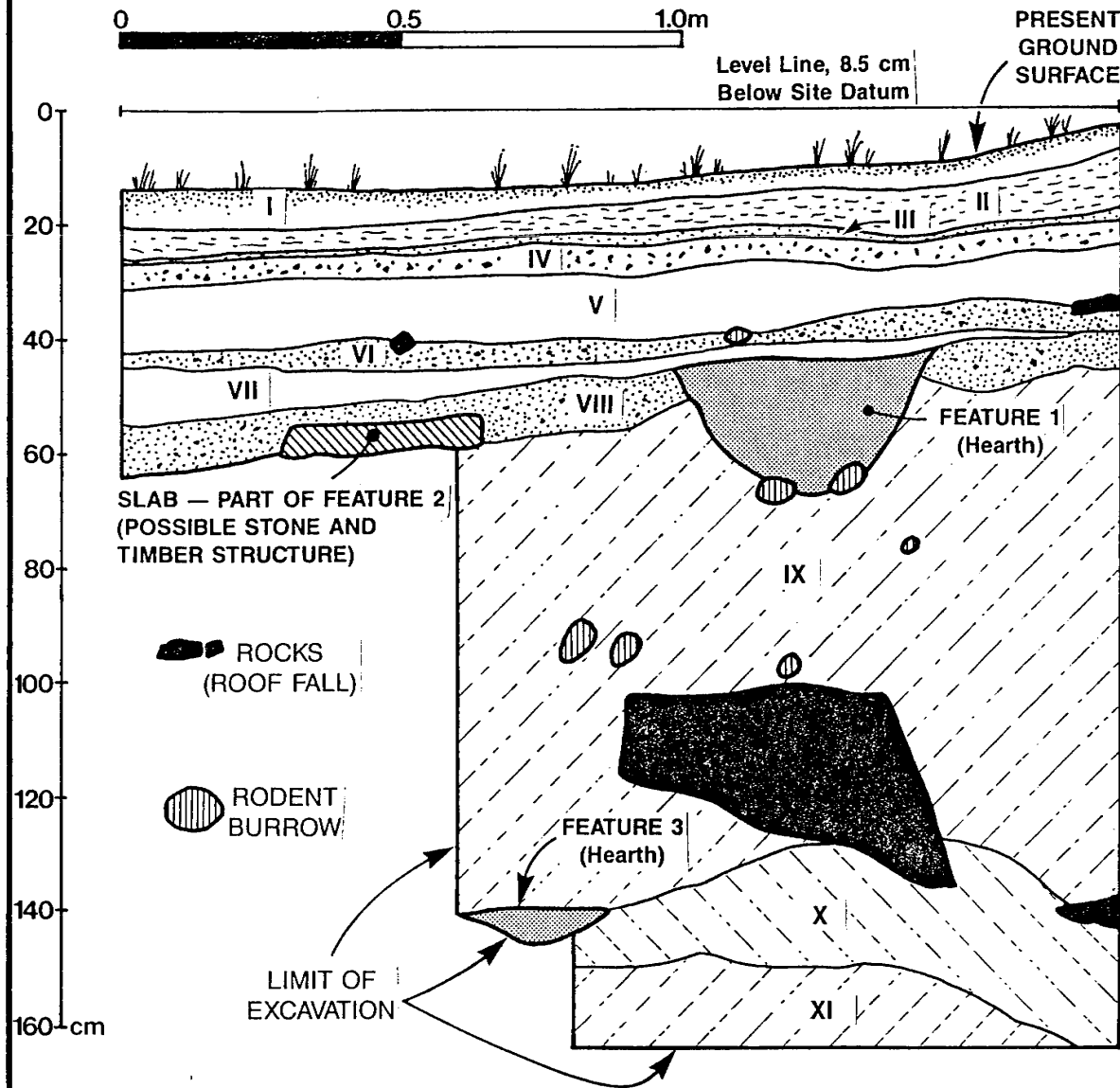
Stratum V is a homogeneous lens of compacted silty clay with no inclusions. This stratum, which extends from approximately 21-30 cm below PGS, may represent a single episode of low-energy alluvial deposition.

Stratum VI is identical in texture and color to Stratum IV, but contains occasional charcoal flecking which is not present in Stratum IV. Average thickness of Stratum VI is 4 cm. An episode of accelerated roof fall appears to have occurred toward the end of this depositional sequence. Angular chunks of granitic material, 5 to 15 cm in breadth, occur consistently along the interface between Strata V and VI, their bases resting within the upper portion of Stratum VI.

Stratum VII is essentially identical to Stratum V, but exhibits a slightly higher clay content. This stratum pinches out toward the rock shelter dripline and is thickest at the west end of TU 1.

Stratum VIII is identical in texture and color to Strata IV and VI, but contains a very high frequency of charcoal. This stratum contains a well defined cultural component comprised by

5LR1112 — TEST UNIT 1, NORTH WALL PROFILE:



SOIL UNIT DESCRIPTIONS

STRATUM I: Dark Yellowish-brown (10YR 4/6), compacted, medium to coarse eolian sand.

STRATUM II: Interbedded laminae of alternating brown (7.5YR 5/4) and yellowish-brown (10YR 5/4), fine sand with charcoal flecks.

STRATUM III: Dark grayish-brown (10YR 4/2), fine sand and silt.

STRATUM IV: Dark yellowish-brown (10YR 4/4), slightly clayey sandy silt with pea-sized and smaller angular gravels.

STRATUM V: Dark yellowish-brown (10YR 3/4), compacted silty clay.

STRATUM VI: Dark yellowish-brown (10YR 4/4), slightly clayey sandy silt, with pea-sized and smaller angular gravels, charcoal flecking.

STRATUM VII: Identical to Stratum V, but slightly more clayey.

STRATUM VIII: Identical to Stratum VI.

STRATUM IX: Brown to dark brown (10YR 4/3), fine to medium alluvial sand.

STRATUM X: Very dark grayish-brown (10YR 3/2), clayey silt with pea-sized and larger gravels, abundant charcoal flecks/staining.

STRATUM XI: Identical to Stratum IX.

Figure 51. Site 5LR1112, profile of north wall of Test Unit 1.

flaked and ground stone artifacts, faunal remains, a pit type feature, and a possible structural feature.

Stratum VIII is underlain by an 80-90 cm thick lens of medium to coarse alluvial sands, designated Stratum IX. This stratum appears to represent a single depositional event.

Stratum X is similar to Strata IV, VI, and VIII, but is darker in color and contains very little sand. Pea size angular gravels and infrequent charcoal flecking are characteristic of this stratum. An eroded and possibly truncated basin type feature indicates the presence of a cultural component, or at least a remnant of such a component, within this stratum. A period of accelerated roof fall appears to have occurred toward the end of this depositional sequence.

Stratum XI, which extends from the base of Stratum X at 130 cm below PGS to the terminus of excavation at 160 cm below PGS, is identical in texture and color to Stratum IX. This stratum appears to represent a single alluvial event. Its vertical extent is undetermined.

Five geologic strata were identified within TU 2 (Figure 52), none of which correlates precisely with those identified in TU 1. All strata occurring within TU 2 appear to represent alluvial sands and silts. Stratum XIV, which extends from approximately 20-40 cm below PGS in TU 2, may correspond to Strata IV, VI, and VIII in TU 1. These strata are similar in color and texture and all contain angular gravels and charcoal flecking. Stratum XVI in TU 2 is similar to Strata IX and XI in TU 1.

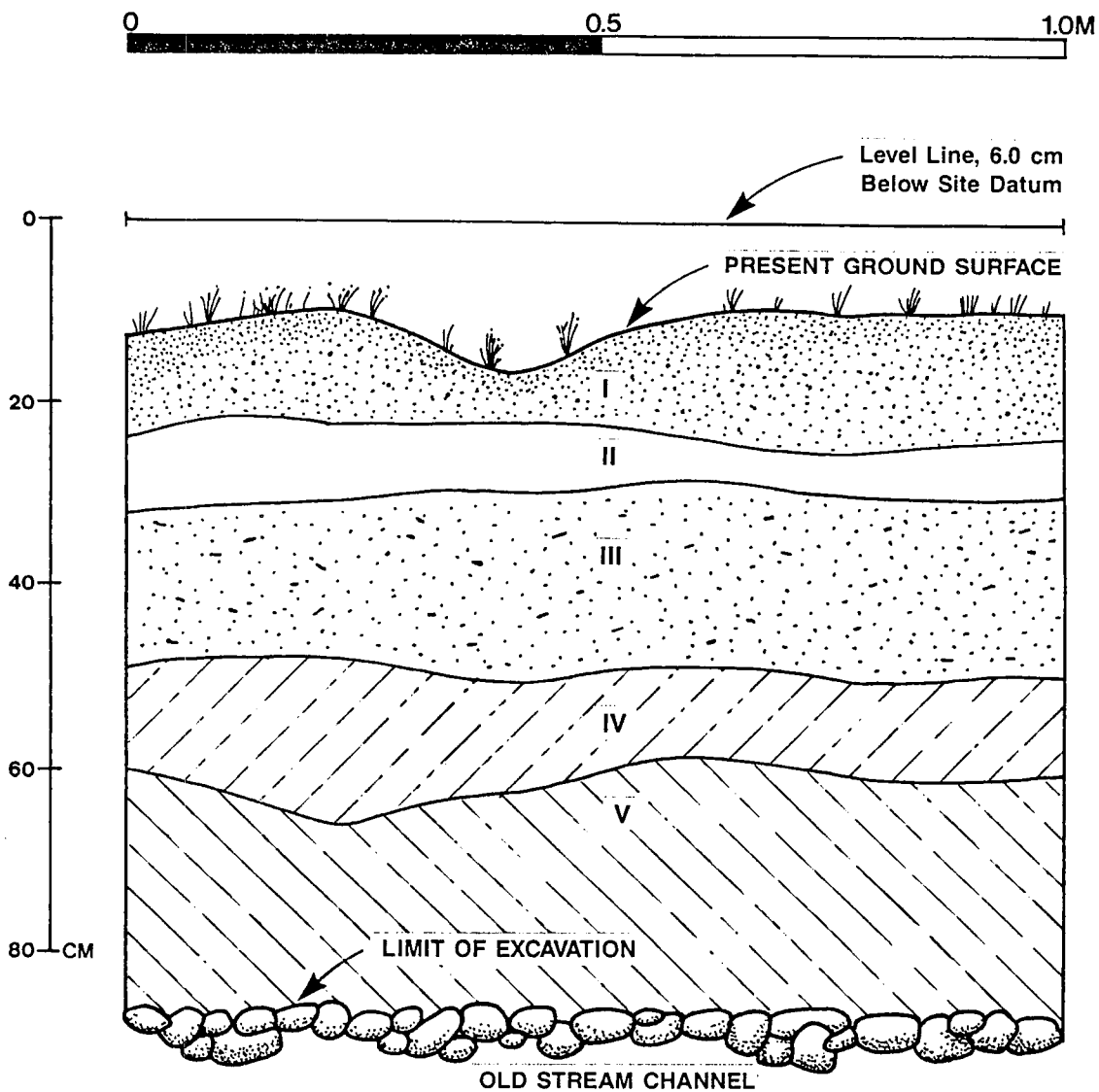
No cultural material was recovered from TU 2. A former channel of the North Fork, indicated by a lens of large rounded cobbles, was encountered at 75 cm below PGS, directly beneath Stratum XVI.

Cultural Features: Three cultural features were encountered within TU 1. Features 1 and 3 are charcoal- and ash-filled basins and Feature 2 is a possible structural remnant comprised of vertical and horizontal slabs and partially carbonized timber.

Feature 1 is a well defined artificial basin (Figure 51). Approximately the southern one-third of the feature extends into TU 1 from the north unit wall. The upper edge of the feature originates at a depth of 41 cm below PGS and the base extends to a depth of 65.50 cm. The feature is roughly circular at a depth of 41 cm below PGS, and the base of the feature extends to a depth of 65.50 cm. Feature 1 is roughly circular in plan view; maximum width is 45 cm.

Feature fill consists primarily of compacted powdery gray ash with a moderately high density of small charcoal granules. Five pieces of heavily carbonized large mammal bone were

# 5LR1112 — TEST UNIT 2, EAST WALL PROFILE



## SOIL UNIT DESCRIPTIONS

STRATUM I: Medium brown silty sand with fine, well-sorted, quartzite gravels.

STRATUM II: Orange-brown alluvial sand.

STRATUM III: Light brown alluvial sand with some gravels, charcoal flecks.

STRATUM IV: Medium grayish-brown, silty-sandy alluvium.

STRATUM V: Dark grayish-brown, silty-sandy alluvium.

Figure 52. Site 5LR1112, profile of east wall of Test Unit 2.

recovered from the lower 5 cm of the basin. Numerous fragments of burned and unburned large mammal bone were recovered from Stratum VIII in direct association with Feature 1.

Artifactual materials associated with Feature 1 are seven chert interior flakes, one utilized flake, three biface or projectile point blade fragments, one chert uniface, and one unifacially ground river cobble. The ground cobble (5LR1112.15) was recovered in situ approximately 10 cm south of Feature 1, 4 cm above the feature's upper edge. All other material mentioned above is associated stratigraphically with Feature 1.

Feature 2 is problematic. The feature was indicated initially by the presence of a vertical slab which is not the same granitic material as the rock shelter and consequently not a roof spall, located near the west end of TU 1. Further excavation revealed a smaller vertical slab abutting the large slab on the west edge in the manner of a shim or support. At least four horizontal slabs of comparable size appear to be associated with the vertical slabs. These stones form an arc across the northwest quarter of TU 1 (Figure 53; see also Figure 51). The basal elevations of these slabs are consistently between 57 and 58 cm below PGS, which corresponds with the base of Stratum VIII in the western one-half of TU 1.

A large piece of partially carbonized wood (5LR1112.16) was found protruding 12 cm from the south unit wall at a basal elevation of 56.50 cm below PGS. The wood appears to represent a limb or segment of a small tree trunk. Several fragments of partially carbonized wood were found between the vertical slabs and an adjacent horizontal slab. This specimen yielded a radiocarbon date of 1200±50 B.P.

Although too little of this feature was exposed during test excavations to allow conclusive interpretations, it appears to represent a stone and timber structure. The location of wood fragments found between slabs, and the presence of specimen 5LR112.16, suggest that these items may represent remnants of an upright timber that was anchored between the stones and fell outward away from the structure (Figure 53).

Feature 3 is a shallow, poorly defined basin that originated at the top of Stratum X at a depth of 130 cm below PGS (Figure 51). Feature fill does not differ significantly in either color or texture from the surrounding sediments. An artificial basin is indicated only by a discontinuous orange oxidation rind along the base of the feature. Consequently, the extreme eastern portion of this feature was removed before the basin was recognized.

The feature is roughly circular in plan view, with an estimated diameter of approximately 25 cm and a maximum thickness of 6 cm. All fill was water screened through 1/32-inch mesh. One small fragment of carbonized bone and seven small fragments

5LR1112 — TEST UNIT 1, STRATUM VIII, PLAN VIEW

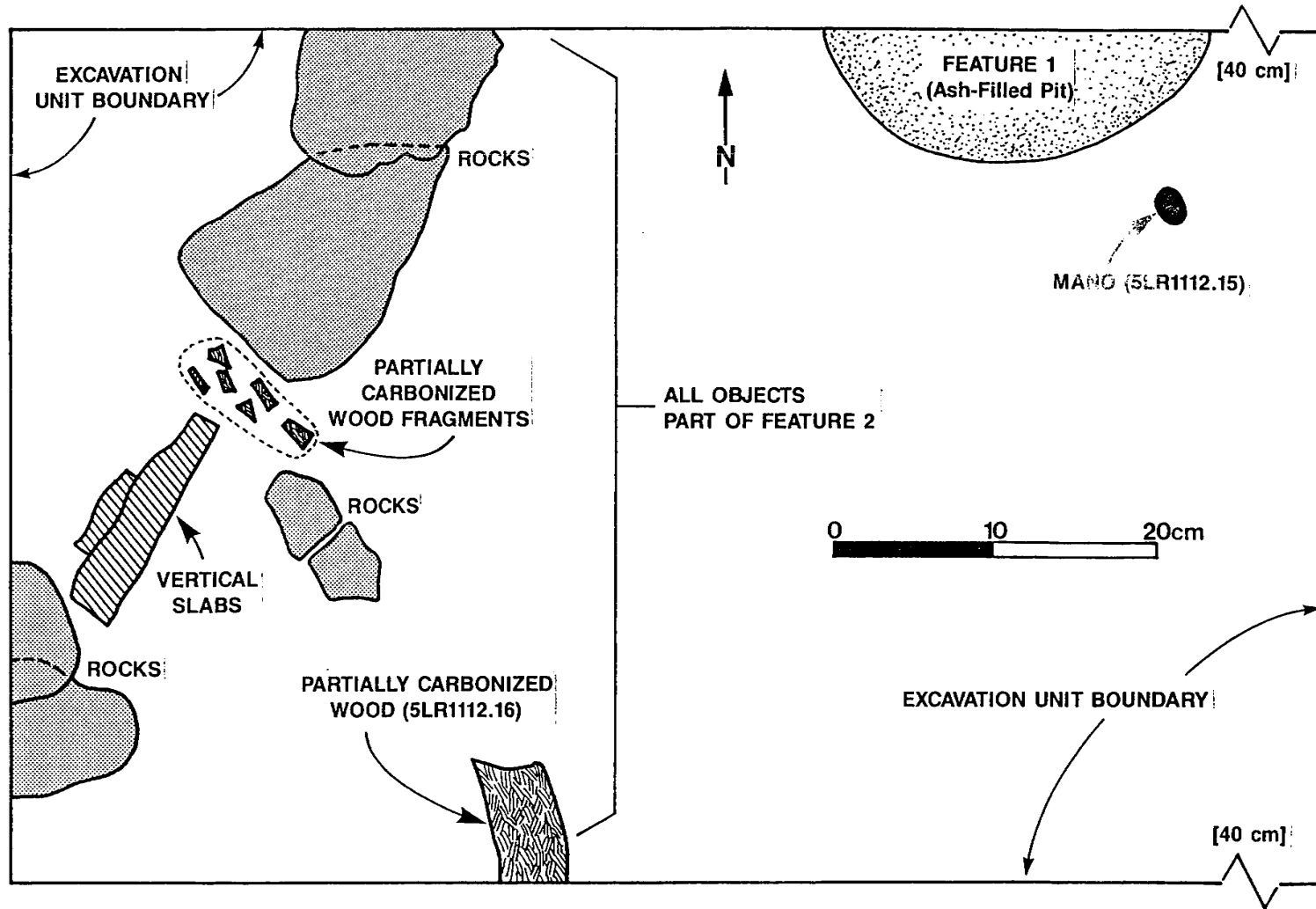


Figure 53. Site 5LR1112, plan view of Test Unit 1, Feature 2 exposed in Stratum VIII.

of uncarbonized bone, at least one of which is rodent, were recovered from the feature fill. No artifacts are associated with Feature 3 or Stratum X.

Artifacts Recovered:

Lithic Debitage: Nine items of debitage, including one utilized flake, were recovered from Stratum VIII, TU 1, and two were recovered from Shovel Probe #3 at approximately the same elevation as Stratum VIII. All debitage is chert. One is a secondary flake; the remainder are tertiary.

Utilized Flake: One utilized flake was recovered from the western one-half of TU 1. The specimen exhibits alternate unifacial retouch along the proximal end and the proximal portion of one edge. The flake is incomplete. Maximum width is 1.50 cm, maximum thickness is 0.23 cm, and the incomplete length is 1.50 cm.

