

**WALDIE, TONN RANCH, AND O'NEILL RANCH
COAL FIRE SUPPRESSION:
A CULTURAL RESOURCE INVENTORY**

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INTRODUCTION

The Mine Waste Cleanup Bureau of the Montana Department of Environmental Quality intends to suppress four coal fires on private lands in eastern Montana this fall. The four fires--- Waldie, Tonn Ranch #1 and 2, and O'Neill Ranch--- are located in Custer and Prairie Counties. These naturally-occurring fires are part of a larger suppression project which includes additional sites on both public and private lands elsewhere in eastern Montana (see Hubbell 2009; Rossillon 2009; Truesdale 2009). Work will involve excavation into the fire zone and removal of burning coal, filling of surface cracks caused by the underground fires, and the like. The project is scheduled to begin and be completed this fall.

The Waldie Fire is in Custer County about 22 miles southwest of Miles City in Section 1, Township 4 North, Range 45 East (Figure 1). The Tonn Ranch Fires and their access roads, also in Custer County, are about 21 miles southeast of Miles City in Sections 1, 2, and 12, Township 5 North, Range 49 East and Section 35, Township 6 North, Range 49 East (Figure 2). The O'Neill Ranch fire, consisting of the main fire area and two vent holes, is in Prairie County north of Terry. It is in Sections 34 and 35, Township 14 North, Range 51 East (Figure 3).

DEQ contracted with Renewable Technologies, Inc. (RTI) to conduct a cultural resource inventory of the four fire sites. Project funding through the Office of Surface Mining is contingent on compliance with Section 106 of the National Historic Preservation Act (as amended). Completion of a cultural resource inventory and site evaluation is one component of that compliance requirement.

RTI archaeologist Mitzi Rossillon conducted all archaeological field investigations between August 1 and 4, 2009, covering a total of 18 acres at the four coal fire areas and 3.7 miles of access roads (equivalent to about 22 acres). She identified two prehistoric sites along the Tonn Ranch fire access roads (24CR1138 and 1139) and another prehistoric site at the O'Neill Ranch Fire (24PE726). This report summarizes the fieldwork methodologies and project environmental setting, and describes the three archaeological sites and isolated finds that Rossillon located. Forms for each site and isolated find are appended.

ENVIRONMENTAL SETTING

The four fires are located in different areas within the Yellowstone River basin, but share some common characteristics. The Lower Tertiary Fort Union Formation comprises the bedrock throughout this region. The bedrock "includes shale, siltstone, and sandstone with numerous coal beds and local lenses of limestone" (Aaberg and others 2006:49). The fires all occupy the ecological subsection known as the Montana Sedimentary Plains. There, short grass prairie vegetation, particularly grama-needlegrass-wheatgrass communities, dominates (Aaberg and others 2006:27, 31-2).

The Waldie Fire is near the head of Moon Creek, a minor tributary of the Yellowstone which enters that river about 10 miles upstream from Miles City. Hay Creek, one of two forks which form the headwaters of Moon Creek, is an intermittent stream about $\frac{3}{8}$ mile to the