Uniface: One chert uniface (5LR112.6) was recovered from the eastern one-quarter of TU 1, Stratum VIII. It is manufactured from a large tertiary flake of white chert, and exhibits a faceted platform and large bulb of percussion. The right lateral edge and distal end are steeply retouched along the dorsal surface. The left lateral edge is retouched along the dorsal surface for one-half its length. The specimen is 3.60 cm long, 2.50 cm wide, and 0.82 cm thick.

Bifaces: Three biface fragments were recovered from the western one-half of TU 1, Stratum VIII. All are manufactured from chert.

Specimen 5LR112.11 is the distal portion of a triangular blade. Flaking on one surface is roughly chevron patterned; the opposite surface is only marginally retouched, indicating that the specimen is manufactured from a tertiary flake. The proximal end terminates in a hinge fracture.

Specimen 5LR112.12 is fragmentary but appears to be the portion of the edge and base of an unnotched projectile point or small biface.

Specimen 5LR112.13 is the blade midsection of a triangular biface or projectile point. It is biconvex in cross-section. An impact flake scar, originating at a roll fracture on the distal end, extends the length of one surface.

Ground Stone: One piece of ground stone (5LR112.15) was recovered near Feature 1 in TU 1, Stratum VIII. It is an irregularly shaped granitic cobble lightly ground on one convex surface. Maximum dimensions are 8.65 cm X 8.0 cm X 4.33 cm.



## Interpretation

The natural history of the North Fork of the Cache la Poudre River appears to have played a major role in the preservation of archaeological deposits within this rock shelter. Given the shelter's proximity to both the existing and former river channels, it is surprising that any in situ cultural deposits are present.

Strata IX and XI within TU 1 probably represent the last relatively high-energy episodes of alluvial deposition within the rock shelter. These deposits are similar to Stratum XVI which overlies a former river channel at the base of TU 2. Since this channel remnant represents a period of very high-energy deposition, it can be assumed that sediments comprising Strata IX, XI, and XVI are considerably younger than the channel deposits. At the time Strata IX, XI, and XVI were deposited the river may have been located within the channel scar still visible to the east of the rock shelter.

This episode of alluviation appears to have been interrupted for an undetermined period during which Stratum X sediments were deposited within the rock shelter. During this period the rock shelter was utilized by at least one prehistoric group. It is probably safe to assume that during this occupation the rock shelter was dry for at least part of the year and only subjected to extremely low-energy intermittent flooding, if at all. However, the environmental conditions responsible for the deposition of Stratum XI appear to have returned and resulted in the deposition of Stratum IX.

It may be significant that this return to a predominately alluvial depositional environment appears to have coincided with or followed immediately after a period of accelerated roof fall. During the deposition of Stratum IX an undetermined portion of Stratum X appears to have been scoured away. Because of this apparent erosional pattern, it is impossible to determine how many sediments may have actually accumulated between Strata XI and IX. It is possible that Stratum X represents only the earliest of a series of nonalluvial sediments, later components of which were destroyed during the deposition of Stratum IX.

Following the sequence of alluvial deposition represented by Stratum IX, relatively dry conditions similar to those which prevailed during the accumulation of Stratum X appear to have returned. This resulted in the deposition of Stratum VIII. During this period the rock shelter was again occupied by at least one prehistoric group. If Feature 2 actually represents structural remains, then this was probably an intensive and relatively long-term occupation, indicating that flooding was negligible during this period. This stratum is radiocarbon dated at 1200 $\pm$ 50 B.P., or Plains Woodland period (Late Prehistoric stage).

An episode of low-energy alluviation, represented by Stratum VII, appears to have interrupted the accumulation of Stratum VIII sediments. Since Stratum VI is identical to Stratum VIII, but contains no cultural material, it is apparent that drier conditions returned immediately after the deposition of Stratum VII. However, the rock shelter apparently remained abandoned during this drier episode. The environmental conditions responsible for the deposition of Stratum VII appear to have returned, resulting in the deposition of Stratum V, which is essentially identical to Stratum VII. This depositional sequence appears to have coincided with or followed immediately after a period of accelerated roof fall. Although Stratum V represents the same low-energy alluviation apparent in Stratum VII, the markedly greater thickness of Stratum V suggests a greater duration of deposition.

The environmental conditions responsible for the accumulation of Strata VI and VIII (and possibly Stratum X) appear to have recurred, as represented by Stratum IV. Once again this depositional episode was followed by a period of low-energy alluviation, as represented by Stratum III. The thinness of Stratum III indicates a very brief depositional period. Thereafter, only wind-borne deposits accumulated in the rock shelter. The laminar banding of Stratum II suggests deposition from two regularly alternating wind patterns while the homogeneity of Stratum I suggests a single prevailing wind pattern.

#### Summary and Interpretation

These sedimentological data indicate that alternating periods of predominately alluvial and predominately aeolian deposition occurred throughout the shelter's history and that prehistoric utilization of the shelter is keyed to these depositional patterns. Since the alluvial deposits consist of progressively finer sediments approaching the surface, the river channel (i.e., the energy center) appears to have meandered continually away from the rock shelter. The river may have occupied the visible channel scar east of the shelter (see Figure 23, Chapter 7) during the deposition of Strata IX and XI. During the deposition of Strata III, V, and VII the river may have occupied its present channel, although it is possible these deposits represent an intermediate location, perhaps a braided channel between the visible former channel and the present channel.

Since the river channel appears to have migrated consistently in one direction, the periods of predominately aeolian deposition probably resulted from climatic fluctuations of some intensity rather than normal seasonal variations in stream discharge. It is unlikely that aeolian deposits extensive enough to survive intermittent flooding could have accumulated over a period of weeks or months. However, thick alluvial deposits, such as Stratum IX, could represent relatively brief

episodes of extensive flooding.

Because of the erosional potential of alluvial action within the rock shelter it is possible that complete stratigraphic (and cultural) records have accumulated, then been destroyed. If this true, the present stratigraphic and cultural record may represent relatively recent, i.e., very late Holocene, events.

## CHAPTER NINE

### LABORATORY ANALYSIS

#### Laboratory Methods

All recovered artifacts were cleaned in warm water and subsequently labelled by site number and artifact number. Artifact numbers run sequentially from 1 through n for each site and were appended to the site number (such as 5LR1110.1). Lithic debitage and non-diagnostic faunal materials from general excavation levels were catalogued by level; all other items were catalogued individually.

Labelled artifacts were bagged for curation with an identification card enclosed. A University of Colorado Museum-Cultural Resource Data File Card was completed for each site from which materials were collected.

Lithic materials were examined for general manufacturing and use attributes. Specimen dimensions, general morphology, and any use-wear patterns were noted. Specific artifact attributes are discussed below and in Chapter 8.

Faunal materials were examined for species identification and for evidence of cultural alteration, such as incisions, spiral fractures, and carbonization. A comparative collection was used in speciation of faunal remains.

One sample of feature fill was recovered for flotation analysis. The sample was separated after flotation into light fraction and heavy fraction groups, which were examined microscopically for floral and other organic materials. Identification of seeds and seed fragments was made with the aid of a comparative collection.

#### Artifact Analysis

##### Prehistoric Artifacts

Projectile Points: Eight projectile points were recovered from the study area. Four were found on the surface and four were recovered from test excavations. They represent various temporal components spanning the latter portion of the Paleo-Indian stage (Plano period) through the Late Prehistoric stage. The projectile points are discussed individually below, beginning with those representing the earliest periods of occupation and progressing through the later specimens.

5LR1098.2 (Late Paleo-Indian): This specimen was recovered from the surface of site 5LR1098. It is the basal portion of a large projectile point with parallel edges and a concave base. It is manufactured from heat-treated petrified wood. Flaking is parallel with extensive basal thinning. The edges and base are moderately to heavily ground; it is biconvex in cross-section. This point appears to have been reworked along the distal portion and was probably broken during or after this reworking.

This specimen is morphologically similar to James Allen, Frederick, and other lanceolate parallel-flaked projectile points of the Late Paleo-Indian period in eastern Colorado (Cassells 1983). However, this specimen could have been reworked and transported to the site at any time throughout the prehistoric period.

5LR1098.1 (Possible Early Archaic): This specimen was recovered from the surface of site 5LR1098. It is the approximate lower one-half of a large side-notched projectile point, manufactured from untreated petrified wood. The point exhibits shallow lateral notches and a slightly eared concave base. The blade is asymmetrical and appears to have been resharpened. Flaking is random; extensive basal thinning is apparent on one surface. It is biconvex in cross-section.

This projectile point is morphologically similar to certain specimens attributed to the Early Archaic period at Magic Mountain south of Denver (Irwin-Williams and Irwin 1966). However, it is also similar to the Yonkee type of the Middle Archaic period on the Northwestern Plains (Frison 1978:46-56) and to specimens from Level 3 at Willowbrook, near Denver, associated with a radiocarbon age of 2215  $\pm$  75 years B.P. (Late Archaic) (Leach 1966:33-34, 44).

5LR1129 (Possible Early Archaic): This specimen was recovered as an isolated find from a terrace along the western edge of Seaman Reservoir. It is manufactured from milky quartz. The extreme distal portion is incomplete. The specimen exhibits a thick palmate blade, weak shoulders and a short, slightly expanding stem with convex base. Flaking patterns are difficult to discern because of the material type, but flake scars appear roughly parallel. Basal thinning is evident on one surface. An impact flake scar extends approximately one-half the blade length from the distal fracture.

This projectile point is similar to specimens from a number of high altitude sites on the Colorado Front Range, most notably the Ptarmigan site (Benedict 1981:30), 5BL152 (Benedict and Olson 1978:48-50), and Vail Pass Camp (Gooding 1981). Radiocarbon ages

for these types of projectile points cluster in the 7,000 to 5,000 B.P. range (Anderson 1985:162).

5LR1098.32 (Late Archaic or Late Prehistoric): This specimen was recovered from Level 1 of Test Unit 6a within Feature 26, a stone circle, at site 5LR1098. The blade is triangular; the extreme distal portion is incomplete. The point is strongly shouldered with a short expanding stem and convex base. It is manufactured from fine grain gray quartzite. Flaking is roughly chevron-patterned, and basal thinning is discernible on one surface. The specimen is biconvex in cross-section.

This specimen is similar to projectile points recovered from both Late Archaic and Late Prehistoric contexts in northern Colorado (Kainer 1976; Irwin-Williams and Irwin 1966). Without associated chronometric dates or additional diagnostic artifacts, it is impossible to place the specimen reliably within either period.

5LR1098.3 (Late Prehistoric): This specimen was recovered from Level 1 of Test Unit 1, site 5LR1098. It is the distal portion of a small corner-notched projectile point. It exhibits an symmetrical leaf-shaped blade with remnants of a small diagonal notch visible on one edge. The blade is plano-convex in cross-section. It is manufactured from red chert and may have been heat-treated prior to manufacture. Flaking is roughly chevron-patterned.

This specimen is morphologically similar to projectile points recovered from Late Prehistoric contexts throughout eastern Colorado (Cassells 1983). Similar specimens also occur in Late Prehistoric contexts throughout the Northwestern Plains (Frison 1978) and in southeastern Colorado (Anderson 1985).

5LR1122.1 (Late Prehistoric): This specimen was recovered from the surface of site 5LR1122. It is a small triangular projectile point with serrated blade edges, shallow lateral notches, and a short expanding stem with concave base. It is manufactured from lavender chert. Flaking is random to slightly chevron-patterned; it is biconvex in cross-section.

Morphologically similar projectile points are not well represented in the archaeological literature for northeastern Colorado. Similar specimens were recovered from Cultural Layer 37 at Mummy Cave in northern Wyoming (McCracken *et al.* 1978). Similar projectile points are also reported from Levels B and C of the Lodaiska site near Denver (Irwin and Irwin 1959). These

specimens are generally associated with Late Prehistoric and/or Late Ceramic period occupations (Anderson 1985:293-294).

5LR1102.8 (Late Prehistoric): This specimen was recovered from Level 2 of Test Unit 1, site 5LR1102. It is a triangular corner-notched form with a slightly expanding stem and convex base. It is manufactured from white chert, and is heavily spalled from thermal stress. Flaking patterns and cross-section configuration cannot be determined due to surface spalling.

Morphologically similar projectile points have been recovered throughout eastern Colorado and adjacent regions in association with Late Prehistoric and Late Ceramic period occupations. Similar projectile points from the Spring Gulch site are associated with radiocarbon age estimates ranging from approximately 2,340 - 935 years B.P. (Kainer 1976:216). A radiocarbon date of 1,650 ± 50 B.P. (Beta-23492) was obtained for Level 5 of TU 2 on site 5LR1102. This date is associated with the upper one-half of Stratum IV. Since specimen number 5LR1102.8 was recovered from Stratum III, it can be assumed that it post-dates this radiocarbon age.

5LR1102.13 (Late Prehistoric): This specimen was recovered from Level 4 of TU 1 at site 5LR1102. It exhibits a broad triangular blade with strong shoulders and straight stem with square base, and is biconvex in cross-section. Flaking is random. The specimen is manufactured from gray chert.

Morphologically similar projectile points are not referenced in the archaeological literature for northeastern Colorado. It is probable that this specimen is actually a preform of a projectile point similar to specimen 5LR1102.8. It may also be the remnant of an Archaic projectile point which was subsequently reworked during the Late Prehistoric stage. Level 4 of TU 1 encompassed the lower 5 cm of Stratum III and the upper 5 cm of Stratum IV. Consequently, the specimen could not have been deposited at the site prior to the date of 1650 +/- 50 obtained from the upper one-half of Stratum IV.

Bifaces: Six incomplete bifaces were recovered from test excavations and three were recovered as isolated finds. The bifaces recorded as isolated finds were not collected. Seven of the biface fragments are manufactured from chert and one is manufactured from chalcedony. The three specimens recorded as isolated finds occur on hill slopes or upland terraces and all are distal blade segments. Four of the six biface fragments recovered from test excavations are blade midsections; one is a blade tip, and the remaining one is probably a basal fragment.

Three biface fragments recovered from Level 5 of TU 1 on site 5LR1112 are associated with a possible stone and timber architectural feature. A single biface fragment recovered from Level 2 of TU 1 of site 5LR1102 (5LR1102.9) is associated with a high density of burned and unburned deer and bison bone as well as other lithic artifacts. Edge-wear patterns are not discernible on any of the collected biface fragments.

Unifaces: Two unifaces were noted or collected within the study area; both are complete. Specimen 5LR1112.6 was recovered from Level 5 of Test Unit 1 on site 5LR1112. It is manufactured from a large chert interior flake with a faceted platform on the proximal end. The right lateral margin and distal end are extensively retouched to form steep working edges. The left lateral margin is retouched less extensively on the ventral surface along the distal one-half of the edge and on the dorsal surface along the proximal one-half. The specimen is associated with an ash-filled pit (Feature 1), a mano, and several pieces of burned and unburned deer bone.

A similar specimen was observed on the surface of site 5LR1109. This artifact was sketched and recorded but not collected. It is manufactured from an interior flake of maroon chert, and has been retouched extensively along the right lateral margin and distal end on the ventral surface. The left lateral margin is unaltered.

Retouched/Utilized Flakes: Six retouched/utilized flakes were collected or recorded in the study area. Three were recovered from test excavations at site 5LR1098 and one was recovered from testing of site 5LR1110. One was recorded as isolated find 5LR1135, and another was noted at site 5LR1122.

All are chert interior flakes unifacially utilized and/or retouched on one straight or convex edge. Slight crushing and edge rounding is discernible on the specimens.

Ground Stone: Nine ground stone artifacts were recovered during test excavations. In addition, seven ground stone specimens were noted on site surfaces or recorded as isolated finds. The total number of surficial ground stone fragments on site 5LR1098 is undetermined.

Two of the collected ground stone specimens (5LR1098.13, 23) are sandstone and the balance are of granitic materials. Among the uncollected ground stone specimens, six are sandstone and one is granitic. While granitic manos appear common, only one granitic slab was noted (on site 5LR11089). The high frequency



of granitic ground stone specimens may be a result of the paucity of sedimentary formations within and near the study area.

Ground stone recovered from test excavations occurs in a variety of associations. On site 5LR1098, all ground stone artifacts were found within or in close proximity to hearth areas. One fragment of a unifacially ground sandstone slab was recovered within a stone circle. On sites 5LR1102 and 5LR1112, ground stone artifacts were recovered in direct association with butchered bone and bison remains as well as a variety of flaked stone artifacts.

### Historic Artifacts

Historic artifacts were recovered from sites 5LR1099, 5LR1102, 5LR1111, and 5LR1113. Because of the limited inventories, these materials are described by site, with individual site discussions further broken down by material type.

5LR1099: Two large, incomplete cut (square) nails were recovered from Test Unit 1 during test excavations. They are heavy gauge, with respective lengths of 7.7 cm and 7.4 cm. They suggest a pre-1890 age for the historic component of the site.

5LR1102: Historic artifacts consisting of glass, ceramic, and metal objects were recovered in six separate shovel tests.

Metal: Three complete wire nails, lengths - 7.6 cm, 6.5 cm, and 6.5 (5LR1102.6); one complete wire nail, length - 7.0 cm (5LR1102.6); three fragmentary wire nails (5LR1102.7); one fragmentary wire nail (5LR1102.2); three flattened metal fragments (5LR1102.3); two flattened metal fragments, one of which is ribbed (5LR1102.1); one flattened metal fragment (5LR1102.2). All unidentified metal fragments are probably remnants of food containers.

Ceramics: One thin, white glazed ceramic rim sherd lacking decoration or trademark (5LR1102.2); one polished gray-black sherd of a circular ceramic item, possibly clay pigeon (5LR1102.5).

Glass: One fragment of amber bottle glass and one fragment of clear bottle glass, no makers' marks (5LR1102.2).

5LR1111: Metal, ceramic, glass, and leather artifacts were recovered from a single provenience, Shovel Test 1 in Feature 2.

Metal: One complete, highly rusted padlock lacking visible markings, body dimensions - 4.0 cm X 4.0 cm X 1.5 cm, overall length 7.7 cm (5LR1111.9); one metal one-hole button, possibly copper, tarnished olive green, with circular incised spoke-like pattern surrounding hole, overall diameter - 1.5 cm (5LR111.6); 10 complete cut square nails in five sizes: (10 cm/4 in, 8.7 cm/3 1/2 in, 8.1 cm/3 1/4 in, 7.5 cm/3 in, 6.2 cm/2 1/2 in) (5LR1111.10); one fragmentary cut square nail (5LR1111.10).

Ceramics: Two glazed earthenware sherds from a single vessel, thick, yellowish-tan, with textured (ribbed) interiors, unpainted and lacking trademarks (5LR1111.2); two glazed earthenware sherds from a single vessel (one rim sherd), purplish-brown glazed interiors, unpainted natural beige exterior, lacking trademarks (5LR1111.1); two small sherds of thin porcelain, possibly figurine fragments, with white interiors and pinkish-white exteriors, no trademark (5LR1111.4).

Glass: One large body fragment of a pale green bottle, lacking maker's mark, seam, or other diagnostic indicators (5LR1111.3).

Leather: Eight fragments of varying size of a leather shoe, possibly the sole, including several small tacks (5LR1111.11).

5LR1113: Metal and ceramic artifacts were collected in association with Feature 3, a large foundation.

Metal: One decorative shutter hinge with the inscription PAT AUG. 7 1883 R; dimensions - 10.1 cm X 5.1 cm X 0.5 cm (5LR1113.2).

Ceramics: One large stoneware sherd (5LR1113.2), white glaze with black maker's mark and the words:

IRONSTONE CHINA  
[?] & G MEAKIN  
HANLEY  
ENGLAND

According to Godden (1964), the particular hallmark depicted on this sherd, which features a lion and horse facing inward to a Latin-inscribed crest, was placed on ironware produced by the J. and G. Meakin Company between 1891 and 1907.

These artifacts as a group corroborate archival data which indicate that the first intensive Euro-American occupation of the study area, which relates to the settlement/homesteading theme, occurred between ca. 1880 and 1925.

## Non-Artifactual Materials

### Faunal Analysis

Faunal remains were recovered as a result of shovel probing (during initial recording) and formal testing of sites SLR1098, SLR1102, and SLR1112. Bison (Bison sp.) and deer (Odocoileus sp.) dominate the faunal inventory. One occurrence each of mammoth (Mammuthus sp.) and canid (Canis sp.) were also identified.

SLR1098: A fragmentary, highly eroded molar of Mammuthus sp. was recovered from sub-cultural depth in alluvial silts of probable late Pleistocene age in Test Unit 4. This occurrence probably represents short-range fluvial transportation from a point upstream on the North Fork of the Cache la Poudre River.

SLR1102: Faunal materials were found in two shovel tests and two formal test units. Shovel Test 2 yielded a burned caudal vertebra of a coyote or dog (Canis sp.), two deer (Odocoileus sp.) metapodial fragments, 24 burned long bone fragments of unidentified large mammal, and 47 unidentifiable bone fragments (46 burned). Shovel Test 3 yielded two indeterminate large mammal long bone fragments.

Test Unit 1 produced bone in Levels 2 through 5, all contained within natural Strata II and III (see Chapter 8). Most common are deer (Odocoileus sp.) bones, which include one distal metapodial, one calcaneum, one calcalcaneum, nine unidentifiable long bones (7 burned), and three miscellaneous unidentifiable bones, all burned. Bison (Bison sp.) remains include a distal metatarsal, middle portion of a phalanx, and three unidentifiable long bone fragments (2 burned). Also recovered from TU 1 were a scapula and 28 miscellaneous fragments (2 burned) representing unidentifiable large mammals.

Test Unit 3 yielded a proximal right tibia and proximal right ulna of mule deer (Odocoileus hemionus) from Level 1 and one indeterminate large mammal long bone fragment from Level 5.

SLR1112: Faunal materials from this site were recovered from two shovel tests and a formal test unit. Shovel Test 3 produced two indeterminate large mammal long bone fragments, and Shovel Test 4, one indeterminate medium-size mammal bone fragment, element unknown. Test Unit 1, Level 5 yielded two deer (Odocoileus sp.) long bone fragments (one exhibiting cut marks), two rib fragments and a metapodial fragment, and 16 miscellaneous bone fragments (5 burned) of unidentified large mammal.

### Flotation Analysis

A single 1.1-liter sample was analyzed from Feature 15 (Test Unit 3), a cobble-filled basin hearth at 5LR1098. This sample yielded six charred goosefoot (Chenopodium sp.) seeds and two charred fragments of poppy (Argemone sp.) seeds. Unburned macrofloral remains representing several other plant species are probably not cultural.

## CHAPTER TEN

### SIGNIFICANCE EVALUATIONS AND EFFECTS ASSESSMENT

#### Significance Evaluations

##### Significance Criteria

The National Register of Historic Places (NRHP) in its modern form was created by the National Historic Preservation Act of 1966. Eligibility criteria are enumerated in 36 CFR 60 (implementing federal regulations) and consist of the following:

The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

(a) that are associated with events that have made a significant contribution to the broad patterns of our history; or,

(b) that are associated with the lives of persons significant in our past; or,

(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 may be likely to yield, information important in prehistory or history.

In order to qualify for National Register eligibility, then, a property must meet two separate types of requirements. It must exhibit integrity of location, design, materials, etc.; and, it must meet one or more of the four additional criteria. The National Historic Preservation Act makes clear that a site need not be of national historic significance to be considered eligible; sites of local, state, and regional importance may also be listed, and thus are significant in the legal sense (McGimsey 1972:112). The phrasing of the National Historic Preservation Act is critical with respect to actual management of cultural resources. A site need not be included on the NRHP to be afforded protection under the law, but must simply meet the requirements of eligibility.

It is obvious from their wording that the implementing regulations were written primarily with historic sites in mind.

Indeed, guidelines for evaluating historic properties are more finely set than for prehistoric properties, and the range of site types that must be considered is somewhat more predictable. Systematic field research in the western United States generally results in discovery of far more prehistoric/American Indian sites than historic/Euro-American sites, but eligibility criteria for such resources remain rather ambiguous. This ambiguity is intentional, for it prevents the exclusion of truly unique sites. Archaeologists must frequently invoke item "d" (above) in significance evaluation: the likelihood of a site to yield information important in prehistory or history. It could be reasonably argued that most or all archaeological sites possess such potential. However, the NRHP was designed to be a selective, rather than comprehensive, listing of cultural properties, and it is incumbent that significance be demonstrated on a site-specific basis.

In order to bring the significance evaluation process into better focus a set of guidelines is presented for prehistoric and historic properties. No specific guidelines have been established for Colorado cultural resources (such as exist in some states) although the Colorado Office of Archaeology and Historic Preservation (OAHHP) has developed a set of regional prehistoric, historic, and historical-archaeological research contexts (Resource Protection Planning Process, or RP-3) that facilitate significance evaluations of specific properties (e.g., Eighmy 1984; Guthrie *et al.* 1984). The guidelines given below reflect the concerns of the OAHHP contexts. They cannot be regarded as immutable, and are not intended to replace or circumvent the established SHPO/Advisory Council review and evaluation process enumerated in 36 CFR 800. Individual cultural resources must be judged ultimately on the basis of their own research merits.

Two classes are identified: those sites that are "generally eligible" and those that are "generally ineligible" for NRHP inclusion. "Generally eligible" sites are those which have the highest probability of furnishing data which may address specific research themes. "Generally ineligible" sites are those with limited or no research potential.

Generally NRHP-eligible prehistoric cultural resources include the following: pre-Paleo-Indian, Paleo-Indian, and Early Archaic sites; site bearing substantial in situ buried deposits; stratified multicomponent sites; communal kill sites; intact rock art sites; complex lithic material quarries; and intact sites with unique qualities. Prehistoric resources that are generally ineligible are isolated artifacts, isolated non-architectural features, strictly surficial artifact scatters or concentrations, and sites of any type damaged by natural or man-induced causes to the extent that their physical integrity is compromised.

Historic cultural resources that are generally NRHP-eligible include sites associated with the fur trade, early exploration,

and pre-1880 military activities; original homestead or ranching sites with intact architecture; sites which are physically intact and representative example of any historic themes pertinent to an area; sites which contain unique or outstanding examples of architectural styles, periods, construction techniques, materials, or craftsmanship; and sites which exhibit historically important engineering features or industrial processes. Historic cultural resources that are generally ineligible include homestead/settlement sites which retain poor integrity, isolated prospect pits and small mines and quarries, and isolated artifacts (Zier et al. 1987:3-4 - 3-7).

#### Site-Specific Significance Evaluations (Table IX)

5LR1095 (Canal remnant): The site does not meet any of the criteria for inclusion in the NRHP. Although the Poudre Valley Canal is an integral part of the early irrigation system that diverted the waters of the Cache la Poudre River onto the arid plains for agriculture, it no longer retains sufficient physical integrity or integrity of setting to convey feeling and association with its period of historic significance, i.e., late 19th century water diversion and irrigation in the Poudre Valley. The close proximity of Colorado Route 14 has adversely affected the integrity of setting of the site. The absence of surface artifacts or associated features indicates that the site has very little likelihood of containing significant buried deposits or materials, or to contribute any important cultural information. Finally, the majority of the canal is intact and still in use east of this segment.

5LR1096 (Historic ditch): The site does not meet any of the criteria for inclusion in the NRHP. It no longer retains sufficient physical integrity or integrity of setting to convey feeling and association with its period of historic significance, i.e., late 19th-early 20th century water diversion and irrigation in the Poudre Valley. The close proximity of State Route 14 and nearby construction have also adversely affected the integrity of setting of the site. It appears that the remainder of the ditch has been destroyed by road building activity. The absence of surface artifacts or associated features indicates that the site has very little likelihood of containing significant buried deposits or materials or of contributing any important cultural information.

5LR1097 (Explosives storage cellar): The site does not meet any of the criteria for inclusion in the NRHP. It no longer retains sufficient physical integrity to convey feeling and association with its period of historic significance, i.e., the construction

TABLE IX

## MANAGEMENT DATA FOR ALL CULTURAL RESOURCES

Permanent Number	Field Number	Investigation Status*	National Register Status**	Effects Assessment (Significant Sites Only)	Management Recommendations***
5LR548	(none)	R	U (originally evaluated as potentially eligible)	Assessment not possible; access to site denied	Final management recommendation not possible; site must be revisited and reassessed for significance
5LR1095	CA-48	R, M, P	N	-	NFA
5LR1096	CA-49	R, M, P	N	-	NFA
5LR1097	CA-50	R, M, P	N	-	NFA
5LR1098	CA-51	R, M, P, T	E	Site would be totally inundated; loss of data through flotation and contamination; inundation and siltation would render site inaccessible	Mitigation: excavation of up to 10 features, supplemented by geomorphological investigation

\* Investigation Status

R = Recorded  
M = Mapped  
P = Photographed  
T = Test Excavated

\*\* National Register Status

E = Eligible for National Register  
N = Not eligible for National Register  
U = Unevaluated

\*\*\* Management Recommendations

NFA = No further action/  
clearance



TABLE IX  
(Continued)

MANAGEMENT DATA FOR ALL CULTURAL RESOURCES

Permanent Number	Field Number	Investigation Status*	National Register Status**	Effects Assessment (Significant Sites Only)	Management Recommendations***
5LR1099	CA-52	R, M, P, T	N	-	NFA
5LR1100	CA-53	R, M, P	N	-	NFA
5LR1101	CA-54	R, M, P	N	-	NFA
5LR1102	CA-55	R, M, P, T	E	Site would be inundated near high water level; loss of data through wave action and contamination	Mitigation: excavation of ca. 10 sq. m. of site area, supplemented by geomorphological investigation
5LR1103	CA-56	R, M, P	N	-	NFA
5LR1104	CA-57	R, M, P	N	-	NFA
5LR1105	CA-58	R, M, P	N	-	NFA

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TABLE IX  
(Continued)

MANAGEMENT DATA FOR ALL CULTURAL RESOURCES

Permanent Number	Field Number	Investigation Status*	National Register Status**	Effects Assessment (Significant Sites Only)	Management Recommendations***
SLR1106	CA-59	R, M, P	N	-	NFA
SLR1107	CA-60	R, M, P	N	-	NFA
SLR1108	CA-61	R, M, P	N	-	NFA
SLR1109	CA-62	R, M, P	N	-	NFA
SLR1110	CA-63	R, M, P, T	E	Site would be partially inundated; loss of data through wave action and contamination	Mitigation: excavation of up to 14 sq. m. in two areas of site
SLR1111	CA-64	R, M, P	N	-	NFA

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TABLE IX  
(Continued)

MANAGEMENT DATA FOR ALL CULTURAL RESOURCES

Permanent Number	Field Number	Investigation Status*	National Register Status**	Effects Assessment (Significant Sites Only)	Management Recommendations***
5LR1112	CA-65			Site would be inundated near high water level; loss of data through wave action and contamination	Mitigation: excavation of ca. 4 sq. m. within shelter, supplemented by geomorphological investigation
5LR1113	CA-66			Site would be partially inundated; loss of data through wave action and erosion of features due to moisture levels; probable exposure to vandalism; possible impacts from reservoir maintenance activities	Mitigation: excavation of 2 sq. m. within Feature 3, accompanied by transit mapping, photography, and archival research
5LR1114	CA-67	R, M, P	N	-	NFA

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TABLE IX  
(Continued)

MANAGEMENT DATA FOR ALL CULTURAL RESOURCES

Permanent Number	Field Number	Investigation Status*	National Register Status**	Effects Assessment (Significant Sites Only)	Management Recommendations***
SLR1115	CA-68	R, M, P	N	-	NFA
SLR1116	CA-69	R, M, P	N	-	NFA
SLR1117	CA-70	R, M, P	N	-	NFA
SLR1118	CA-71	R, M, P	N	-	NFA
SLR1119	CA-72	R, M, P	N	-	NFA
SLR1120	CA-74	R, M, P	N	-	NFA
SLR1121	CA-75	R, M, P	N	-	NFA
SLR1122	CA-73	R, M, P	N	-	NFA

\* Investigation Status

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\*\*\* Management Recommendations

NFA = No further action/  
clearance

TABLE IX  
(Continued)

MANAGEMENT DATA FOR ALL CULTURAL RESOURCES

Permanent Number	Field Number	Investigation Status*	National Register Status**	Effects Assessment (Significant Sites Only)	Management Recommendations***
5LR1123	CA-76	R, M, P	E	Site would be totally inundated; loss of data through deterioration and undermining of structural and other features; inundation and siltation would render site inaccessible	Mitigation: Recording to HAER standards, accompanied by photography and development of historical narrative
5LR1124 through 5LR1141	IF-1 through IF-18	R	N	-	NFA

\* Investigation Status

R = Recorded  
M = Mapped  
P = Photographed  
T = Test Excavated

\*\* National Register Status

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\*\*\* Management Recommendations

NFA = No further action/  
clearance

of State Route 14 in the 'teens and early 1920s. The structure is completely collapsed, and there are no associated diagnostic materials or intact architectural features. Therefore, the site has very little potential to yield important cultural information.

SLR1098 (Prehistoric open camp): Results of test excavation indicate this site has been subjected to one or more degradational episodes which resulted in the loss of stratigraphic integrity among the site's earlier components. However, an undetermined portion of the hearth-type features comprising the site's surface component contain intact subsurface basins or pits. Partial excavation of two such features (12, 15) recovered sufficient quantities of organic fill to allow radiocarbon age estimates and to enable identification of possible food materials (charred seeds) within the feature fill.

Since these features contained identifiable economic floral material in direct association with absolute age estimates, investigation of similar features on site could be expected to yield information important to paleoenvironmental reconstructions and studies of changing subsistence patterns. Furthermore, since diagnostic artifacts recovered from the site indicate that occupation spans the Middle to Late Paleo-Indian period through the Late Prehistoric period, a large sample of radiocarbon dates from the site may in itself be a valuable research tool. Radiocarbon dates from a single site spanning several millennia may indicate periods of possible population expansion and potential hiatuses in the archaeological record.

It is also apparent from test excavations that certain site components probably post-date the degradational event (or events) that affected the site's earlier components. This appears to be true of at least one of three stone circles on site (Feature 26). Excavations within this feature recovered evidence of relatively intensive occupation and the possible presence of a shallowly buried living surface.

Intensive investigation of Feature 26 and other stone circles on the site could be expected to yield information important to the study of functions and cultural affiliations of stone circles as well as intrasite patterning, seasonality, and cultural boundaries. Further multidisciplinary investigation of the site could also be expected to contribute to an understanding of site formation processes and natural factors influencing site preservation in the foothills environment.

Because of the site's demonstrated ability to yield information important to the study of prehistory, and because further work at the site is likely to recover additional significant data, SLR1098 fulfills NRHP Criterion D. The site contains information relevant to a number of RP-3 research topics

for which data are currently incomplete. These include refinement of the local cultural chronology, investigation of changes in subsistence patterns and cultural boundaries and demographic variation, and reconstruction of the paleoenvironmental record. Further work is also likely to contribute to the study of site formation processes and an understanding of natural factors influencing site preservation. For these reasons, site 5LR1098 is assessed as eligible for inclusion in the NRHP.

5LR1099 (Prehistoric open camp/historic structure): The prehistoric component of this site consists of sparse cultural remains of a largely surficial nature. The area has been surface collected by non-archaeologists and exhibits little potential to yield additional important data. The historic component consists of thinly scattered refuse in association with a stone enclosure. The enclosure represents short-term use, cannot be associated with historically significant persons or events, and has been disturbed by livestock. In addition, siltation of portions of the site has occurred due to inundation by Seaman Reservoir. The site does not meet NRHP significance criteria.

5LR1100 (Prehistoric open camp): This small site is largely or entirely a surface manifestation and has little potential to yield important data beyond that recorded at the time of discovery. In addition, the physical integrity of the site area has been seriously compromised as a result of natural erosion and activity of livestock. The site fails to meet NRHP eligibility criteria.

5LR1101 (Historic structures): This site no longer retains sufficient physical integrity or integrity of setting to convey sufficient feeling and association with its period of historic significance, i.e., early 20th century homesteading in the Poudre Canyon area. Structure No. 1 is located approximately 30 meters from Structure 2, which is connected to an occupied 1920s-era residence that has been so extensively remodeled that none of the original superstructure remains. The site therefore has little potential to yield important cultural information, and is assessed as not eligible for NRHP inclusion.

5LR1102 (Prehistoric sheltered site/historic Yauger Homestead): The historic component of the site does not meet any of the criteria for inclusion in the NRHP. It no longer retains sufficient physical integrity or integrity of setting to convey sufficient feeling and association with its period of historic

significance, i.e., early 20th century homesteading and recreation in the Poudre Canyon area. The site is in close proximity to Colorado Highway 14, there are three modern residences within the site boundaries, and there is only one remaining standing structure among the historic features. The historic component has very little potential to yield important cultural information that is not already available in existing documentation.

Test excavations within a small prehistoric rock shelter on the site's western edge demonstrated the presence of stratified cultural deposits to a depth of at least 1.90 m below present ground surface. This is the only multicomponent stratified archaeological site currently known within Poudre Canyon.

Only small portions of two components were sampled during test excavations. The upper component contains extensive burned and unburned large mammal bone and smaller quantities of lithic debitage and flaked stone and ground stone artifacts, including one temporally diagnostic projectile point. The lower component contains a markedly greater frequency of lithic debitage and a possible hammerstone, but no faunal material. Scattered charcoal granules occur throughout both cultural components and although no features were encountered during testing it is likely that hearth areas and other feature types are present. Radiocarbon analysis indicates that the upper component post-dates A.D. 300 while the lower component precedes this date. Although the sample of artifacts is too small to allow conclusive interpretations, there appears to be a significant shift from the nearly exclusive utilization of quartzite in the lower component to chert in the upper component.

Intensive investigation of this site is likely to recover information relevant to several RP-3 research topics for which data are currently incomplete. These include refinement of the local cultural chronology studies of cultural/artifactual taxonomies and changes in subsistence strategies during the Archaic/Late Prehistoric transition, the formulation of cultural boundaries, and site formation processes in colluvial sediments. Investigation of the site may also address the question of whether formative groups actually occupied the foothills region of northeastern Colorado. Since the site is likely to yield information important to the study of prehistory, it fulfills NRHP Criterion D and is assessed as eligible for inclusion in the NRHP. It should be stressed that this assessment of significant pertains only to prehistoric archaeological remains at the site and excludes the historic component.

SLR1103 (Bridge remnants): The site does not meet any of the criteria for inclusion in the NRHP. It no longer retains sufficient physical integrity to convey feeling and association with its period of historic significance, i.e., the Civilian



Conservation Corps recreation projects in the Poudre Canyon in the 1930s. The bridge has been removed and only the stone and concrete pylons and retaining walls remain.

5LR1104 (Bridge remnants): The site does not meet any of the criteria for inclusion in the NRHP. The superstructure and deck have been removed and only the cribbed log supports remain. The bridge therefore does not retain sufficient physical integrity to convey feeling and association with its period of historic significance, i.e., early 20th century homesteading and settlement in Poudre Canyon. The site has very little potential to yield important cultural information. It appears that the bridge was built at an unknown date to gain access to the portion of the land parcel on the north side of the river. There was a building located here that has burned down in recent years. The bridge was probably built by individuals for private use and was not associated with the county or state highway system, or the U.S. Forest Service.