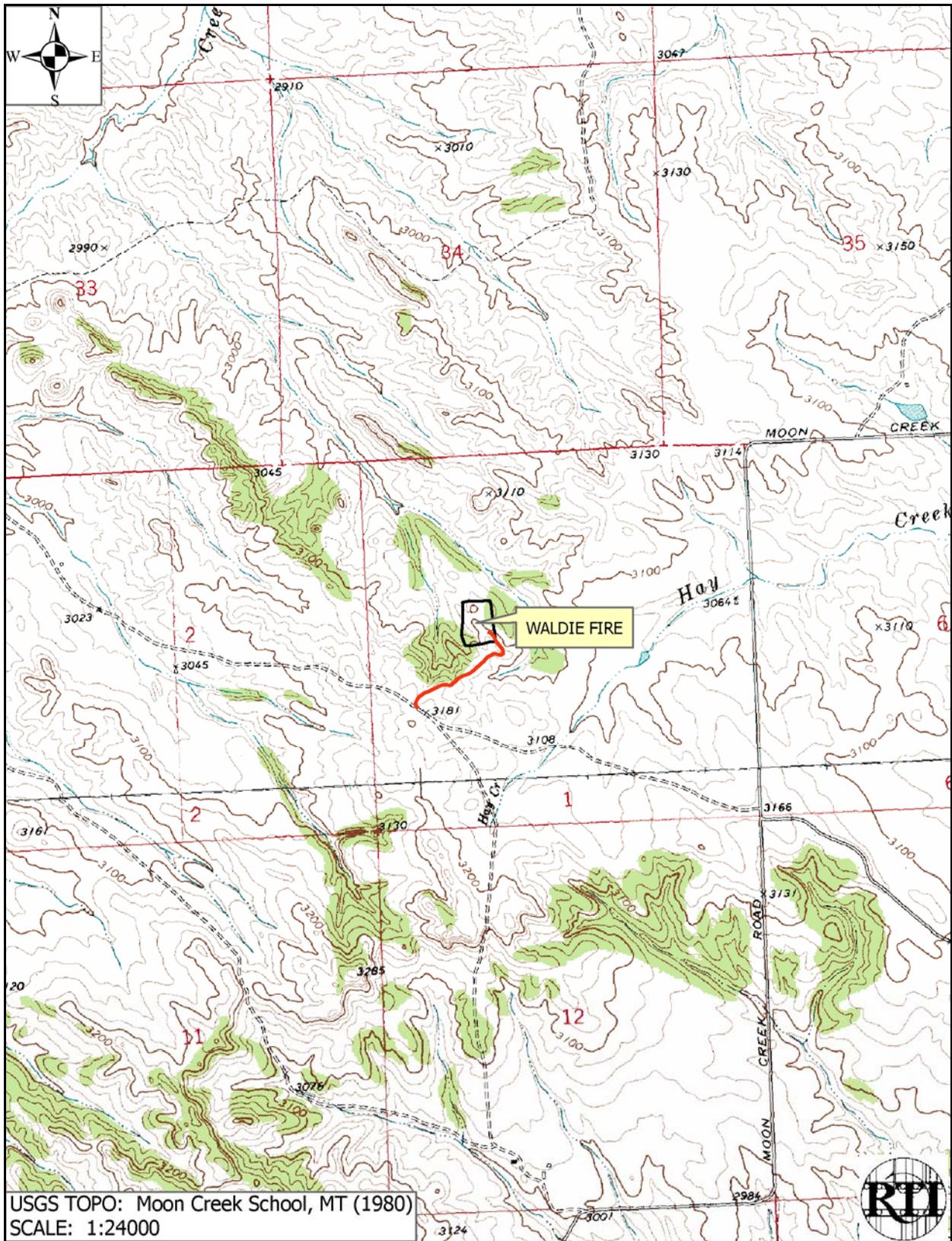


Figure 1. Portion of Moon Creek School topographic map showing cultural resource survey area for Waldie Fire and access road.