5LR1105 (Historic features): The site does not meet any of the criteria for inclusion in the NRHP. It no longer conveys sufficient physical integrity to convey sufficient feeling and association with its period of historic significance, i.e., the building of tourist and recreation facilities by the Civilian Conservation Corps in Poudre Canyon in the 1930s. There are no longer standing structures, and five small stone and mortar barbecue pits or fireplaces are the only recognizable recreational features. The site appears to have little potential to yield important cultural information.

5LR1106 (Road grade): The site does not meet any of the criteria for inclusion in the NRHP. It no longer retains sufficient physical integrity or integrity of setting to convey feeling and association with its period of historic significance, i.e., early 20th century transportation systems in the Poudre Canyon area and early water facilities for the City of Fort Collins. It appears that the remainder of the road has been destroyed during various construction episodes at the Water Filtration Plant and the Fort Collins Mountain Park in 1935-1936. Other than a dry-laid masonry retaining wall, there are no associated features or surface artifacts. Therefore, the site has very little potential to yield important cultural information that is not already included in existing documentation.

5LR1107 (Historic structures/Greyrock Lodge): The site does not meet any of the criteria for inclusion in the NRHP. Although the cabins represent early recreational use of National Forest lands and the associated summer residence program encouraged by the Forest Service in the 1920s and 1930s, they are common examples of this theme and are numerous in the Arapaho-Roosevelt National Forest and other national forests throughout the United States. They are not associated with the lives of persons significant in our past. The cabins do not embody the distinctive characteristics of a type, period, or method of construction. Finally, the site has very little potential to yield important cultural information not already available in existing documentation.

5LR1108 (Prehistoric open lithic scatter): This small site consists of very sparse surface artifacts and exhibits little potential for intact buried cultural deposits. It is unlikely to yield important prehistoric data beyond that gleaned at the time of recording. It therefore does not meet NRHP eligibility criteria.

5LR1109 (Prehistoric open lithic scatter/stone circle): This site is sparsely manifested on the surface and has little potential for intact buried cultural deposits. Surface disturbance is evident in the form of scattering of parts of the stone circle. The site has minimal potential to produce important data beyond that collected at the time of recording and does not meet NRHP eligibility criteria.

5LR1110 (Prehistoric open lithic scatter/stone circle): Test excavations conducted on this site demonstrated the presence of at least one shallowly buried cultural component represented by lithic debitage and one utilized flake. Soils on site exceed 0.75 m in depth and it is possible that additional buried components, not located during the limited testing program are present. Results of test excavations indicate subsurface material occurs within Feature 1, a stone circle, and in portions of the site where surface artifacts are not present.

Intensive investigation of this site is likely to yield information relevant to certain RP-3 research topics for which data are currently incomplete. These include the formulation of cultural boundaries, studies of settlement/subsistence patterns, and site formation processes. Since the site is likely to yield information important to the study of prehistory by addressing the above research topics, 5LR1110 fulfills NRHP Criterion D and is recommended for inclusion in the NRHP.

5LR1111 (Historic structures/homestead): The site does not meet any of the criteria for inclusion in the NRHP. It no longer retains sufficient physical integrity to convey sufficient feeling and association with its period of historic significance, i.e., late 19th-early 20th century homesteading in the Poudre Canyon region. The site is not associated with significant individuals in our past. It has no particular architectural significance due to the scant physical remnants. Shovel testing revealed that buried materials occur at the site, but it is not believed that these materials or deposits would yield information not available in existing documentation (i.e., complete homesteading records in the National Archives, Washington, D.C.). Finally, the William Poland Homestead (5LR1113), located about two miles to the north, is a better representative of the same historic themes and has more intact and complex physical remains.

5LR1112 (Prehistoric rock shelter): Test excavation demonstrated the presence of two buried cultural components within this rock shelter. The upper component contains flaked stone and ground stone artifacts, faunal remains, a basin-type feature, and a possible structural feature of stone and timber. The lower component appears partially eroded by alluvial action. Occupation is evidenced by the remnant of an artificial pit with oxidized sediments. Site stratigraphy is exceptionally well developed and represents distinct and divergent depositional environments.

The pit-type feature with the upper cultural component (Feature 1) yielded identifiable faunal remains and is likely to contain adequate amounts of charcoal for a reliable radiocarbon date. Approximately two-thirds of this feature remain unexcavated. Portions of timbers comprising the structural remnant (Feature 2) are intact and uncarbonized. Only a small portion of this feature was exposed during test excavation. The artifact assemblage associated with these features indicates intensive and diverse utilization of the rock shelter. Further investigation of the upper cultural component could be expected to yield information relevant to several RP-3 research questions for which data are currently incomplete. These include development of cultural/artifactual taxonomies, the formulation of cultural boundaries, refinement of the local cultural chronology, and studies of subsistence strategies from the context of a single component.

Although the lower cultural component appears heavily disturbed within the tested portion of the site, intact portions of this component may be present near the rear wall of the rock shelter. Intensive investigation of intact portions of this component would potentially address the same research topics outlined above, from the context of a stratified site. Investigation of either component might also yield information on

whether formative groups actually occupied the foothills region of northern Colorado.

Furthermore, investigations in archaeological and environmental contexts could be expected to yield information of local climatic variations and cycles and possible changes in settlement/subsistence strategies in response to climatic variations. Such investigations would also contribute to an understanding of site formation processes and natural factors influencing site preservation in Front Range canyons.

Because of the site's demonstrated ability to yield information important to the study of prehistory, and because further work at this site is likely to yield additional significant data, 5LR1112 fulfills NRHP Criterion D. The site contains data relevant to a number of RP-3 research topics for which data are currently incomplete. For these reasons the site is assessed as eligible for inclusion in the NRHP.

5LR1113 (Historic structures/William Poland Homestead): The site is considered eligible for the NRHP under Criterion A (associated with events that have made significant contributions to broad patterns in history), because it represents one of the earliest homesteading endeavors in the Cache la Poudre area. The site was strategically located so that it could have been accessed from the Overland Trail to the east, the Cherokee Trail to the north, and an early stage and wagon route through nearby Livermore. The physical evidence also suggests that several subsistence strategies were used, including trapping, farming/ranching, and perhaps logging. The site also appears to be eligible under NRHP Criterion D due to the potential for buried deposits and materials that could contribute additional useful information about the lifeways and habits of the occupants of this early homestead. Shovel probes recovered buried materials in at least one area of the site, and a deep ravine near the site's largest foundation contains evidence of buried refuse deposits. Furthermore, since remnants of floor joists are present within one early structure, the potential exists for sealed deposits associated with the building's construction.

5LR1114 (Historic structures): The site does not meet any of the criteria for inclusion in the NRHP. It no longer retains sufficient physical integrity to convey feeling and association with its period of historic significance, i.e., early 20th century homesteading and settlement of the Poudre Canyon area. The main feature, a cabin with stone fireplace and chimney, has burned to the ground. The paucity of surface artifacts and poor soil deposition do not suggest the existence of significant buried deposits or materials. Therefore, the site has very

little potential to yield important cultural information not available in existing documentation.

5LR1115 (Cellar hole/homestead remnant): The site does not meet any of the criteria for inclusion in the NRHP. It no longer retains sufficient physical integrity to convey feeling and association with its period of historic significance, i.e., early 20th century homesteading and settlement of the Poudre Canyon area. The site consists of just one rock-lined building foundation with no associated features or artifacts. Therefore, the site has very little potential to yield important cultural information that is not available in existing documentation.

5LR1116 (Mine and tailings): The site does not meet any of the criteria for inclusion in the NRHP. It consists of a collapsed adit and associated ore dump with no associated features or artifacts. Prospects and exploratory shafts and adits are common in the Poudre Canyon area, due to the generally unsuccessful search for precious metals spurred by short-lived finds at Teller City, Lulu City, Manhattan, and other small gold and silver camps in the region. Prospecting continued throughout the last quarter of the 19th and into the early 20th century. The site is in close proximity to Colorado Highway 14 and therefore has poor integrity of setting. It no longer retains sufficient physical integrity or integrity of setting to convey feeling and association with its period of historic significance, i.e., late 19th-early 20th century mining for precious metals in the Rocky Mountain West. The site has very little potential to yield important cultural information.

5LR1117 (Historic features): The site does not meet any of the criteria for inclusion in the NRHP. It is a single stock watering or water storage facility with no other associated features or artifacts of note. Therefore, the site has very little potential to yield important cultural information.

5LR1118 (Historic feature): The site does not meet any of the criteria for inclusion in the NRHP. It appears to be less than 50 years of age and has poor physical integrity. The site has very little potential to yield important cultural information.

5LR1119 (Stone and timber fence/wall): The site does not meet any of the criteria for inclusion in the NRHP. Although it probably dates from and is representative of early ranching

activity in the area, its exact origin and usage are unclear. It retains poor physical integrity due to its advanced state of decay and disrepair. There are no associated features or artifacts and the site has little potential to yield important cultural information.

5LR1120 (Historic cabin): This site does not meet any NRHP eligibility criteria. It is not associated physically with other physical remains, nor can it be associated historically with significant persons or events. Its physical integrity has been compromised as a consequence of natural decay processes. It possesses little potential to yield important information beyond that already recorded.

5LR1121 (Historic Mine): The site does not meet any of the criteria for inclusion in the NRHP. It is a relatively small prospect with no associated features or artifacts. It is a common example of the late 19th-early 20th century search for precious metals spurred by short-lived gold and silver discoveries at Teller City, Lulu City, Manhattan, and other small camps. It may also be related to early 20th century mica exploration in the immediate area. The site has very little potential to yield important cultural information.

5LR1122 (Prehistoric stone circle/open lithic scatter): This small site exhibits sparse artifactual material and appears largely surficial in nature. The potential for intact, subsurface cultural deposits is minimal. It is unlikely to yield important prehistoric data beyond that gleaned at the time of recording. It therefore does not meet NRHP eligibility criteria.

5LR1123 (City of Fort Collins Water Filtration Facility): This site is considered eligible for the NRHP under Criterion A (associated with events that have made significant contributions to broad patterns in history) because it is a key component in the early and evolving history of the Fort Collins Municipal Water System. The site is also architecturally significant under Criterion C because it embodies "...the distinctive characteristics of a type, period, or method of construction" (National Park Service 1982:1). Portions of the complex date from the early 20th century and still retain sufficient physical integrity to convey feeling and association with the site's period of historic significance, i.e., the early history of the Fort Collins municipal water supply. Early or original equipment contained within the buildings may also have engineering historical significance. Physical modifications to the plant

over the last 80 years graphically depict the evolution of water purification technology through the 20th century.

### Isolated Finds

None of the 18 isolated finds is assessed as eligible for NRHP inclusion. All isolates are surface manifestations which possess little or no potential to yield additional cultural data from buried contexts. All significant information at these localities was gleaned at the time of recording (see NRHP significance criteria, above).

## Assessment of Effects

### Criteria of Effect

In the context of the Section 106 compliance process, as mandated by the National Historic Preservation Act of 1966 (as amended), two types of effect are identified. An undertaking is regarded as having an effect on a cultural property if it alters any of the characteristics that may qualify the property for National Register of Historic Places inclusion. An adverse effect is that which diminishes the integrity of any of these characteristics. Application of these criteria of effect will result in any of three possible findings: no effect, no adverse effect, or adverse effect. As defined, adverse effects can only be incurred by significant cultural resources, and the following discussion thus focuses on the six significant sites identified within the project boundaries: 5LR1098, 5LR1102, 5LR1110, 5LR1112, 5LR1113, and 5LR1123. An undertaking is always considered to have no adverse effect or no effect (if the property is altogether unaltered) if it is not significant (Table IX).

### 5LR1098

Construction of the proposed mainstem reservoir would inundate this site permanently. Since it is unlikely that the reservoir would ever be drained to a level that would expose 5LR1098, the site would become inaccessible for further investigation. In addition to preventing access to important data, the long-term effects of permanent inundation may be highly destructive.

Among the probable adverse effects of permanent inundation are the transportation of charcoal, charred seeds and other organic material out of cultural features and away from the site through the process of flotation. The site has probably been

affected in this manner and an indeterminate amount of data lost through intermittent inundation by Seaman Reservoir. Permanent inundation would accelerate this process, possibly to the extent that, if the site were again accessible in the future, its major research potential would have been lost.

A second potential adverse impact which could result from permanent inundation is particulate contamination of charcoal by water-borne materials. This type of contamination would affect charcoal fragments too large to be disturbed by flotation. At this time there appear to be no sources of potential contaminants, such as coal deposits or asphalt, located within the watershed area, but such contaminants could be introduced to the area in the future.

Finally, inundation by the proposed reservoir could eventually deposit such quantities of silt that if the site area were exposed in the future, investigation of the site would remain impracticable. For these reasons, permanent inundation of the site by the proposed mainstem reservoir should be viewed as tantamount to site destruction.

#### SLR1102

This site is located just below the projected normal high water line of the proposed mainstem reservoir. Consequently, it would be affected by rising and falling water levels, and particularly by shoreline wave action. Given the location near the upstream end of the proposed reservoir, these impacts would probably result in gradual erosion of the site sediments.

It is likely that the upper prehistoric cultural component in the rock shelter would become exposed and eventually displaced. Erosional threats to the lower cultural component are less severe owing to the size and quantity of colluvial materials overlying this component. However, particulate contamination of charcoal within this component by water-borne materials is possible. Considering the volume of recreational activity that would probably occur upstream from the mainstem reservoir, the likelihood of carbon or petroleum-based deposits occurring in sufficient quantities to contaminate cultural deposits seems good.

The most direct threat is to the upper cultural component. However, since the site's greatest potential contribution is to the study of changes in prehistoric lifeways through time, destruction of the upper component diminishes what can be learned from the lower components. Similarly, investigation of the upper component alone would fail to allow the site's full research potential to be realized. Inundation of the site by the mainstem reservoir should therefore be regarded as equivalent to destruction.



SLR1110

This site is located at and immediately below the high water line of the proposed mainstem reservoir. Consequently, the site area would be subjected to the effects of rising and falling water levels including shoreline wave action. This would result in gradual erosion of site sediments. These erosional process would probably exert the greatest effect on the site's sandy loam topsoil.

Since the buried cultural component occurs within the upper 12 cm of topsoil, it is likely that this component would become exposed and eventually displaced through erosion. The potential of the site to contribute to the study of prehistory lies in the investigation and interpretation of this buried component. Therefore, inundation of the site should be considered tantamount to destruction.

SLR1112

This site is located just below the normal high water line of the proposed mainstem reservoir. Consequently, the site would be subjected to the effects of rising and falling water levels including shoreline wave action. The site is located near the upstream end of the North Fork channel of the proposed reservoir, and would probably be affected by gradual erosion of site sediments. The upper 60 cm of sediments, which are comprised of fine sands, silts and clays, would be particularly prone to erosion by alluvial action. Such erosional processes would eventually expose and displace the upper cultural stratum. It is uncertain what effect, if any, this process might have on the site's lower cultural component. However, destruction of the upper cultural component(s) would preclude comparison of stratigraphic changes within the site and thereby reduce significantly the site's research potential.

The most direct potential threat is to the upper cultural component. The site's greatest potential contribution to the study of prehistory is the investigation and interpretation of this undisturbed cultural stratum. Inundation of the site should therefore be considered tantamount to destruction.

SLR1113

This site is located both above and below the projected normal high water line of the proposed mainstem reservoir. Therefore, the site area would be subjected to rising and falling water levels and attendant shoreline wave action. In addition to the gradual erosion of site sediments, these impacts would result in marked fluctuations in the moisture levels of timbers and

lumber comprising certain features and could be expected to accelerate the displacement of cellar holes and foundations through slumpage. Given the site's location near the upstream end of the North Fork channel of the mainstem reservoir, secondary threats may occur as a result of reservoir maintenance activities. These would include the upgrading of existing access roads through the site area and possible removal of structures or portions of structures by maintenance personnel. The site would also be threatened by vandalism because of increased public access.

The site's potential to contribute to the study of history lies in the investigation and interpretation of the spatial and temporal relationships among its various structural features. Therefore, inundation should be considered the equivalent of destruction.

#### SLR1123

This site is located at the confluence of the main channel of the Cache la Poudre River with the North Fork. Construction of the mainstem reservoir would result in inundation of the site in water more than 200 feet deep. Once flooded, the site would not likely be reexposed except in the event of a near-total draw-down of reservoir waters.

The significance of SLR1123 lies principally in its architectural attributes, and secondarily in the presence of certain engineering and equipment features. Although inundation would have little short-term adverse effect other than prevention of access, the long-term effects would be severe and irreversible. Structures would decay under such conditions, and iron and steel equipment or building components would rust. In addition, building foundations would likely be undermined as a result of saturation, possibly resulting in structural collapse. Finally, long-term inundation would result in burial of the site beneath a mantle of silt, further hindering access.

For these reasons, construction of the mainstem reservoir must be regarded as destructive with respect to SLR1123.

## CHAPTER ELEVEN

### MANAGEMENT RECOMMENDATIONS AND MITIGATION MEASURES

#### Options for Impact Mitigation

The term "mitigation" refers to actions that reduce or compensate for the adverse effects to a significant historical or archaeological property that result from an undertaking (Advisory Council on Historic Preservation 1986:36). Mitigation measures may include:

- (1) Limiting the magnitude of the undertaking;
- (2) Modifying the undertaking through redesign or reorientation of construction on the project;
- (3) Repair, rehabilitation or restoration of an affected historic property;
- (4) Preservation and maintenance of affected historic and archaeological properties;
- (5) Documentation (drawings, photographs, histories) of buildings or structures that must be destroyed or substantially altered;
- (6) Relocation of historic properties; and
- (7) Salvage of archaeological or architectural information and materials (data retrieval).

Avoidance of significant cultural resources is always the preferred mitigation recommendations (cf. #4, above), since it ensures their continued existence. Avoidance is often not feasible, however, and in such cases mitigation will usually consist of some form of data retrieval prior to impact. On prehistoric sites, this may include partial or complete excavation, intensive instrument mapping, controlled surface collection, or some combination thereof (e.g., mapping in conjunction with surface collection). On historic sites, this may include architectural or engineering drawings, intensive photo documentation of structures, archival research, and occasionally, partial or complete excavation of site elements. Analysis and reporting of data are an integral part of this form of mitigation.

## Management Recommendations for Significant Sites

Mitigation measures are proposed for the six National Register-eligible sites identified during the Class III inventory (Table IX). These measures assume that avoidance is not a feasible alternative, i.e., that the mainstem reservoir will be created as presently proposed, and that some form of data retrieval will be necessary at each site. The recommendations emphasize field data retrieval, but in all cases assume that complete data analysis and reporting will also be conducted. Cost estimates are based, to the extent possible, on experience with similar sites in comparable settings. They are only estimates, however, and do not reflect SHPO or Advisory Council input to significance assessments or mitigation recommendations. If the scope of mitigation required at a particular site changes, mitigation costs will increase or decrease accordingly. The accuracy level of mitigation costs is set at 25%, i.e., actual costs can be expected to vary up to 25% from those given. Costs are given in 1988 dollars.

### 5LR1098

Test excavation results in combination with data about surface artifact distribution suggest that 5LR1098 is comprised of a series of spatially discrete features superimposed on a single horizontal surface, probably representing numerous occupational episodes. At least 10,000 years of intermittent habitation is apparent. Spatial (horizontal) integrity is good. Surface trend analysis indicates that seven or more clusters of features--primarily hearths but also including stone circles--are present.

Mitigation should emphasize excavation of intact features. Approximately 10 of the 90+ features visible on the surface, representing all of the identifiable activity areas/feature concentrations, should be fully excavated. Feature 26, a stone circle with an apparently intact occupational surface that was test excavated in 1987, should be included in the sample. Hearth excavation units in three areas of the site (east side, central area, west side) should be extended vertically until the ancient Pleistocene river channel fill deposits, consisting of stream-rounded cobbles and boulders underlying the fine-grained terrace mantle, are encountered. Hearth and stone circle excavation should include bulk soil retrieval for both flotation of macrofloral remains and extraction of small artifacts (e.g., through fine water screening). Archaeological excavation of the site should be supplemented by additional geomorphological investigation, both in the site area proper and along the lower reaches of the North Fork generally. This study would serve to refine the present interpretation of the development of the terrace upon which the site is situated (McFaul *et al.* 1988) and would facilitate comparison with general stream terrace

development processes of the region. Mitigative excavation at SLR1098, must be undertaken when reservoir waters are low enough to expose the site surface and to allow deep probes into the ancient stream channel (+/- 2 m) without flooding the pits.

Total estimated cost of mitigation, including analyses and reporting: \$10,000.00.

#### SLR1102

Test excavations demonstrated the existence of at least two stratigraphically distinct prehistoric components, the lower component deeply buried at 1.1-1.7 meters below the surface. The central rock shelter area (vicinity of Test Unit 1) has been shown to be disturbed within 20 cm of the surface and exhibits abundant historic refuse. Lateral areas, to the north and south, display greater integrity.

Intensive excavation should focus on these lateral areas within the shelter. Two small excavation blocks, each consisting of two contiguous units, should be placed in each area. Because of the considerable depth of cultural deposits and attendant problems working in confined space, individual units should measure minimally 1.5 m X 1.5 m. Thus, each block would have overall horizontal dimensions of at least 1.5 m X 3.0 m. In addition, a 1 m X 1 m test unit should be placed in a small, shallow rock shelter immediately upslope and east of the main shelter, to ascertain the presence of buried cultural deposits there and the relationship between any such materials and those in the principal excavation area. All units should be excavated until sterile soil is reached.

Excavation should incorporate total bulk soil retrieval from one 1.5 m X 1.5 m unit for purposes of flotation and fine water screening. This would allow comprehensive retrieval of macrofloral remains, small artifacts (e.g., microliths), gastropods, and if needed, charcoal for radiocarbon analysis. Excavation should also include geomorphological analysis of site deposits and general site setting.

Total estimated cost of mitigation: \$40,000.00

#### SLR1110

Testing indicated the presence of a probable buried activity locus associated with Feature 1, a stone circle situated near the southern edge of the site, and probable intact cultural deposits in the central site area in the vicinity of Test Unit 1. Mitigation should focus on these two areas. Up to one-half of the interior of Feature 1, plus contiguous exterior areas,

totaling eight square meters should be excavated to sterile soil. A contiguous block of four to six square meters should be excavated in the central site area, with final block size determined by the nature and volume of cultural materials encountered. Excavation should include selective bulk soil retrieval within the stone circle and in any subsurface features such as hearths.

Total estimated cost of mitigation: \$8,000.00

#### SLR1112

Testing indicated that two prehistoric cultural components are buried in alluvium within a rock shelter at this site. The upper component, between 50-57 cm below the surface, is the principal occupation horizon and consists of a variety of artifacts and bone, at least one probable hearth, and a possible structure of stone and timber. The lower component is not as well defined and consists of only sparse cultural materials. It is at a depth of 1.2-1.3 meters. Testing outside of the shelter failed to produce archaeological materials, suggesting that occupational evidence is very restricted horizontally.

Mitigation should be concentrated entirely within the shelter. A single contiguous block should be excavated adjacent to and north of Test Unit 1 in order to maximize the possibility of exposing additional portions of Features 1 and 3, the hearth and possible structure, originally encountered during testing. A block four square meters in surface area should be excavated; if buried feature position so dictates, this block may be placed such that it "wraps around" the north and west sides of Test Unit 1, thus presenting an "L" configuration. The block should be excavated vertically until sterile alluvium is reached. It may be necessary to partially or completely shovel out the fill in Test Unit 1 (which was backfilled following testing) because the soft, unconsolidated sands may tend to slump when reexposed.

Excavation should include total bulk soil retrieval from one 1 m X 1 m unit within the block for flotation and fine water screening. Geomorphological analysis of site and surroundings should also be conducted in an effort to place the site in a proper context relative to stream terrace development and channel changes.

Total estimated cost of mitigation: \$28,000.00

SLR1113 (William Poland Homestead)

This site consists of structural and non-structural remains, including artifacts, associated with late 19th century - early 20th century homesteading. No formal testing was conducted, although several shovel probes were excavated at the time of recording.

Recommended mitigation measures include excavation of a single 1 m X 2 m unit into cultural fill within Feature 3, a large structure foundation, accompanied by detailed transit site mapping, 4" X 5" large-format photography of prominent features, inscriptions, and drawings, and additional historical records research including investigation of complete homestead records available in the National Archives, Washington, D.C.

Total estimated cost of mitigation: \$5,000.00

SLR1123 (City of Fort Collins Water Filtration Facility)

This site consists of a recently abandoned filtration plant and related improvements, dating back to 1918. Mitigation should consist of full recording to Historic American Engineering Record (HAER) standards, including 4" X 5" large-format photography of all features (including interiors and equipment), and development of a complete historic narrative. Because of the extensive modifications to the plant since its inception, original building plans and records should be consulted to verify dates of construction of the various components.

Total estimated cost of mitigation: \$3,500.

Management Recommendations for  
Non-Significant Cultural Resources

No legal basis exists for protection or other mitigative actions at non-significant cultural resources once intensive inventory and significance evaluations have been completed. All important information has been recovered from these localities, and no further management actions are recommended. This recommendation pertains to the 23 non-significant sites recorded during the Class III survey, and extends to all 18 isolated finds (Table IX).

CHAPTER TWELVE  
FEASIBILITY ASSESSMENT

General Statement of Feasibility

Construction of the mainstem reservoir (Cache la Poudre Hydroelectric Project Stage 1) would affect at least 30 cultural resources. Twenty-nine were recorded as a result of intensive inventory for the present undertaking; the remaining site was recorded previously but could not be revisited during recent fieldwork because of denial of access by a private landowner. An area totaling 300 acres in two separate parcels has not been inventoried, again due to access limitations. There is reason to believe (Chapter 4) that cultural resources are present in some unsurveyed areas. However, site numbers, types, and significance levels cannot be accurately estimated at present.

Of 29 recently recorded sites for which data are complete, 17 occur within the mainstem reservoir floodpool regardless of damsite option (i.e., are located upstream from the Poudre damsite, the more westerly of the two damsite alternatives). Five sites lie within the floodpool that would be created if the downstream Grey Mountain damsite were used (i.e., are located between the two damsites). Seven known sites are within the half-kilometer-wide buffer area but are located above the proposed reservoir high water mark. These sites would not be inundated, but could sustain secondary impact as a result of the project, for example vandalism due to improved public access for recreation. Eventual direct impacts to some are possible from ancillary facilities, right-of-way relocations, etc.

Of greater importance to the study of feasibility are the numbers, nature, and locations of significant cultural resources. Six of 29 fully recorded sites are assessed as eligible for National Register inclusion. All are within the reservoir floodpool and would therefore be inundated. Because all are located above the Poudre damsite, potential impacts to this group of sites are identical regardless of which damsite is chosen.

Irreversible impacts to these sites would occur, and all such impacts are considered to be the equivalent of destruction (Chapter 10). However, timely mitigation action in the form of data retrieval (excavation, mapping, photo-documentation, archival research) (Chapter 11) would serve as an alternative to modification or abandonment of project designs which should eventually result in agency determinations of "no adverse effect".

No cultural resources within or near direct impact areas associated with Stage 1 facilities are currently enrolled on the National Register of Historic Places. Impacts to significant



sites can be effectively mitigated through standard data retrieval techniques. Impacts to sites in as-yet-unsurveyed areas cannot be estimated.

#### Mitigation Costs

Estimated costs of mitigation in 1988 dollars are given on a site-by-site basis for six known, significant cultural resources in Chapter 11. Cost estimates for individual sites range from \$3,500 to \$40,000, with an accuracy level of 25%. The estimated total cost of mitigation is \$94,500. With the stated accuracy level, actual costs may be expected to fall within the \$71,000 - \$118,000 range.

CHAPTER THIRTEEN  
SUMMARY AND CONCLUSIONS

Cultural Summary

The preceding text has presented the results of intensive archaeological survey and test excavations within portions of lower Poudre Canyon and the canyon of the North Fork of the Cache la Poudre River in the northern Colorado Front Range. Twenty-nine archaeological sites were recorded, of which 20 are historic and nine are prehistoric. Historic sites include remnants of bridges, roads, canals, water treatment facilities, and mines, as well as early homestead sites and recreational cabins and campgrounds constructed prior to 1945. The earliest reliable age estimate for an historic structure recorded in the study area is a carved inscription of 1889 found on a remnant of a log structure on site 5LR1113, located along the North Fork of the Cache la Poudre River.

Prehistoric sites recorded within the study area include open and sheltered campsites, open campsites with stone circles, open lithic scatters, and open lithic scatters with stone circles. Test excavations were conducted at five prehistoric sites: 5LR1098, 5LR1099, 5LR1102, 5LR1110, and 5LR1112. Radiocarbon age determinations were obtained for three of these sites (5LR1098, 5LR1102, and 5LR1112). All radiocarbon dates fall within the Late Prehistoric stage (date range of 1650 +/- 50 B.P. to 570 +/- 60 B.P.). However, at two tested rock shelter sites (5LR1102 and 5LR1112), undated components occur stratigraphically below dated ones. Artifactual materials recovered from site 5LR1098 indicate that occupation there occurred initially during the Middle Paleo-Indian period, approximately 9,000 - 10,000 years B.P., and continued at least intermittently through the succeeding Late Paleo-Indian period and Archaic stage, up to and through the Late Prehistoric stage.

All prehistoric sites within the study area appear to represent a hunting and gathering lifeway. Evidence of tool manufacture and maintenance, butchering and cooking of mule deer and bison, and preparation of vegetal foods, are apparent from the of data gathered.

Both prehistoric and historic sites tend to cluster strongly along the terraces of the Cache la Poudre and North Fork of the Cache la Poudre Rivers. Consequently, an undetermined segment of the prehistoric record in Poudre Canyon has probably been destroyed by recent development along major segments of the canyon floor as well as intermittent severe flooding by the Cache la Poudre River.

Archaeological remains along the surveyed portion of the North Fork of the Cache la Poudre River do not appear to have been seriously affected by either historic development or flooding. However, test excavations at site 5LR1112 indicate that in certain localities earlier portions of the archaeological record may have been destroyed by the normal channel-cutting processes of the North Fork of the Cache la Poudre River.

One previously recorded site (5LR548) located within the Class III study area could not be examined or re-evaluated due to denial of access by the landowner. The site was evaluated as potentially eligible for nomination to the NRHP in 1978, but test excavations would be necessary to facilitate an updated assessment of significance.

Eighteen isolated artifacts were recorded in addition to prehistoric and historic sites discussed above. Eight are of prehistoric affinity and 10 are historic. The majority of historic IFs are small prospect pits unassociated with artifacts or other features. Small dry-laid masonry retaining walls, remnants of a foot bridge, a cairn with an upright timber, and a cast iron horseshoe were also recorded as historic IFs.

Prehistoric IFs include isolated pieces of lithic debitage and isolated lithic and ground stone tools or tool fragments. Although the sample of prehistoric sites and IFs is small, marked differences are apparent in the distributions of these two groups in relation to certain environmental variables. Prehistoric sites tend to cluster strongly near the floodplains of the Cache la Poudre and North Fork of the Cache la Poudre Rivers, while prehistoric IFs tend to occur farther from drainages of all ranks. Prehistoric sites occur with a mean vertical distance of 19 meters and a mean horizontal distance of 62 meters from drainages of all ranks. Standard deviations from the means are 17.50 meters and 24.50 meters, respectively. Prehistoric IFs occur with a mean vertical distance of 51 meters and a mean horizontal distance of 192 meters from drainages of all ranks, Standard deviations from the means are 44 meters and 152 meters, respectively.

These distributional patterns suggest that while the entire range of microenvironments within the study area was probably utilized by prehistoric groups for resource procurement and execution of expedient tasks, campsites were confined to the canyon floors. The absence of prehistoric sites on canyon rims further suggests that proximity to water was a major constraint on prehistoric settlement patterns.

Site 5LR1098 contains the greatest density of cultural features and artifacts and also exhibits the greatest temporal span of prehistoric sites within the study area. It is probably significant that this site is located just above the confluence of the Cache la Poudre and North Fork of the Cache la Poudre Rivers. Two other major prehistoric campsites are known within

the Poudre Canyon: the Gueswel site (5LR512) and site 5LR532. The Gueswel site is located immediately west of the study area at the confluence of Gordon Creek, a perennial stream, and the Cache la Poudre River. Site 5LR432, located approximately 15 miles upriver from the Gueswel site, is situated at the confluence of Elkhorn Creek, a perennial tributary, and the Cache la Poudre River. These are the only recorded sites within Poudre Canyon known to have yielded ceramic artifacts (Grant 1978).

The occurrence of large base camps exclusively at the confluences of the Cache la Poudre River and its larger south-flowing perennial tributaries suggests that major route of travel into the canyon may have been along the northern tributaries rather than along the river itself. This would mirror the historical difficulties encountered in traversing the canyon from east to west. Early travelers entered the upper canyon from the north by way of the Red Feather Lakes and Manhattan Roads. The location of large base camps at the confluences of south-flowing tributaries suggests that prehistoric groups may also have chosen the less difficult northern routes into Poudre Canyon. Obviously, further research is needed to understand conclusively the dynamics of prehistoric settlement and subsistence strategies along the Cache la Poudre and North Fork of the Cache la Poudre Rivers.

#### Management Summary

Twenty-nine sites and 18 isolates were recorded during a Class III cultural resources survey of Stage 1 areas of the Cache la Poudre Hydroelectric Project. A total of 6,390 acres was surveyed within the study area, which includes both direct impact (inundation) and buffer zones. An additional 300 acres within the project area boundaries could not be surveyed due to denial of access, and it is not known if cultural resources occur in these locales. Five sites, all prehistoric, were test excavated to facilitate evaluations of National Register significance.

Six sites are assessed as meeting National Register significance criteria. Four are prehistoric; they include a large, complex multicomponent open camp, a small open camp that may be single-component, and two rock shelter sites exhibiting stratified deposits. The remaining significant sites are historic and consist of a late 19th - early 20th century homestead and a 20th century water filtration plant with related facilities. No sites in the immediate project vicinity are currently enrolled in the National Register.

All significant sites are located in direct impact areas, and would be partially or completely inundated if Stage 1 facilities are constructed. Because all are located above the more upstream of the two alternative damsites (Poudre damsite), impacts to these sites would be the same regardless of the

alternative chosen. Inundation would be tantamount to destruction at all six localities, and avoidance/protection are not feasible management actions unless project designs are seriously altered or abandoned. Mitigation recommendations for all sites therefore consist of several forms of data retrieval including excavation, mapping, photodocumentation, or historic archival research, or various combinations thereof. Estimated mitigation costs for individual sites range between \$3,500 and \$40,000 with a total estimated cost of \$94,500 (1988 dollars).

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APPENDIX A  
TABULAR HISTORY OF LAND SETTLEMENT

TABLE A-1

GENERAL LAND OFFICE (GLO) ENTRIES

Key to Table Abbreviations

CE Pat	Cash Entry Patent
DLE Pat	Desert Land Entry Patent
EO	Executive Order
FX	Forest Exchange
HE Pat	Homestead Entry Patent
M&B	Metes and Bounds
ME Pat	Mineral Entry Patent
MIL Pat	Military Patent
O	Order
PLO	Public Land Order
PS	Public Sale
R&PP	Recreation and Public Purposes
SG	State Grant
SLUP	Special Land Use Permit
SRHE Pat	Stock Raising Homestead Entry
SS	State Selection
TC Pat	Timber Culture Entry Patent

Note: land entries are presented in chronological order by township, range, and section according to project areas.

I. STAGE 1 - MAINSTEM RESERVOIR

T8N-R70W

<u>Sec.</u> 4-6, 9, 10, 14, 15	R/W Greeley, Salt Lake & Pacific Railroad (#D 025097); 9/6/1883; cancelled 3/22/1919.
<u>Sec.</u> 4, S-1/2/NE, SE-1/4, Lots 1, 2 2, all 3, all 9, NE-1/4, N-1/2/SE	SS Agricultural College (#1), patented 2/1/1886; set aside for agricultural college.

I. STAGE 1 - MAINSTEM RESERVOIR (continued)

T8N-R70W (continued)

- 10, NW-1/4,  
NE/SW,  
NW/SW,  
SE/SW,  
NW/SE,  
SW/SE
- 11, NW/NE,  
SW/NE
- 12, SW/SW,  
SE/SW
- 13, NE/NW,  
NW/NW,  
SE/NW
- 15, NW/NE
- Sec. 4-6, 9, 10, R/W Greeley, Salt Lake & Pacific Railroad  
14, 15, 23-25 (#D 0205097); 6/29/1889; cancelled 3/22/1919.
- Sec. 4, NW/NW, HE (#D 03527); 120 ac., filed 4/9/1908;  
SW/NW, relinquished 1/25/1909.  
SE/NW
- Sec. 4, NW/NW, HE (#D 013759); 140.24 ac., filed 7/19/1910;  
SW/NW, relinquished 1/20/1913.  
5, SE/NE,  
SW/NE
- Sec. 4, NE/SW, HE Pat (#518115); 160 ac., patented 3/9/1916;  
SE/SW, Fred Stearley.  
9, NE/NW,  
SE/NW
- Sec. 4, NW-1/4, EO Temp. withdrawn for Classification-  
SW-1/4, Colorado & Pike National Forest (#2466);  
5-8, all 10/2/1916; Part. wdn. Proc. 1375, 6/12/1917;  
9, NW-1/4, Rest. EO #2726 10/8/1917.  
SW-1/4  
17-22, all  
27-35, all
- Sec. 4, N-1/2/NW, HE Pat (#677810); 96.68 ac., patented  
SE/NW 5/15/1919; George Wollner (Cad. survey shows  
N-1/2/NW as Lots 3-4; part. recon. #C 055987,  
5/18/1962).
- Sec. 4, 5, 6 R/W Tel & Teleg Line (#C 0122594); 9/17/1948;  
prior existing rights or claims.

I. STAGE 1 - MAINSTEM RESERVOIR (continued)

T8N-R70W (continued)

<u>Sec.</u> 4, SW/NW 5, NE/NE	Apln. wdl. USFS Rec & PP (#C 012292); 9/12/1955; PLO wdl. USGS Rec & PP (#1742); 10/6/1958 (reserving lands for roadside zones and other public purposes; roadside zone all land lying within 200' of C/L of Hwy. 14).
<u>Sec.</u> 4, NW-1/4, SW-1/4 5-8, all 9, NW-1/4, SW-1/4 17-22, all 31, all	Determination of Public Law Act of Congress 7/23/1955 (#C 026745); 8/24/1960; determination complete 12/18/1963; all National Forest surface management by USFS.
<u>Sec.</u> 4, SW/SW 5, S-1/2/SE 6, SE/SW, SW/SE, Lot 7 7, Lots 1, 2, 3 8, NE-1/4, NE/NW, SE-1/4 9, W-1/2/ NW, NW/SW 17, SW/NE, SW-1/4 18, S-1/2/NE, E-1/2/NW, E-1/2/SW, SE-1/4, Lots 1, 2, 3, 4 19, NE-1/4, NE/NW, Lot 1 20, all (minus N-1/2/NE) 21, SW/NE, 2-1/2/NW, SW-1/4, SE-1/4 22, SW/SW	Forest Exchange Patent (#1219679); 5/16/1961; lands owned by Robert C. Graves relinquished U.S.