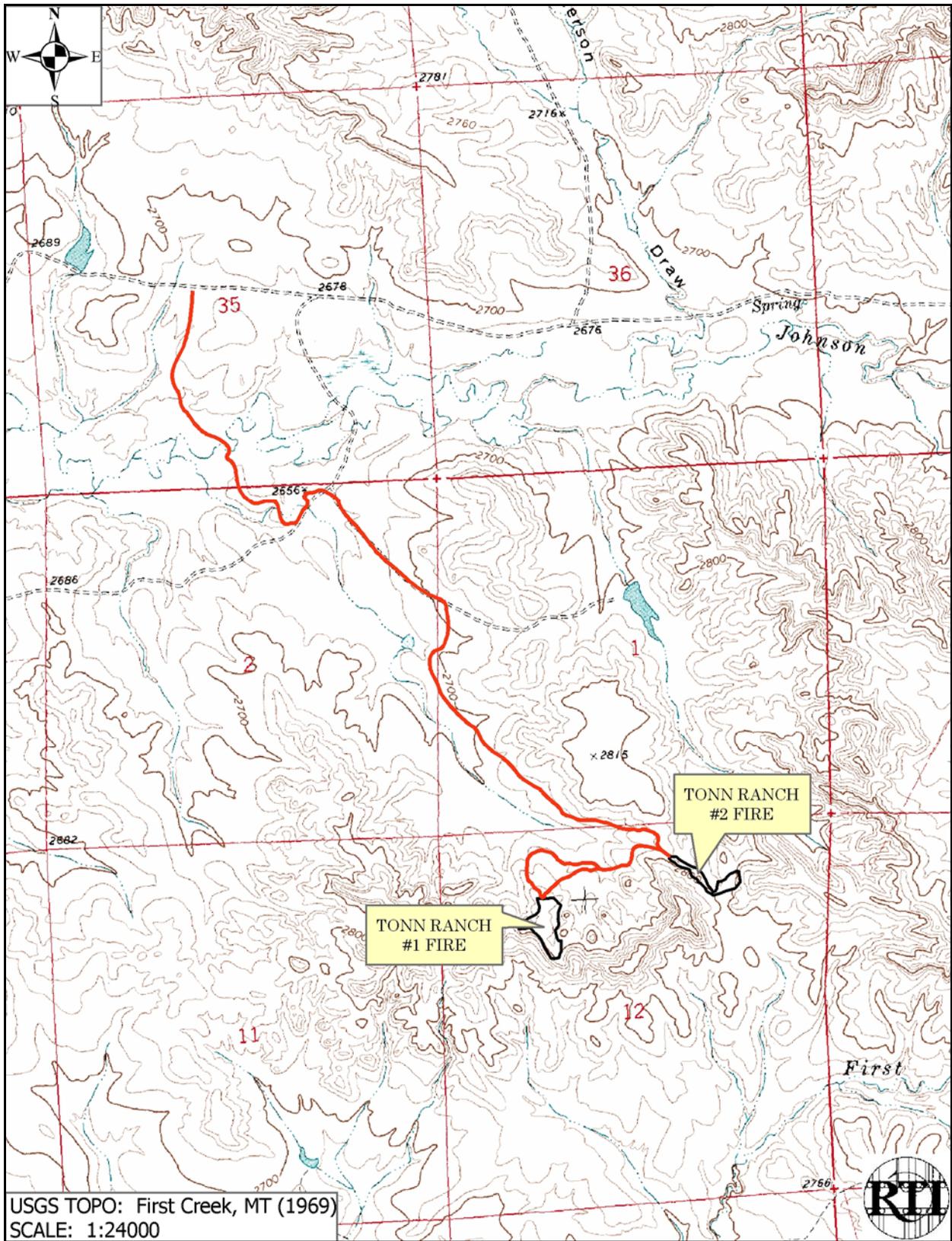


Figure 2. Portion of First Creek topographic map showing cultural resource survey area for Tonn Ranch #1 and 2 Fires and access roads.

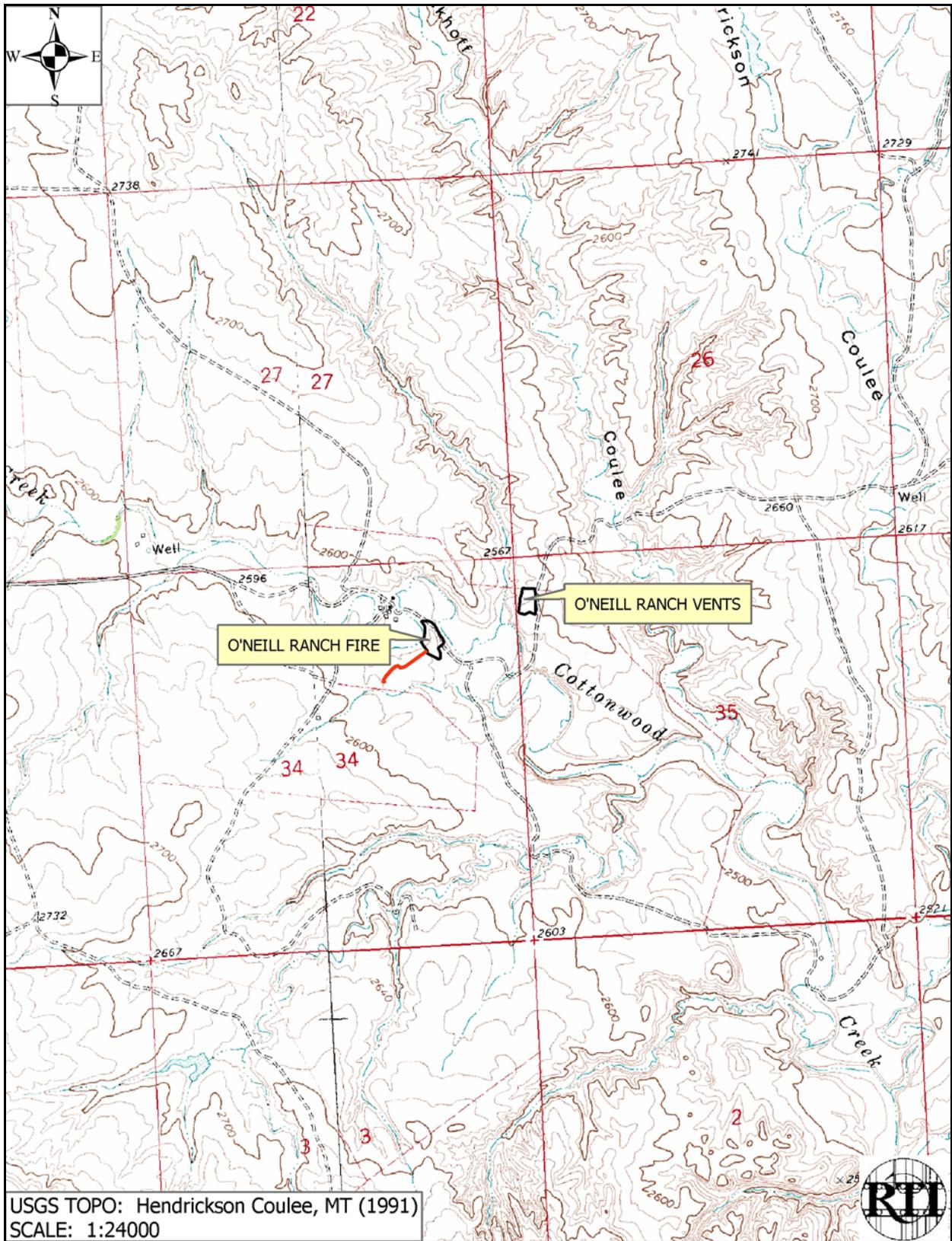


Figure 3. Portion of Hendrickson Coulee topographic map showing cultural resource survey area for O'Neill Ranch Fire (main and vents) and access road.

southeast. The fire is in a hilly area with sandstone bedrock exposed both on top of the highest local landform and in heavily eroded gullies (Figure 4). Much of the sandstone is an orange color, altered by coal fires burning close to the ground surface. The soils in the immediate vicinity of the fire are grayish-tan Cambert-Cherry-Cabba silt loams. The silt loam is derived both from alluvium and from residuum over semiconsolidated sedimentary rock. The access road passes through less hilly terrain to the south and southeast of the fire area (Figure 5). The soils there have been characterized as Cherry-Cambert-Cabba silt loams and Shambo-Lisk-Dast complex. They range in grain size from silt loam to loam, formed in alluvium, are well-drained, and have a deep profile (greater than 80 inches; Natural Resources Conservation Service 2009).

Vegetation at the fire area is fairly typical for the region, including partially burned ponderosa pine trees, some juniper, thistle, grass, and yucca. Along the access road, additional plants include gambel oak, sagebrush, and sagewort. The grass and thistle across the Waldie location limited ground visibility in early August to 5-10% where the ground slope was minimal. In the gullies, however, visibility averaged 40% or more.