I. STAGE 1 - MAINSTEM RESERVOIR (continued)

T8N-R70W (continued)

- Sec. 4, SE/NW,  
Lot 3 Private Exchange WD to U.S. (#C 055987);  
68.44 ac., 5/18/1962; land belonging to W.C.  
Graves transferred to U.S.
- Sec. 4, M&B FERC O Wdl Pwr Proj #09290; 1020 ac., (#C  
4, M&B 43124); 9/24/1986.  
6, see  
remarks
- Sec. 5, 4, 6, 9, R/W Greeley, Salt Lake & Pacific Railroad  
10, 14, 15 (#D 025097); 9/6/1883; cancelled 3/22/1919.
- Sec. 5, 4, 6, 9, R/W Greeley, Salt Lake & Pacific Railroad  
10, 14, 15, (#D 025097); 6/29/1889; cancelled 3/22/1919.  
23-25
- Sec. 5, SE/NE, HE (#D 013759); 140.24 ac., filed 7/19/1910;  
SW/NE relinquished 1/20/1913.  
4, NW/NW,  
SW/NW
- Sec. 5-8, all EO Temp. withdrawn for classification-  
4, NW-1/4, Colorado and Pike National Forest (#2466);  
SW-1/4 10/2/1916; part. wdn. Proc. 1375, 6/12/1917;  
9, NW-1/4, Rest. EO #2726 10/8/1917.  
SW-1/4  
17-22, all  
27-35, all
- Sec. 5, Lot 4 CE Pat (#15764); 100.57 ac., patented  
6, Lot 1 1/5/1892; William H. Dixon.
- Sec. 5, W-1/2/SW CE Pat (#483033); 120 ac., patented  
8, NW/NW 7/20/1915; Amanda F. Flowers.
- Sec. 5, SE/NW HE Pat (#509852); 97.39 ac., patented  
Lots 2, 3 1/26/1916; William H. Dixon.
- Sec. 5, SW/NE, HE Pat (#747960); 160 ac., patented  
NW/SE 5/3/1920; The Heirs of Mary Ann Dixon.  
E-1/2/SW
- Sec. 5, 4, 6 R/W Tel & Teleg Line (#C 0122594); 9/17/1948;  
prior existing rights or claims.

I. STAGE 1 - MAINSTEM RESERVOIR (continued)

T8N-R7OW (continued)

Sec. 5, NE/NE                    Apln. wdl. USFS Rec & PP (#C 012292);  
4, SW/NW                        9/23/1955; PLO wdl. USFS Rec & PP (#1742);  
                                     10/6/1958 (reserving land for roadside zones  
                                     and other public purposes; roadside zone all  
                                     land lying within 200' of C/L of Hwy. 14).

Sec. 5-8, all                    Determination Public Law Act of Congress  
4, NW-1/4,                        7/23/1955 (#C 026745); 8/24/1960;  
     SW-1/4                        determination complete 12/18/1963; all  
9, NW-1/4,                        National Forest surface management by USFS.  
     SW-1/4  
17-22, all  
31, all

Sec. 5, M&B                      FERC O Wdl Pwr Proj #9290; 1020 ac.,  
4, M&B                            (#C 43124); 9/24/1986.  
6, see  
     remarks

Sec. 5, S-1/2/SE                Forest Exchange Patent (#1219679); 5/16/1961;  
(see Sec. 4                        lands owned by Robert C. Graves relinquished  
for addi-                            to United States.  
tional  
legals)

Sec. 6, 4, 5, 9,                R/W Greeley, Salt Lake & Pacific Railroad  
10, 14, 15                        (#D 025097); 9/6/1883; cancelled 3/22/1919.

Sec. 6, 4, 5, 9,                R/W Greeley, Salt Lake & Pacific Railroad  
10, 13, 15                        (#D 025097); 6/29/1889; cancelled 3/22/1919.  
23-25

Sec. 6, Lot 1                    CE Pat (#15764); 100.57 ac., patented  
                                     1/5/1892; William H. Dixon.

Sec. 6, SW/NE,                    HE (#D 04057); 160 ac., filed 3/26/1900;  
     SE/SW,                        cancelled 10/11/1910.  
     NW/SE,  
     SW/SE

Sec. 6, SE/NE,                    HE (#D 06059); 160 ac., filed 4/8/1907;  
     NE/SE,                        relinquished 6/22/1914.  
     SE/SE  
7, NE/NE



I. STAGE 1 - MAINSTEM RESERVOIR (continued)

T8N-R70W (continued)

- Sec. 6, SW/NE, SE/NW, NE/SW, NW/SE HE (#D 019790); 80 ac., filed 4/22/1914; relinquished 8/8/1914.
- Sec. 6, SE/NE, NE/SE, SE/SE CE Pat (#455609); 160 ac., patented 1/25/1915; Amanda F. Flowers.  
7, NE/NE
- Sec. 6, 5, all EO Temp. withdrawn for classification-  
7, 8, all Colorado & Pike National Forest (#2466);  
4, NW-1/4, 10/2/1916; Part. wdn. Proc. 1375, 6/12/1917;  
SW-1/4 Rest. EO #2726, 10/8/1917.  
9, NW-1/4  
SW-1/4  
17-22, all  
27-35, all
- Sec. 6, Lots 2-4 HE Pat (#604405); 93.63 ac., patented 10/27/1917; Alvah Yauger. (Recon. #C 20192, 10/11/1976).
- Sec. 6, 4, 5 R/W Tel & Teleg Line (#C 0122594); 9/17/1948; prior existing rights or claims.
- Sec. 6 R/W Trans. line (#C 015435); 7/7/1950.
- Sec. 6, 5, all Determination Public Law Act of Congress  
7, 8, all 7/23/1955 (#C 026745); 8/24/1960;  
4, NW-1/4, determination complete 12/18/1963; all  
SW-1/4 National Forest surface management by USFS.  
9, NW-1/4,  
SW-1/4,  
17-22, all  
31, all
- Sec. 6, SE/SW, Forest Exchange Patent (#1219679); 5/16/1961;  
SW/SE, lands owned by Robert C. Graves relinquished  
Lot 7 to United States.  
(see Sec. 4  
for addi-  
tional  
legals)

I. STAGE 1 - MAINSTEM RESERVOIR (continued)

T8N-R70W (continued)

- Sec. 6, see FERC O Wdl Prw Proj #9290; 1020 ac.,  
remarks (#C 43124); 9/24/1986.  
4, M&B  
5, M&B
- Sec. 9, 10, 14, R/W Denver, Salt Lake & Western Railroad  
15, 23, 24, (#C 093751); filed 2/14/1881; cancelled  
25 3/22/1926.
- Sec. 9, 5, 6, 10, R/W Greeley, Salt Lake & Pacific Railroad  
14, 15 (#D 025097); filed 9/6/1883; cancelled  
3/15/1892.
- Sec. 9, NE-1/4, SS Agricultural College (#1); patented  
N-1/2/SE 2/1/1886; set aside for agricultural college.  
(see Sec. 4  
for addi-  
tional  
legals)
- Sec. 9, SE/SE CE Pat (#4524); 160 ac., patented 11/19/1887;  
10, SW/SW Hugh McBride.  
15, NE/NW,  
NW/NW
- Sec. 9, 4-6, 10, R/W Greeley, Salt Lake & Pacific Railroad  
14, 15, 23-25 (#D 025097); filed 6/29/1889; cancelled  
3/22/1919.
- Sec. 8, SE/SE HE (#D 013764); 160 ac., filed 7/20/1910;  
9, NE/SW, cancelled 6/14/1912.  
S-1/2/SW
- Sec. 9, NE/NW, HE Pat (#518115); 160 ac., patented 3/9/1916;  
SE/SW Fred Stearley.  
4, NE/SW,  
SE/SW
- Sec. 9, NW-1/4, EO Temp withdrawn for classification-  
SW-1/4 Colorado & Pike National Forest (#2466);  
4, NW-1/4, 10/2/1916; Part. wdn. Proc. 1375, 6/12/1917;  
SW-1/4 Rest EO #2726, 10/8/1917.  
5-8, all  
17-22, all  
27-35, all

I. STAGE 1 - MAINSTEM RESERVOIR (continued)

T8N-R70W (continued)

- Sec. 9, NE/SW, HE Pat (#658941); 160 ac., patented  
SW/SW, 1/13/1919; George H. Nugent.  
S-1/2/SW
- Sec. 9, NW-1/4, Determination Public Law Act of Congress,  
SW-1/4 7/23/1955 (#C 026745); 8/24/1960;  
4, NW-1/4, determination complete 12/18/1963; all  
SW-1/4 National Forest surface management by USFS.  
5-8, all  
17-22, all  
31, all
- Sec. 9, W-1/2/NW, Forest Exchange Patent (#1219679); 5/16/1961;  
NW/SW lands owned by Robert C. Graves relinquished  
(see Sec. 4 to United States.  
for addi-  
tional  
legals)

T9N-R70W

- Sec. 10, NW/SW, HE (#D 4946); 160 ac., filed 9/23/1882;  
SW/SW cancelled 9/19/1885.  
9, NE/SE  
15, NW/NW
- Sec. 10, NW/SW, HE (#D 6392); 160 ac., filed 9/19/1885;  
SW/SW cancelled 4/19/1897.  
9, NE/SE  
15, NW/NW
- Sec. 10, NW/NW, HE Pat (#1901); 160 ac., patented 7/18/1887;  
SW/SW Catharine L. Chaffee.  
4, SE/SE  
3, SW/SW
- Sec. 10, NE/NE, HE (#D 05247); 160 ac., filed 2/13/1906;  
SE/NE, cancelled 5/27/1910.  
NE/SE,  
SE/SE
- Sec. 10, NE/NE, HE (#D 013409); 160 ac., filed 5/27/1910;  
SE/NE, cancelled 2/19/1917.  
NE/SE,  
SE/SE

I. STAGE 1 - MAINSTEM RESERVOIR (continued)

T9N-R70W (continued)

<u>Sec.</u> 10, SW/SW 9, NE/SE, SE/SE 15, NW/NW	HE Pat (#143417); 160 ac., patented 7/11/1910; William Poland.
<u>Sec.</u> 10, SW/NE, NW/SE, SW/SE	CE Pat (#220820); 120 ac., patented 8/14/1911; Jose B. Sanchez.
<u>Sec.</u> 10, 7-9, 14-23, 28-33	EO Temporary Withdrawal for classification (#2466); filed 10/2/1916; withdrawn for classification-Colorado and Pike National Forest, Proclamation 1375, 6/12/1917.
<u>Sec.</u> 10, NW/NE, NE/NW, SE/NW 4, SE/NE, NE/SE 3, NE/SW, NW/SW, SE/SW	HE Pat (#777925); 320 ac., patented 10/18/1920; James Rosebrook.
<u>Sec.</u> 10, 7-9, 14-23, 28-33	Determination Public Law 167, Act of Congress 7/23/1955 (#C 046745); filed 8/24/1960; determination completed 12/18/1963; all National Forest surface management by U.S. Forest Service.
<u>Sec.</u> 10, 9, 16, 21, 22, 29, 31, 32, 33	Federal Energy Regulatory Commission Order withdrawal for Power Project 9290 (#C 43124); filed 9/25/1986; effective 6/10/1985.
<u>Sec.</u> 15, 3-5, 9-10, 16, 21, 28, 33	R/W Greeley, Bear River & Pacific RR (#D 029342); filed 1/14/1882; cancelled 3/15/1926.
<u>Sec.</u> 15, NW-NW	HE (#D 4940); 160 ac., filed 9/23/1882; cancelled 9/19/1885.
<u>Sec.</u> 15, NE/NE, NW/NE	TC (#D 970); 80 ac., filed 10/26/1882; cancelled 8/20/1901.
<u>Sec.</u> 15, NW/NW 10, NW/SW, SW/SW 9, NE/SE	HE (#D 6392); 160 ac., filed 9/19/1885; cancelled 4/19/1897.

I. STAGE 1 - MAINSTEM RESERVOIR (continued)

T9N-R70W (continued)

- Sec. 15, NE/NE,  
NW/NE  
14, NW/NW,  
SW/NW  
HE (#D 20292); 160 ac., filed 8/20/1901;  
cancelled 9/10/1907.
- Sec. 15, SW/NE,  
SE/NE,  
SW/NW,  
SE/NW  
HE (#D 22217); 160 ac., filed 6/9/1904;  
cancelled 12/3/1906.
- Sec. 15, NW/NE,  
SW/NE,  
SW/NW,  
SE/NW  
HE (#D 011513); 160 ac., filed 11/15/1909;  
relinquished 7/10/1912.
- Sec. 14, NE/NW,  
NW/NW,  
SE/NW  
15, NE/NE  
HE (#D 013336); 160 ac., filed 5/19/1910;  
relinquished 7/25/1914.
- Sec. 15, NW/NW  
10, SW/SW  
9, NE/SE,  
SE/SE  
HE Pat (#143417); 160 ac., patented  
7/11/1910; William Poland.
- Sec. 15, 7-10, 14,  
23, 28-33  
EO temporary withdrawal for classification  
(#2466); filed 10/2/1916; withdrawn  
Proclamation 1375, 6/12/1917; withdrawn for  
classification-Colorado and Pike National  
Forest.
- Sec. 15, NE/SE,  
SE/SE  
14, NE/SW,  
NW/SW,  
SE/SW,  
NE/SE,  
SW/SE,  
SE/SE  
HE Pat (#669334); 320 ac., patented  
3/11/1919; Mary E. Roberts.
- Sec. 15, NE/NE  
14, NE-1/4  
NE/NW,  
NW/NW,  
SE/NW  
HE Pat (#684962); 320 ac., patented  
6/10/1919; Frank L. Douglass.

I. STAGE 1 - MAINSTEM RESERVOIR (continued)

T9N-R70W (continued)

- Sec. 15, NW/NE, SW/NE, SW/NW, SE/NW HE Pat (#855856); 160 ac., patented 3/23/1922; William Poland.
- Sec. 15, 7-10, 14, 16-23, 28-33 Determination Public Law Act of Congress dated 7/23/1955 (#C 046745); filed 8/24/1960; determination completed 12/18/1963; all National Forest surface managed by U.S. Forest Service.
- Sec. 16, 36, all SG Act of Congress, 3/3/1875 (#D 047220); 5/6/1936.
- Sec. 16, 3-5, 9-10, 15, 21, 28, 33 R/W Greeley, Bear River & Pacific RR (#D 029342); filed 1/14/1882; cancelled 3/15/1926.
- Sec. 16, 7-10, 14-15, 16-23, 28-33 EO temporary withdrawal for classification (#2466); filed 10/2/1916; withdrawn Proclamation 1375, 6/12/1917; withdrawn for classification-Colorado and Pike National Forest.
- Sec. 16, 36 SG, Act of Congress; 1/25/1927; extends Act of 3/3/1875 to Mineral Lands, subject to prior rights.
- Sec. 16 FX deed to U.S. (#D 047220); 640 ac., 5/6/1936; exchange of lands.
- Sec. 16, 7-10, 14-15, 16-23, 28-33 Determination Public Law 167, Act of Congress, 7/23/1955 (#C 046745); 8/24/1960; determination completed 12/18/1961; all National Forest surface managed by U.S. Forest Service.
- Sec. 16, 19-10, 21-22, 29, 31-33 M & B (#C 43124); Federal Energy Regulatory Commission Order withdrawal for Power Project 9290; 9/24/1986, effective 6/10/1985.
- Sec. 21, 3-5, 9-10, 15-16, 28, 33 R/W Greeley, Bear River & Pacific RR (#D 029342); filed 1/14/1882; cancelled 3/15/1926.
- Sec. 21, NW-1/4 HE (#D 8123); 160 ac., filed 12/9/1886; cancelled 6/5/1897.

I. STAGE 1 - MAINSTEM RESERVOIR (continued)

T9N-R70W (continued)

- Sec. 21, NW/NE,  
SW/NE,  
NW/SE,  
SW/SE HE Pat (#3060); 160 ac., patented 8/24/1891;  
Arthur John Stephens; reconveyed #C 022755  
dated 1/29/1959.
- Sec. 21, 7-10,  
14-20,  
22-23,  
28-33 EO temporary withdrawal for classification  
(#2466); 10/2/1916; withdrawn Proclamation  
1375, 6/12/1917; withdrawn for  
classification-Colorado and Pike National  
Forest.
- Sec. 21, NE/SE,  
SE/SE HE Pat (#802748); 240 ac., patented  
4/11/1921; Charles E. Roberts.  
22, NE/SW,  
NW/SW,  
SW/SW,  
NW/SE
- Sec. 21, NW/NE,  
SW/NE,  
SW/SE,  
E-1/2/  
NW/SE Application withdrawal U.S. Forest Service  
Recreation Area (#C 023759); filed 9/5/1958;  
Seaman Reservoir Recreation Area; withdrawn  
PLO 2297, 3/14/1941.
- Sec. 21, NW/NE,  
SW/NE,  
NW/SE,  
SW/SE Forest Exchange WD to U.S. (#C 022755);  
filed 1/29/1959; clarification of minerals  
in reconveyed lands.
- Sec. 21, NW/NE,  
SW/NE,  
SW/SE PLO Wd1 USFS Rec. Area (#2297); 3/14/1961;  
Seaman Reservoir Recreation Area; Rev. PLO  
#6170, 2/19/1982.
- Sec. 21, NW/NE,  
SW/NE,  
SW/SE PLO #2297; 3/14/1961; (#6170); 2/19/1982;  
3/12/1984; Seaman Reservoir Recreation Area;  
(#C 023759).
- Sec. 27, 26,  
33-35. SS Agricultural College (#1); 2/1/1886.
- Sec. 28, 3-5,  
9-10,  
15-16, 21,  
33 R/W Greeley, Bear River & Pacific RR  
(#D 029342); filed 1/14/1882; cancelled  
3/15/1926.

I. STAGE 1 - MAINSTEM RESERVOIR (continued)

T9N-R70W (continued)

- Sec. 28, NE/NE, SE/NE, NE/NW, SE/NW, NE/SW, SE, SW  
26, 27,  
33-35, all SS Agricultural College (#1); patented 2/1/1886.
- Sec. 28, NW/NE, SW/NE, NW/SE, SW/SE HE (#D 7236); 160 ac., filed 6/24/1886; cancelled 5/22/1889.
- Sec. 28, NW/SE, SW/SE  
33, NW/NE, SW/NE HE Pat (#126905); 160 ac., patented 4/25/1910; Charles A. Orleans.
- Sec. 28, 7-10, 14-23, 29-33, all EO temporary withdrawal for classification (#2466); filed 10/2/1916; withdrawn Proclamation 1375, 6/12/1917; withdrawn for classification-Colorado and Pike National Forest.
- Sec. 28, NW/NE, SW/NE CE Pat (#689861); 80 ac., patented 6/23/1919; Frank L. Douglass.
- Sec. 28, 7-10, 14-23, 29-33, all Determination Public Law 167, Act of Congress, 7/23/1955 (#C 046745); filed 8/24/1960; determination completed 12/18/1963; all National Forest surface management by U.S. Forest Service.
- Sec. 29, 7-10, 14-23, 28, 30-33, all EO temporary withdrawal for classification (#2466); withdrawn Proclamation 1375, 6/12/1917; temporarily withdrawn for classification-Colorado and Pike National Forest.
- Sec. 29, 7-10, 14-23, 28, 30-33, all Determination Public Law 167, Act of Congress, 7/23/1955 (#C 046745); filed 8/24/1960; determination completed 12/18/1963; all National Forest surface management by U.S. Forest Service.