The Tonn Ranch Fires lie between Johnson and First Creeks, both tributaries of Pumpkin Creek. Pumpkin Creek is a permanent tributary of the Tongue River, itself a major tributary of the Yellowstone River which meets the latter river at Miles City. The two fire areas occupy broken terrain along the south edge of the Johnson Creek drainage basin (Figure 6). The access road generally lays on plains (Figure 7), except where it crosses Johnson Creek. The soil at the Tonn #1 Fire is Cabbart-Rock outcrop-Yawdin complex loam. It is relatively shallow, with unweathered bedrock at 15-20 inches below the surface. In fact, burned sedimentary gravel is plentiful on ridgetops, suggestive of bedrock near the surface. The well-drained loam soil in the area is formed in residuum over semi-consolidated sedimentary rock. It has about 25% calcium carbonate content. The Tonn #2 Fire is in an area of Cambeth-Megonot complex soil. In the immediate vicinity of the fire, the silty loam soil is deeper than at Tonn #1. It also formed in residuum, and the calcium carbonate content is slightly less. The apparent route which will access the Tonn #2 Fire is in the same soil type, but the terrain is broken and very eroded. At a few small loci along that route, RTI observed porcellanite nodules in lag deposits. In all cases except at 24CR1138 (see below), the porcellanite is relatively grainy and full of checks, making it unsuitable for flintknapping.

The access road routes elsewhere in the vicinity of both the Tonn #1 and #2 Fires are in either calcareous Cambeth-Cabbart-Yawdim complex soil or Sonnett-thin surface Sonnett complex soil. The former covers steeper slopes. It is a well-drained silty loam. Bedrock is about 3 feet below the surface. The Sonnett complex consists of a loamy surface, underlain by silty clay and silty clay loam. Bedrock is more than 80 inches below the surface. The soil formed in clayey alluvium and calcium carbonate content is low.

Vegetation at the Tonn #1 fire area consists mostly of grass and smaller amounts of bitterbrush, yucca, sagebrush, gambel oak, and a single juniper bush. Ground visibility at the time of survey averaged about 50% because numerous barren spots dotted the area. Vegetation at the Tonn #2 fire area is very similar, but ground visibility was slightly less, at about 40%. Vegetation along the long access road again was comparable to that observed at the Tonn #1



Figure 4. Panoramic view of Waldie Fire area, facing west and northwest.



Figure 5. View of terrain along Waldie Fire access road, facing north-northeast.

Fire, but ground visibility varied considerably with the percentage of grass cover along any given section and with the existence of disturbed areas such as rodent burrows and road treads.

The O'Neill Fire is located along the middle of Cottonwood Creek, an intermittent tributary of the Yellowstone River which joins the latter roughly opposite the small community of Fallon. The fire and vent areas are near the lower ends of gently sloping hills regularly cut by steep-sided gullies. Cottonwood Creek, a meandering stream, is 15-20 feet lower in elevation than the landforms on which the fire and vent areas lay (Figure 8). The soils in the vicinity of



Figure 6. Panoramic view of Tonn Ranch #1 Fire area, facing from southeast to west.



Figure 7. Photograph of Tonn Ranch Fires access road near the Section 2/35 line, facing southeast.

the main O'Neill Fire are calcareous Cherry-Typic Ustifluevnts complex. Formed on stream terraces in silty alluvium, these well-drained, deep silt loam soils have a high calcium carbonate content (30%). The soils in the vicinity of the O'Neill vents are Cabba-calcareous Cambert-rock outcrop complex. These shallow, silty clay loam soils formed in residuum weathered from calcareous siltstone. Some eroded, reddened siltstone is exposed, and there are some small clusters of clinkers.

Vegetation at the O'Neill fire areas is typical of the short grass prairie. At the main fire, it consists mostly of grass, but there is also some small sagebrush, prickly pear, and various weeds. Cottonwood trees grow along the creek immediately below the fire area. Ground visibility is good despite the grassy coverage, due to slumping soils, rodent burrows, two-track roads, and livestock trampling. At the vent holes area, the vegetation consists of grass, sagebrush, and sagewort on the flatter, uneroded areas, and creeping juniper, hawthorn,



Figure 8. View of O'Neill Ranch Fire area, with Cottonwood Creek marked by trees, facing north.

bitterbrush, and poison ivy on broken terrain where clinkers are exposed. Ground visibility was good throughout the area.

METHODOLOGIES

Prior to initiating fieldwork, RTI requested that the Montana State Historic Preservation Office conduct a file search for sections at and adjacent to the four fire areas. The results of that search identified few cultural resource inventories and no known previously recorded sites.

In 1980, an inventory of a spring improvement site (Mallard Pit) near Johnson Creek about 1¾ miles northeast of the Tonn Ranch access road identified no sites (Clark 1980). In 2003, several small surveys for water line extensions in the Cottonwood Creek drainage included two within ¼ mile of the O'Neill Ranch Fire. None resulted in recordation of prehistoric sites (Pringue 2004).

RTI's fieldwork in the summer of 2009 involved both the fire areas and access roads. For the Waldie Fire, RTI inventoried a 5.6-acre area that encompassed the fire site and the 0.4 mile access road. The fire area was examined using parallel transects spaced 15 meters apart. The access road that RTI walked was faint but marked by flagging. The entire length of the access road was walked, usually with one transect each on either side of the road prism.

For the Tonn Ranch #1 Fire site, RTI inventoried a 5.6-acre area, and for the Tonn Ranch #2 a 2.8-acre area. The crew employed the same survey strategy as it did for the Waldie Fire. The access road to both fires leads south from County Road 538. The first half (approximately) of the access road is an obvious two-track ranch road. The first 1 mile is the most used, and farther south the tracks are less worn. Farther south, the proposed access road head south and southeast mostly cross-country. There, the track is usually not visible, although use immediately before RTI's site visit allowed the crew to follow the proposed access road path. The final section of the proposed access road is entirely cross-country. The apparent route was simply marked by flattened grass where a vehicle had been driven just shortly before RTI's visit. The total surveyed road length is 3.1 miles. RTI covered the access road route generally with two transects, one on either side of the road prism. The crew walked an additional two transects along the middle section described above, with parallel transects spaced 15 meters from the road edge.

For the O'Neill Fire, RTI inventoried a 2.2 acre area that encompassed the main fire site and a 1.7-acre area at the vent holes. The crew employed the same survey strategies for the fire and vent hole areas as it did for the Waldie and Tonn Ranch Fires. Access to the fire areas is via existing two-track, ranch roads that are well-traveled. The cultural resource inventory did not cover those roads. However, RTI's crew examined a short section of two-track road that crossed a pasture west of the main fire area in case the contractor elects to use this alternate route. That road is just 0.15 mile long. RTI covered it with a single transect plus wide zigzag transects along its north side where it passed immediately above Cottonwood Creek.

To record the three prehistoric sites RTI found in the project area, the crew used the standard Montana Cultural Resource Information System form (revised 2009), digital photography, and resource-grade GPS mapping. It used the standard Montana Isolated Find Form for three isolated finds. No artifacts were collected at either the sites or isolated finds.

INVENTORY RESULTS

RTI found no archaeological or historic sites at the Waldie fire area. There are two prehistoric lithic scatters along the Tonn Ranch Fire access roads and another prehistoric site at the O'Neill Ranch Fire (main) (Figures 9). These three are 24CR1138 and 1139 and 24PE726, respectively. In addition RTI recorded three isolated finds, also on the Tonn Fire access roads. The National Register eligibility of the three prehistoric sites has not been resolved, because all require testing to determine their archaeological integrity.

24CR1138

This is a porcellanite procurement site located around the base of an eroded clinker knoll. It is bisected by the proposed Tonn Ranch Fire access road as it splits with one fork leading to the Tonn #1 Fire and the other to the Tonn #2 (Figure 10). An estimated 300 artifacts were observed. These consist mostly of tested cobbles and a few cores and flake debitage. The gray porcellanite debitage is thick in cross-section and includes both primary and secondary decortication flakes