I. STAGE 1 - MAINSTEM RESERVOIR (continued)

T9N-R70W (continued)

- Sec. 29, 9-10, M & B (#C 43124); Federal Energy Regulatory  
16, 21-22, Commission Order withdrawal power project  
31-33 9296; filed 9/24/1986; effective 6/10/1985.
- Sec. 31, 32, 33 R/W Greeley, Salt Lake & Pacific Railroad  
(#D 025097); 9/6/1883; cancelled 3/22/1919.
- Sec. 31, 32, 33 R/W Greeley, Salt Lake & Pacific Railroad  
(#D 025097); 6/29/1889; cancelled 3/22/1919.
- Sec. 31, S-1/2/NE, EO Wdl Pwr Site Res 147; 7/2/1910; lands  
NE/NW, reserved for water power sites.  
SE/NW,  
NE/SW,  
SE-1/4,  
Lots 1-3  
32, NW/NE,  
SW/NE,  
NW-1/4,  
NE/SW,  
NW/SW,  
SW/SW
- Sec. 31, 7-10, EO temporary withdrawal for classification  
14-23, (#2466); withdrawn Proclamation 1375,  
28-30, 6/12/1917; temporarily withdrawn for  
32, 33 withdrawn for classification-Colorado and  
Pike National Forest.
- Sec. 31, SW/NE, EO Rev. Pwr Site Res; EO 7/2/1910; 1/7/1926.  
SE/NE,  
NE/NW,  
SE/NW,  
Lots 1-2  
32, NW/NE,  
NE/NW,  
NW/NW,  
SW/NW
- Sec. 31, all R/W Trans Line (#C 015435); 7/7/1950; Subject  
to all prior existing rights or claims, app.  
by USFS.
- Sec. 31, SW/SW, Apln Wdl USFS Rec & PP (#C 012292);  
SE/SW 9/23/1955; zone, Wdn PLO #1742; 10/6/1958.

I. STAGE 1 - MAINSTEM RESERVOIR (continued)

T9N-R70W (continued)

- Sec. 31, SW/SW,  
SE/SW PLO Wd1 USFS Rec & PP (#1742); 10/6/1958  
(#C 012292); roadside zone; all land lying  
within 200' of C/L of Hwy. 14.
- Sec. 31, 7-10,  
14-23,  
28-30,  
32-33 Determination Public Law 167, Act of  
Congress, 7/23/1955 (#C 046745); 8/24/1960;  
determination completed 12/18/1963; all  
National Forest surface management by U.S.  
Forest Service.
- Sec. 31, 9-10,  
16, 21, 22,  
29, 30, 32,  
33 M&B (#C 43124); FERC (Federal Energy  
Regulatory Commission) Order withdrawal for  
Power Project 9290; 9/24/1986, effective  
6/10/1985.
- Sec. 32, 31, 33 R/W Greeley, Salt Lake & Pacific Railroad  
(#D 025097); filed 9/6/1883; cancelled  
3/22/1919.
- Sec. 32, 31, 33 R/W Greeley, Salt Lake & Pacific Railroad  
(#D 025097); filed 6/29/1889; cancelled  
3/22/1919.
- Sec. 32, NW/NE,  
SW/NE,  
NW-1/4,  
NE/SW,  
NW/SW,  
SW/SW  
31, S-1/2/NE  
NE/NW,  
SE/NW,  
NE/SW,  
SE-1/4,  
Lots 1-3 EO withdrawal power site Res. 147; filed  
7/2/1910; lands reserved for water power  
sites.
- Sec. 32, SW/SE HE Pat (#509852); patented 1/26/1916;  
William H. Dixon.
- Sec. 32, 7-10,  
14-23,  
28-31, 33 EO temporary withdrawal for classification  
(#2466); 10/2/1916; withdrawn Proclamation  
1375, 6/12/1917; withdrawn for  
classification-Colorado and Pike National  
Forest.

I. STAGE 1 - MAINSTEM RESERVOIR (continued)

T9N-R70W (continued)

- Sec. 32, NW/NE, EO Rev. Power Site Res. EO 7/2/1910;  
NE/NW, 1/7/1926.  
NW/NW,  
SW/NW  
31, SW/NE,  
SE/NE,  
NE/NW,  
SE/NW,  
Lots 1-2
- Sec. 32, 33 R/W Tel & Teleg Line (#C 0122594); 9/17/1940;  
subject to all prior existing rights or  
claims, app'd by USFS.
- Sec. 32 SO Pwr Site CL 359; 8/10/1944 (Potential  
value for power sites).
- Sec. 32, NE/SE, HE Pat (#1891); 160 ac., patented 3/20/1886;  
SE/SE John C. Creed.  
33, NW/SW,  
SW/SW
- Sec. 32, 7-10, Determination Public Law 167, Act of  
14-23, Congress, 7/23/1955 (#C 046745); filed  
28-31, 33 8/24/1960; determination completed  
12/18/1963; all National Forest surface  
management by U.S. Forest Service.
- Sec. 32, 9, 10, M&B (#C 43124); FERC Order withdrawal power  
16, 21, 22, proj. 9296; filed 9/24/1986; effective  
31, 33 6/10/1985.
- Sec. 33, 3-5, 9, R/W Greeley, Bear River & Pacific Railroad  
10, 15, 16, (#D 029342); filed 1/14/1882; cancelled  
21, 28 3/15/1926.
- Sec. 33, 31, 32 R/W Greeley, Salt Lake & Pacific Railroad  
(#D 025097); filed 9/6/1883; cancelled  
3/22/1919.
- Sec. 33, NW/SW, HE Pat (#1891); 160 ac., patented 3/20/1886;  
SW/SW John C. Creed.  
32, NE/SE,  
SE/SE

I. STAGE 1 - MAINSTEM RESERVOIR (continued)

T9N-R70W (continued)

- Sec. 33, NE/NE, SE/NE, NW-1/4, NE/SW, SE/SW, NE/SE, SE/SE  
26-27, 28, 34-35 SS Agricultural College (#1); patented 2/1/1886.
- Sec. 33, 31, 32 R/W Greeley, Salt Lake & Pacific Railroad (#D 025097); filed 6/29/1889; cancelled 3/22/1919.
- Sec. 33, NW/NE, SW/NE  
28, NW/SE, SW/SE HE Pat (#126905); 160 ac., patented 4/25/1910; Charles A. Orleans.
- Sec. 33, 7-10, 14-23, 28-32 EO temporary withdrawal for classification (#2466); filed 10/2/1916; withdrawn Proc. 1375, 6/12/1917.
- Sec. 33, 32 R/W Tel & Teleg Line (#C 0122594); dated 9/17/1940; subject to all prior existing rights or claims, approved by USFS.
- Sec. 33, 7-10, 14-23, 28-32 Determination Public Law 167, Act of Congress, 7/23/1955 (#C 046745); filed 8/24/1960; determination completed 12/18/1963; all National Forest surface management by U.S. Forest Service.
- Sec. 33, 9, 10, 16, 21, 22, 29, 31, 32 M&B (#C 43124); FERC Order withdrawal power project 9296; filed 9/24/1986; effective 6/10/1985.
- Sec. 33, 26, 27, 28, 34, 35 SS Agricultural College (#1); patented 2/1/1886.

T8N-R71W

- Sec. 1-6 R/W Greeley, Salt Lake & Pacific Railroad (#D 025097); filed 9/6/1883; cancelled 3/22/1919.
- Sec. 1, W-1/2/NW, N-1/2/SW HE (#D 9220); 152.11 ac., filed 5/4/1887; cancelled 9/7/1887.

I. STAGE 1 - MAINSTEM RESERVOIR (continued)

T8N-R71W (continued)

- Sec. 1, W-1/2/NW, HE Pat (#2910); 152.11 ac., patented  
N-1/2/SW 6/29/1891; Barzilla M. Lasley.
- Sec. 1, Lot 3 EO Wdl Pwr Site Res 147; 7/2/1910; partially  
2, S-1/2/NE, Rev EO 1/7/1926.  
S-1/2/NW,  
Lots 1-4  
3, S-1/2/NE,  
Lots 1-3  
4, SW/NW,  
Lots 1-4  
5, S-1/2/NE,  
S-1/2/NW,  
Lots 3, 4  
6, SE/NE,  
NE/SW,  
N-1/2/SE,  
Lots 1, 6
- Sec. 1, SE/SW CE Pat (#380324); 160 ac., patented  
12, W-1/2/NE, 1/26/1914; Clark Moore.  
NE/NW
- Sec. 1, SW/SW HE Pat (#532915); 160 ac., patented  
2, E-1/2/SE 6/10/1916; Thomas H. Farrell.  
12, NW/NW
- Sec. 1, SE/NE, HE Pat (#604405); 72.26 ac., patented  
Lot 1 10/20/1917; Alvah Yauger.
- Sec. 1-8 R/W Tel & Teleg Line (#C 0122594), 9/17/1940.
- Sec. 1-3 R/W Trans Line (#C 015435); 7/7/1950.
- Sec. 1, N-1/2/SE Apln Wdl USFS Rec Area (#C 012292);  
2, N-1/2/SW, 9/23/1955; Wdn PLO #1742; 10/6/1958; roadside  
W-1/2/SE zones and other public use.  
3, NE-1/4,  
NW-1/4,  
NE/SE  
4, SE/NE,  
N-1/2/SW,  
N-1/2/SE  
5, SW/NE,  
NW-1/4,  
SW-1/4  
6, SE/SE

I. STAGE 1 - MAINSTEM RESERVOIR (continued)

T8N-R71W (continued)

Sec. 1-13, 15-22, 24-34      Determination Public Law 167, Act of Congress, 7/23/1955 (#C 046745); 8/24/1960; determination completed 12/18/1963; all National Forest surface management by U.S. Forest Service.

II. STAGE 2 - GLADE RESERVOIR

T8N-R69W

Sec. 6, SE-1/4      HE Pat (#1498); 160 ac., patented 12/30/1881; Sewall Adams.

Sec. 6, NE-1/4      TC (#D 1573); 136.88 ac., filed 4/29/1884; cancelled 3/29/1905.

Sec. 6, SW/NE, SE/NW, Lots 1-2      HE (#D 05621); 136.88 ac., filed 1906; relinquished 1/6/1910.

Sec. 6, SW/NE, SE/NE, Lots 1-2      HE Pat (#509030); 136.88 ca., patented 1/21/1916; Earl Tanner.

Sec. 6, SE/NW, Lots 3-5      HE Pat (#771322); 141.04 ac., patented 9/2/1920; Earl C. Tanner.

Sec. 6, SW-1/4      HE (#D 027081); 160 ac., filed 11/9/1921; cancelled 3/12/1927.

Sec. 6, NW/SW, SE/SW, Lots 6-7      SRHE (#D 039046); 168.99 ac., filed 5/18/1929; cancelled 11/23/1934.

Sec. 6, NE/SW, SE/SW, Lots 6-7      SLUP (#C 057857); 168.99 ac., filed 2/15/1961; terminated 2/10/1963.

Sec. 6, NE/SW, SE/SW, Lots 6-7, 19, Lot 4      BLM O Proposed Classification for disposal (#C 2904); filed 6/4/1968; disposal 6/13/1968 through PS, PLSO, and R&PP.

II. STAGE 2 - GLADE RESERVOIR (continued)

T8N-R69W (continued)

Sec. 6, NE/SW, BLM Official Notice Termination of disposal  
SE/SW, classification (#C 2904); terminated  
Lots 6-7 11/7/1968.  
19, Lot 4

Sec. 7, NW-1/4 RRG Pat (#17); 849 ac., patented 11/8/1881;  
15, SW-1/4 Denver Pacific Railroad Company.  
21, NW/SW  
27, NW-1/4,  
SE-1/4  
35, SE-1/4

Sec. 7, NE-1/4, RRG Pat (#38); 2788.88 ac., patented  
SW-1/4, 2/26/1897; Denver Pacific Railroad Company.  
SE-1/4  
9, all  
11, NE-1/4,  
NW-1/4  
15, NE-1/4,  
NW-1/4,  
SE-1/4  
21, NW-1/4,  
23, SW-1/4,  
SE-1/4  
25, NW-1/4,  
SW-1/4

T9N-R69W

Sec. 18, NE/NW, TC (#D 2064); 160 ac., filed 1/24/1885;  
SE/NW, cancelled 7/24/1886.  
NE/SW,  
SE/SW

Sec. 18, NE/NW, TC (#D 6588); 160 ac., filed 7/24/1886;  
SE/NW, cancelled 7/7/1898.  
NE/SW,  
SE/SW

Sec 18, NE/NW, HE (#D 18897); 160 ac., filed 7/7/1898;  
SE/NW, cancelled 1/3/1900.  
NE/SW,  
SE/SW

Sec. 18, NW/NW, HE (#D 20866); 178.28 ac., filed 5/10/1902;  
SW/NW, cancelled 3/30/1908.  
NW/SW,  
SW/SW

II. STAGE 2 - GLADE RESERVOIR (continued)

T9N-R69W (continued)

Sec. 18, NE/NW, SE/NW, NE/SW, SE/SW HE Pat (#5520); 160 ac., patented 5/19/1903; Russell P. Lawton.

Sec. 18, NE-1/4 HE (#D 05387); 160 ac., filed 5/31/1906; cancelled 6/4/1914.

Sec. 18, NW/NW, SW/NW, NW/SW, SW/SW CE Pat (#135830); 178.28 ac., patented 6/9/1910; (cadastral survey shows as Lots 1-4) William Booth.

Sec. 18, NE-1/4, SE-1/4 SRHE (#D 025067); 320 ac., filed 12/10/1919; relinquished 10/31/1924.

Sec. 18, NE-1/4, SE-1/4 SRHR Pat (#1035498); 320 ac., patented 3/18/1930; Joseph C. Davis.

Sec. 19, 1, 11, 29 RRG Pat (#52); 2560 ac., patented 1/16/1903; authority given to Denver Pacific Railroad and Telegraph Company to construct a RR. and telegraph line from Denver to Cheyenne.

Sec. 30, NW-1/4 TC (#D 2071); 164.07 ac., filed 1/27/1885; cancelled 3/30/1905.

Sec. 30, NE/NE, SE/NE, NE/SE, SE/SE CE Pat (#10626); 160 ac., patented 7/30/1891; William M. Neece.

Sec. 30, Lots 1-4 DLE (#D 01076); 167.20 ac., filed 1906; cancelled 4/19/1910.

Sec. 30, Lots 1-4 HE Pat (#435392); 167.48 ac., patented 10/12/1914; cancelled; current patent #443983 issued 11/21/1914, Esther E. Roberts.

Sec. 30, NW/NE, SW/NE, SE/SW, NW/SE, SW/SE HE Pat (#811038); 240 ac., patented 6/22/1921; John Spurlock.

Sec. 30, SE/NW, NE/SW SLUP (#C 057857); 80 ac., filed 2/10/1961; terminated 2/9/1963.



II. STAGE 2 - GLADE RESERVOIR (continued)

T9N-R69W (continued)

- Sec. 30, SE/NW, NE/SW BLM O proposed classification for disposal (#C 2904) filed 6/4/1968; 6/13/1968; official notice of proposed classification of Public Lands to classify Public Lands described below for disposal through public sale.
- Sec. 30, SE/NW, NE/SW BLM O Disposal Classification BLM O 6/4/1968 (#C 2904); filed 10/5/1968; disposed 10/11/1961 through Public Sale; terminated BLM O 5/6/1982; published for 5/13/1982; Vol. 47, No. 93.
- Sec. 30, SE/NW, NE/SW PS Pat (#05700005); 80 ac., patented 7/16/1969; W.J. Kremers and Ruby May Kremers.
- Sec. 31, 5, 7, 17, 23, 33, all 9, NE-1/4, SE-1/4 RRG Pat (#38); 4160 ac., patented 2/26/1897; Denver Pacific Railroad Company.

T8N-R70W

- Sec. 1, S-1/2/SE 12, N-1/2/NE CE Pat (#4464); 160 ac., patented 11/19/1887; Daniel Cameron.
- Sec. 1, W-1/2/SW, 11, NE/NE 12, NW/NW CE Pat (#4479); 160 ac., patented 11/19/1887; Charles M. Cranson.
- Sec. 1, NE-1/4 CE Pat (#4495); 134 ac., patented 10/29/1888; Charles G. Black.
- Sec. 1, NE-1/4 RRG Pat (#38); 132.88 ac., patented 2/26/1897; Denver Pacific Railroad Company.
- Sec. 1, E-1/2/SW, W-1/2/SE HE (#D 21166); 160 ac., filed 9/9/1902; cancelled 9/23/1907.
- Sec. 1, E-1/2/SW, W-1/2/SE CE Pat (#18393); 160 ac., patented 6/29/1908; Fred C. Alford.
- Sec. 2, all SS Agricultural College (#1); 640 ac., patented 2/1/1886; set aside for agricultural college.
- Sec. 11, W-1/2/SE, 14, W-1/2/NE HE (#D 4257); 160 ac., filed 7/24/1880; cancelled 3/6/1883.

II. STAGE 2 - GLADE RESERVOIR (continued)

T8N-R7OW (continued)

- Sec. 11, E-1/2/NW, TC (#D 1233); 160 ac., filed 7/30/1883;  
E-1/2/SW cancelled 7/16/1885.
- Sec. 11, NE/SE, CE Pat (#4120); 160 ac., patented 1/30/1885;  
12, N-1/2/SW George W. Meldrum.  
NW/SE
- Sec. 11, W-1/2/NE SS Agricultural College (#1); 80 ac.,  
patented 2/1/1886; set aside for agricultural  
college.
- Sec. 11, W-1/2/SW CE Pat (#4408); 80 ac., patented 8/30/1886;  
Joshua Budd.
- Sec. 11, W-1/2/NW, CE Pat (#4421); 160 ac., patented 11/19/1887;  
10, E-1/2/NE Charles C. Creed.
- Sec. 11, SE/NE CE Pat (#4121); 160 ac., patented 3/7/1888;  
12, SW/NE Angus C. Gordon.  
S-1/2/NW
- Sec. 11, W-1/2/SE, CE Pat (#4627); 160 ac., patented 1/15/1890;  
14, W-1/2/NE Owen T. Gebhart.
- Sec. 11, SE/SE, MIL Pat (#1200); 160 ac., patented  
E-1/2/NE, 10/15/1891; Corp. Hannaniah Hewitt, "the said  
NE/SE warrant having been duly assigned to George  
C. Meldrum..."
- Sec. 11, E-1/2/NW, CE Pat (#15892); 160 ac., patented 6/30/1892;  
E-1/2/SW Frank C. Routt.
- Sec. 12, NE/NW CE Pat (#17298); 40 ac., patented 6/8/1904;  
Nathaniel C. Alford.
- Sec. 12, S-1/2/SE HE (#D 017182); 160 ac., filed 8/5/1912;  
13, N-1/2/NE relinquished 9/16/1913.
- Sec. 12, SE/NE, HE (#D 018964); 160 ac., filed 9/16/1913;  
NE/SE, relinquished 8/25/1915.  
S-1/2/SE
- Sec. 12, SE/NE, HE (#D 019790); 80 ac., filed 4/22/1914;  
NE/SE relinquished 8/8/1914.
- Sec. 12, SE/NE, CE Pat (#563656); 80 ac., patented 1/25/1917;  
NE/SE Richard A. Maxfield.

II. STAGE 2 - GLADE RESERVOIR (continued)

T8N-R70W (Continued)

Sec. 12, S-1/2/SE, HE Pat (#802746); 160 ac., patented  
N-1/2/NE 4/11/1921; Francis Porter.

T9N-R70W

Sec. 13, all RRG Pat (#47); 640 ac., patented 4/12/1902;  
Union Pacific Railroad.

Sec. 24, S-1/2/NW, HE (#D 020838); 160 ac., filed 4/26/1902;  
N-1/2/SW cancelled 6/26/1908.

Sec. 24, N-1/2/SE CE Pat (#17561); 80 ac., patented 3/27/1905;  
Charles E. Roberts.