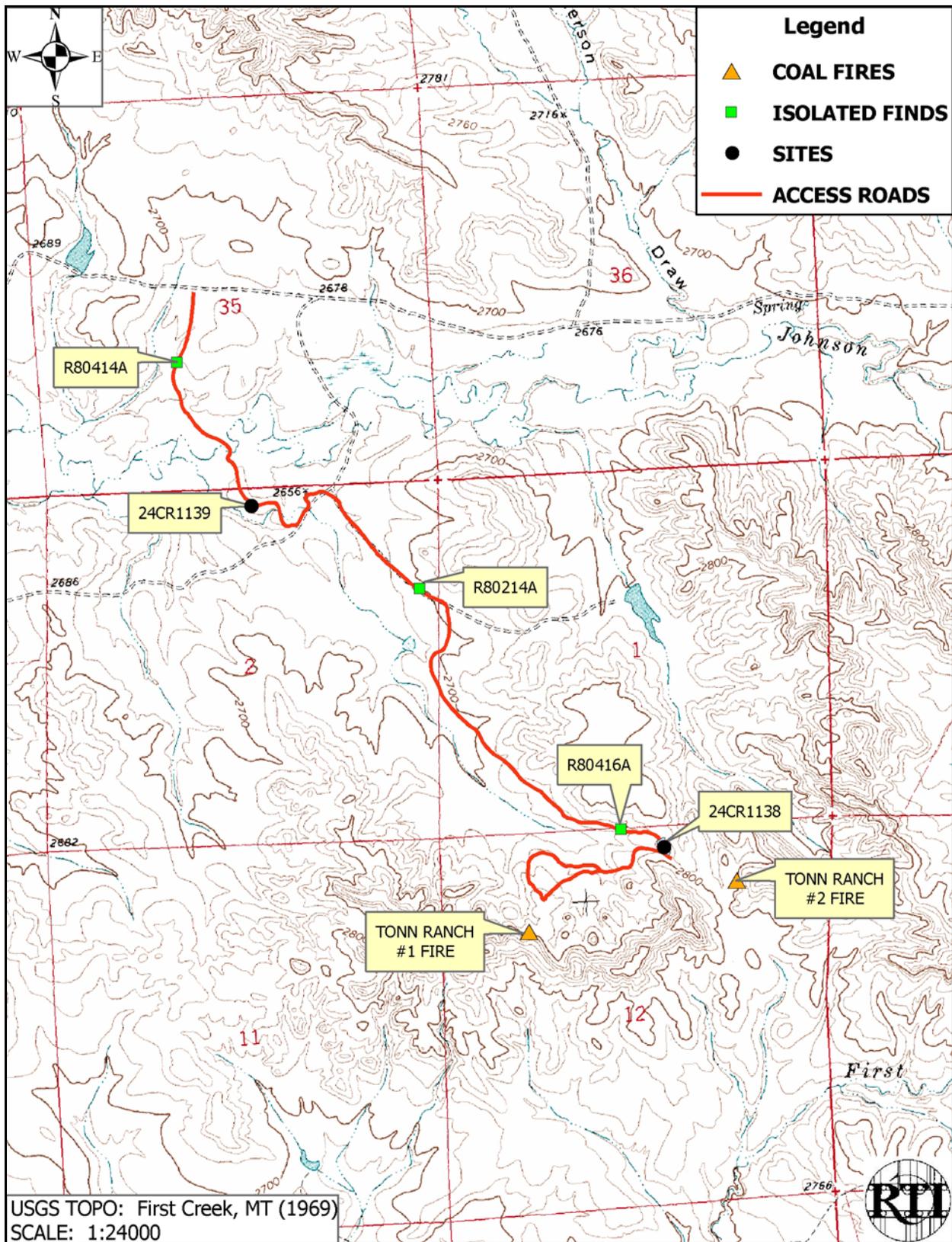


Figure 9. Map showing recorded sites and isolated finds in relation to Tonn Ranch Fires and access roads.