Sec. 24, W-1/2/NE CE Pat (#17854); 80 ac., patented 9/10/1906;  
Mary A. Roberts.

Sec. 24, SE/SW ME Pat (#46923); 120 ac., patented 4/13/1908;  
S-1/2/SE S.T. Hathaway, Elk placer mining claim.

Sec. 24, W-1/2/NW, HE (#D 010596); 160 ac., filed 9/11/1909;  
W-1/2/SW relinquished 12/2/1909.

Sec. 24, W-1/2/SW HE (#D 015193); 80 ac., filed 4/7/1911;  
relinquished 11/1/1913.

Sec. 24, NW-1/4, HE Pat (E444099); 280 ac., patented  
SW/SW, 11/21/1914; John W. Lowell.  
NE/SW,  
NW/SW

Sec. 24, E-1/2/NE HE Pat (#452798); 80 ac., patented 1/11/1913;  
George Schwartz.

Sec. 25, all RRG Pat (#38); 640 ac., patented 2/26/1897;  
Union Pacific, successor to Denver Pacific  
Railroad.

Sec. 35, all SS Agricultural College (#1); patented  
2/1/1886; set aside for agricultural college.

Sec. 36, all State Grant, Act of Congress 3/3/1875.

Sec. 36, all State Grant, Act of Congress 1/25/1927  
(extends Act of 1875).

III. STAGE 3 - CACHE LA POUFRE FOREBAY RESERVOIR

T9N-R71W

- Sec. 25, 12, 13, 24, 26-36 EO temporarily withdrawn for classification (#2466); filed 10/2/1916; withdrawn for classification-Colorado and Pike National Forest, Proclamation 1375, 6/12/1917.
- Sec. 25, 12, 13, 24, 26-36 Determination Public Law 167, Act of Congress, 7/23/1955 (#C 046745); filed 8/24/1960; determination completed 12/18/1963; all National Forest surface management by U.S. Forest Service.
- Sec. 25, W-1/2/NW, W-1/2/SW HE Pat (#6130); 160 ac., patented 3/30/1905; Walter McNey.
- Sec. 25, SE/SW HE (#D 021772); 40 ac., filed 7/29/1915; cancelled 6/4/1919.
- Sec. 25, M&B 36, M&B FERC 0 Wd1 Pwr Proj 9290 (#C 43124); 1020 ac., 9/24/1986, Eff. 6/10/1985.
- Sec. 36, all State Grant, Act of Congress 1875, 1927.
- Sec. 36, all Forest Exchange Deed to US (#D 047220); 5/6/1936 (land exchange).
- Sec. 36, 12, 13, 24-35 EO temporarily withdrawn for classification (#2466); filed 10/2/1916; withdrawn for classification-Colorado and Pike National Forest, Proclamation 1375, 6/12/1917.
- Sec. 36, 12, 13, 24-35, Determination Public Law 167, Act of Congress, 7/23/1955 (#C 046745); filed 8/24/1960; determination completed 12/18/1963; all National Forest surface management by U.S. Forest Service.

TABLE A-2

## INFORMATION NOTED ON USGS QUADRANGLE MAPS

Description	Location
Laramie City Wagon Road (GLO, 1877) (Overland Trail)	T8N-R69W, Sec. 7, 18, 19, 29, 30 T8N-R70W, Sec. 11, 12, 13, 24 T9N-R70W, Sec. 13, 24, 25, 36
Denver and Cheyenne Stage Road (GLO, 1872)	T9N-R69W, Sec. 16, 21, 28, 33
unnamed road (GLO, 1877)	T8N-R70W, Sec. 1 T9N-R70W, Sec. 24, 25, 36
House (GLO, 1877)	T8N-R69W, Sec. 7 (NE 1/4)
2 Houses (GLO, 1877)	T8N-R69W, Sec. 30 (SW 1/4)
William Booth Homestead (land tables)	T9N-R69W, Sec. 18 (SW 1/4)
Fred C. Alford Homestead (land tables)	T8N-R70W, Sec. 1 (SE-1/4)
House (GLO, 1877)	T8N-R70W, Sec. 12 (SW 1/4)
George Meldrum Homestead (land tables)	T8N-R70W, Sec. 12 (SW 1/4)
House (GLO, 1877)	T8N-R70W, Sec. 14 (SE 1/4)
House (GLO, 1877)	T8N-R70W, Sec. 24 (SW 1/4)
House (GLO, 1877)	T8N-R70W, Sec. 25 (NW 1/4)
Jacob Flowers House (GLO, 1877)	T8N-R70W, Sec. 25 (SE 1/4)
House (GLO, 1877)	T8N-R70W, Sec. 23 (NE 1/4)
School house (GLO, 1877)	T8N-R70W, Sec. 19 (SW 1/4)
House (GLO, 1877)	T8N-R70W, Sec. 19 (SW 1/4)
M. Flowers House (GLO, 1877)	T8N-R70W, Sec. 30 (NE 1/4)

TABLE A-2  
(continued)

INFORMATION NOTED ON USGS QUADRANGLE MAPS

Description	Location
House (GLO, 1877)	T9N-R70W, Sec. 22 (SE 1/4)
Chas. Roberts Homestead (land tables)	T9N-R70W, Sec. 24 (SE 1/4)
John Lowell Homestead (land tables)	T9N-R70W, Sec. 24 (SW 1/4)
Gardner's House (GLO, 1882)	T8N-R71W, Sec. 23 (C)
Shield's House (GLO, 1882)	T8N-R71W, Sec. 23 (NE 1/4)
L----- House & Stable (GLO, 1882)	T8N-R71W, Sec. 24 (SE 1/4)
E----- Ranch & Stable (GLO, 1882)	T8N-R71W, Sec. 24 (SW 1/4)
Sawmill (GLO, 1882)	T8N-R71W, Sec. 22 (NE 1/4)
Flowers Sawmill (GLO, 1882)	T8N-R71W, Sec. 25 (SE 1/4)
Eiseman's House and Stable (GLO, 1882)	T8N-R71W, Sec. 26 (NW 1/4)
D----- Ranch and Stable (GLO, 1882)	T8N-R71W, Sec. 27 (SE 1/4)
J. Kennedy (GLO, 1878)	T9N-R71W, Sec. 23 (NW 1/4)

APPENDIX B

CULTURAL RESOURCES LOCATIONAL DATA

TABLE B-1

KNOWN CULTURAL RESOURCES IN CLASS I STUDY AREA

Site #	Location (T-R-Sec. quarter-quarters)	Site #	Location (T-R-Sec. quarter-quarters)
5LR007	SE/NW/NW/SE T9N, R69W, Sec. 4	5LR370	T9N, R69W, Sec. 19
5LR022	NW/NW/SW/SE T9N, R69W, Sec. 4	5LR371	T9N, R69W, Sec. 19
5LR112	SE/SW/SW/SE T7N, R69W, Sec. 1	5LR372	T9N, R69W, Sec. 7
5LR275	Unknown - within Owl Canyon Pinon Grove	5LR373	T8N, R69W, Sec. 16
5LR300	SW/NE/SW/SE T8N, R69W, Sec. 12	5LR374	SW/SE/SE/SW T8N, R70W, Sec. 15
5LR302	SE/NE/NE/NE T9N, R69W, Sec. 4	5LR377	SE/NE; NE/NE/SE T8N, R70W, Sec. 15
5LR303	NW/NE/SW/SE T9N, R69W, Sec. 4	5LR378	T9N, R71W, Sec. 25
5LR304	NE/SW T8N, R69W, Sec. 6	5LR536	NW/NE/SE; NE/SE/NE/SE T9N, R71W, Sec. 25
5LR305	SW/SW T8N, R69W, Sec. 6	5LR538	SW/NW/SW/SW T8N, R70W, Sec. 14
5LR369	NW/SE/SE T9N, R69W, Sec. 5	5LR539	NW/NW/SW/SW T8N, R70W, Sec. 14
		5LR540	NE/NW/SW/NE; SE/SW/NW/NE T8N, R70W, Sec. 25



TABLE B-1  
(Continued)

KNOWN CULTURAL RESOURCES IN CLASS I STUDY AREA

Site #	Location (T-R-Sec. quarter-quarters)	Site #	Location (T-R-Sec. quarter-quarters)
5LR541	SE/NW/NE/SE T8N, R70W, Sec. 15	5LR772	SE/SE/NE/SE T9N, R70W, Sec. 4
5LR542	NW/NE/SW/SE T8N, R70W, Sec. 15	5LR792	NE/NE/NW/SW T8N, R70W, Sec. 4
5LR548	SE/NW/NE/NE T8N, R70W, Sec. 6	5LR794	SE/SE/NE/SE T8N, R70W, Sec. 4
5LR654	SE/NE/SW/SE T8N, R69W, Sec. 18	5LR796	SE/SW/NW/SE T8N, R70W, Sec. 4
5LR748	SE/NE/NW/NW T9N, R69W, Sec. 16	5LR962	T8N, R69W, Secs. 15, 16, 21, 22, 23, 25, 28, 29, 30
5LR752	SE/SW/NE/NW T9N, R70W, Sec. 13	5LR963	NW/SE/SE/NE T8N, R70W, Sec. 24
5LR759	T6N, R69W; T7N, R69W; T7N, R70W	5LR964	SE/SE/SE/NW T8N, R70W, Sec. 4
5LR762	T9N, R69W, Sec. 16	5LR965	NW/NW/SE/NE T8N, R70W, Sec. 4
5LR764	SE/SE/SE T9N, R69W, Sec. 5		
5LR765	T9N, R69W, Sec. 5		

TABLE B-2

## CULTURAL RESOURCES IN CLASS III STUDY AREA

Resource No.	Field No.	Cadastral Description	UTM	USGS Map Reference
5LR1095	CA-48	Sec. 9, T8N-R70W, NW/NW/NW/SE, SW/NW/NW/SE; NW/SW/NW/SE; SE/SW/NW/SE; NW/NE/SW/SE; NE/NE/SW/SE; NW/NW/SE/SE; SW/SW/NE/SE; NE/SW/NE/SE	13; 480065mE, 4502440mN 13; 480022mE, 4502288mN 13; 480257mE, 4502102mN 13; 480746mE, 4502264mN	Laporte, CO 7.5, 1962/1979
5LR1096	CA-49	Sec. 4, T8N-R70W, W1/2 /NW/SE	13; 480109mE, 4504008mN 13; 479984mE, 4503816mN	Laporte, CO 7.5', 1962/1979
5LR1097	CA-50	Sec. 4, T8N-R70W, NE/SW/NE/SW	13; 479680mE, 4505790mN	Laporte, CO 7.5', 1962/1979
5LR1098	CA-51	Sec. 28, T9N-R70W NW/SW/SE/SE and SW/SW/SE/SE	13; 480385mE, 4506660mN	Laporte, CO 7.5', 1962/1979

TABLE B-2  
(Continued)

CULTURAL RESOURCES IN CLASS III STUDY AREA

Resource No.	Field No.	Cadastral Description	UTM	USGS Map Reference
5LR1099	CA-52	Sec. 28, T9N-R70W SE/SE/SW	13; 479850mE, 4506690mN	Laporte, CO 7.5', 1962/1979
5LR1100	CA-53	Sec. 28, T9N-R70W SE/SE/NE/SW	13; 479850mE, 4507025mN	Laporte, CO 7.5', 1962/1979
5LR1101	CA-54	Sec. 4, T8N-R70W SW/SE/NE/SW	13; 479800mE, 4504850mN	Laporte, CO 7.5', 1962/1979
5LR1102	CA-55	Sec. 1, T8N-R71W NW/NW/SE/NE and SW/NE/SE/NW	13; 478680mE, 4504500mN	Poudre Park, CO 7.5', 1962
5LR1103	CA-56	Sec. 32, T9N-R70W NE/SE/SW/SE	13, 478685mE, 4505045mN	Poudre Park, CO 7.5', 1962
5LR1104	CA-57	Sec. 4, T8N-R70W NW/SE/SW/NW	13, 477780mE, 4504445mN	Poudre Park, CO 7.5', 1962
5LR1105	CA-58	Sec. 32, T9N-R70W NE/SE/SW/SE	13; 478690mE, 4505125mN	Poudre Park, CO 7.5', 1962

TABLE B-2  
(Continued)

CULTURAL RESOURCES IN CLASS III STUDY AREA

Resource No.	Field No.	Cadastral Description	UTM	USGS Map Reference
5LR1106	CA-59	Sec. 32, T9N-R70W SE/NW/SE/SE and SW/NW/SE/SE	13; 478845mE, 4505264mN 13: 478908mE, 4505317mN	Poudre Park, CO 7.5', 1962
5LR1107	CA-60	Sec. 31, T9N-R70W NW/SE/SE/SW	13; 476538mE, 4505178mN	Poudre Park, CO 7.5', 1962
5LR1108	CA-61	Sec. 28, T9N-R70W SW/NW/SW/NE	13; 480000mE, 4507570mN	Laporte, CO 7.5', 1962/1979
5LR1109	CA-62	Sec. 28, T9N-R70W SW/SE/NW/NE	13; 480075mE, 4507899mN	Laporte, CO 7.5', 1962/1979
5LR1110	CA-63	Sec. 21, T9N-R70W SW/SE/SW/SE and NW/SE/SW/SE	13; 480215mE, 4808310mN	Laporte, CO 7.5', 1962/1979
5LR1111	CA-64	Sec. 21, T9N-R70W SW/NE/SW/SE and NE/NW/SW/SE	13; 480150mE, 4508510mN	Laporte, CO 7.5', 1962/1979

TABLE B-2  
(Continued)

CULTURAL RESOURCES IN CLASS III STUDY AREA

Resource No.	Field No.	Cadastral Description	UTM	USGS Map Reference
5LR1112	CA-65	Sec. 21, T9N-R70W SE/SW/NW/NE	13; 480090mE, 4509410mN	Laporte, CO 7.5', 1962/1979
5LR1113	CA-66	Sec. 16, T9N-R70W E1/2 /NE/NE/NE and Sec. 15, T9N-R70W SW/NW/NW/NW	13; 480770mE, 4511338mN	Livermore, CO 7.5', 1960/1978
5LR1114	CA-67	Sec. 5, T8N-R70W SW/NE/NE/SW	13; 478318mE, 4504091mN	Poudre Park, CO 7.5', 1962
5LR1115	CA-68	Sec. 4, T8N-R70W NW/SE/NW/NW	13; 479480mE, 4504780mN	Laporte, CO 7.5', 1962/1979
5LR1116	CA-69	Sec. 1, T8N-R71W SE/NE/NE/NE	13; 475863mE, 4504236mN	Poudre Park, CO 7.5', 1962
5LR1117	CA-70	Sec. 6, T8N-R70W SW/NW/SW/NW	13; 476354mE, 4504490mN	Poudre Park, CO 7.5', 1962

TABLE B-2  
(Continued)

CULTURAL RESOURCES IN CLASS III STUDY AREA

Resource No.	Field No.	Cadastral Description	UTM	USGS Map Reference
5LR1118	CA-71	Sec. 21, T9N-R70W SW/NW/SE/SW	13; 479540mE, 4508350mN	Laporte, CO 7.5', 1962/1979
5LR1119	CA-72	Sec. 16, T9N-R70W N1/2 /SE/NE/NW and SE/SE/NE/NW	13; 479769mE, 4511061mN 13; 480000mE, 4511108mN	Livermore, CO 7.5', 1960/1978
5LR1120	CA-74	Sec. 9, T9N-R70W SE/SE/NW/SE	13; 480490mN, 4511925mE	Livermore, CO 7.5', 1960/1978
5LR1121	CA-75	Sec. 16, T9N-R70W SW/NE/NE/SE	13; 480615mE, 4510445mN	Laporte, CO 7.5', 1962/1979
5LR1122	CA-73	Sec. 9, T9N-R70W NE/SW/NE/SE	13; 480308mE, 4511846mN	Livermore, CO 7.5', 1960/1978

TABLE B-2  
(Continued)

CULTURAL RESOURCES IN CLASS III STUDY AREA

Resource No.	Field No.	Cadastral Description	UTM	USGS Map Reference
5LR1123	CA-76	Sec. 33, T9N-R70W W1/2 /NE/SW and NE/NW/SW	13; 479640mE, 4505540mN 13; 479810mE, 4505510mN 13; 479645mE, 4505300mN 13; 479570mE, 4505490mN	Laporte, CO 7.5', 1962/1979
5LR1124	IF-1	Sec. 9, T8N-R70W NE/NW/SE/NW	13; 480437mE, 4502453mN	Laporte, CO 7.5', 1962/1979
5LR1125	IF-2	Sec. 9, T8N-R70W NE/NW/NE/NE	13; 480499mE, 4503435mN	Laporte, CO 7.5', 1962/1979
5LR1126	IF-3	Sec. 9, T8N-R70W NW/NE/NE/NE	13; 480610mE, 4503433mN	Laporte, CO 7.5', 1962/1979
5LR1127	IF-4	Sec. 4, T8N-R70W NE/NW/NW/SW	13; 480402mE, 4504259mN	Laporte, CO 7.5', 1962/1979

TABLE B-2  
(Continued)

CULTURAL RESOURCES IN CLASS III STUDY AREA

Resource No.	Field No.	Cadastral Description	UTM	USGS Map Reference
SLR1128	IF-5	Sec. 33, T9N-R70W SE/SE/NE/SE	13; 480662mE, 4505399mN	Laporte, CO 7.5', 1962/1979
SLR1129	IF-6	Sec. 33, T9N-R70W NE/SE/NW/NE	13; 480247mE, 4506129mN	Laporte, CO 7.5', 1962/1979
SLR1130	IF-7	Sec. 28, T9N-R70W NE/NW/SW/SE	13; 480130mE, 4506884mN	Laporte, CO 7.5', 1962/1979
SLR1131	IF-8	Sec. 31, T9N-R70W NW/NE/SW/SE	13; 476941mE, 4505368mN	Poudre Park, CO 7.5', 1962
SLR1132	IF-9	Sec. 1, T8N-R71W NW/NE/SW/NW	13; 476275mE, 4504920mN	Poudre Park, CO 7.5', 1962
SLR1133	IF-10	Sec. 31, T9N-R70W SW/NW/SW/SE	13; 476786mE, 4505267mN	Poudre Park, CO 7.5', 1962
SLR1134	IF-11	Sec. 29, T9N-R70W NW/SE/SE/SE	13; 479082mE, 4506612mN	Laporte, CO 7.5', 1962/1979



TABLE B-2  
(Continued)

CULTURAL RESOURCES IN CLASS III STUDY AREA

Resource No.	Field No.	Cadastral Description	UTM	USGS Map Reference
5LR1135	IF-12	Sec. 28, T9N-R70W SW/NW/NE/NE	13; 480344mE, 4507648mN	Laporte, CO 7.5', 1962/1979
5LR1136	IF-13	Sec. 21, T9N-R70W NW/NW/NW/SE	13; 480035mE, 4508908mN	Laporte, CO 7.5', 1962/1979
5LR1137	IF-14	Sec. 6, T8N-R70W NE/NE/NW/NW	13; 476260mE, 4504940mN	Poudre Park, CO 7.5', 1962
5LR1138	IF-15	Sec. 21, T9N-R70W SE/SE/SW/NE	13; 480325mE, 4508975mN	Laporte, CO 7.5', 1962/1979
5LR1139	IF-16	Sec. 21, T9N-R70W SE/SE/SW/NE	13; 480305mE, 4509000mN	Laporte, CO 7.5', 1962/1979
5LR1140	IF-17	Sec. 16, T8N-R70W NW/NW/NE/NE	13; 480404mE, 4501663mN	Laporte, CO 7.5', 1962/1979
5LR1141	IF-18	Sec. 28, T9N-R70W SW/NE/NE/NE	13; 480640mE, 4508055mN	Laporte, CO 7.5', 1962/1979