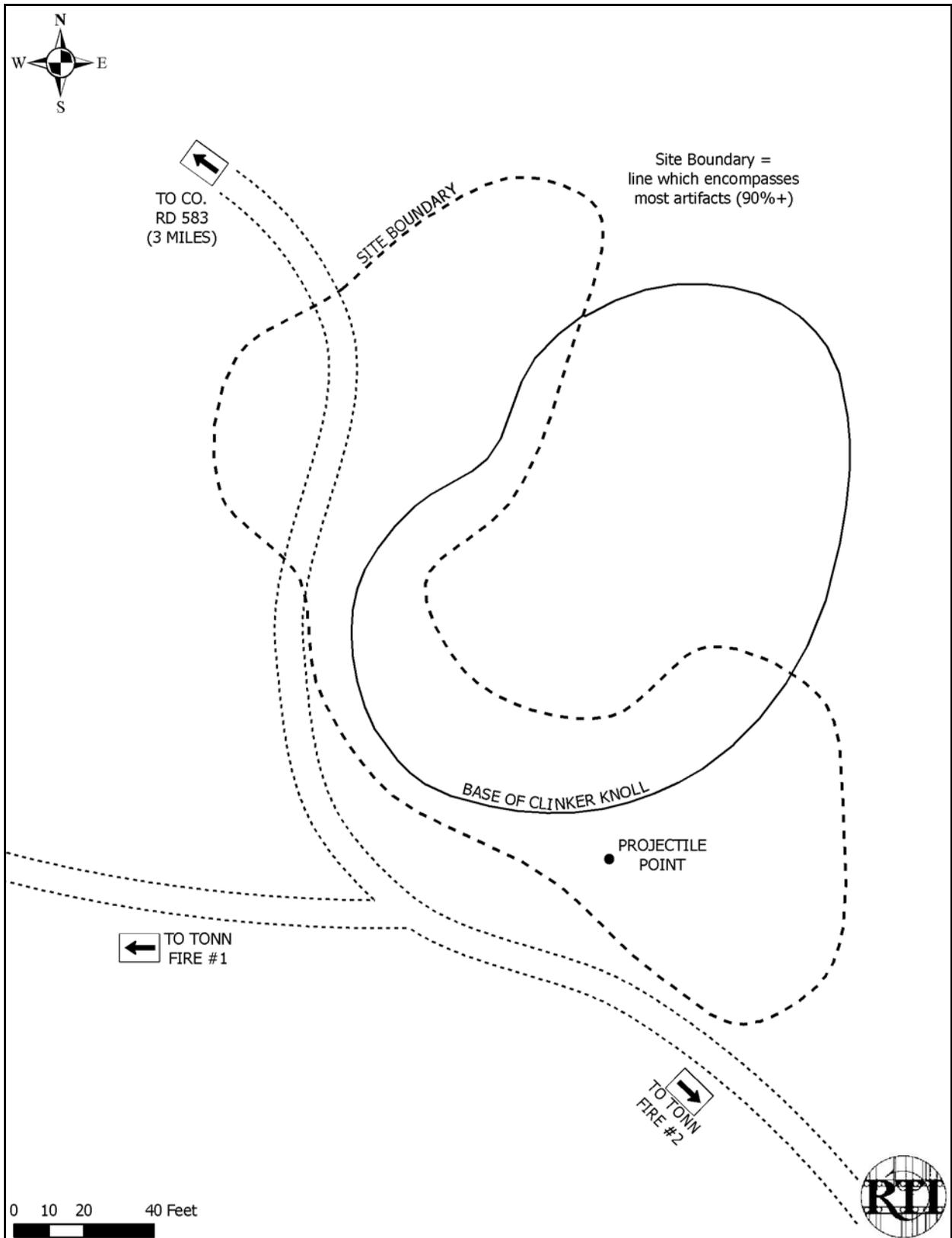


Figure 10. Sketch map of 24CR1138, showing site boundary in relation to clinker knoll and proposed access road to Tonn Ranch Fires #1 and 2.

There is a single formal tool at 24CR1138. It is a nearly complete, corner-removed, indented-base projectile point manufactured from yellow chert. The tip is missing, but in its original form the artifact would have measured about 33x23x7 millimeters (length x width x thickness). Flaking is unpatterned and individual flake scars rarely extend to the projectile point's midline, resulting in its relatively thick cross-section. The broadly-concave base measures 26 millimeters in maximum width and the neck width is 18 millimeters. Notches are shallow and broad, averaging 6 millimeters in width and 2 millimeters deep. They form a contracting stem which abuts the blade base at rounded lateral shoulders. The blade margins are slightly convex and they converge to form a rather blunt tip with an angle of approximately 50 degrees. The shortness of the blade coupled with its broad tip angle suggests that the point had previously been broken and then reworked. The bending fracture termination at the tip appears to be the result of impact, presumably incurred during use (Figure 11).

Based on its size and overall form, the projectile point is most accurately classified as a Hanna-variant of the Middle Prehistoric Period McKean type. Points of that time have been recovered from numerous sites throughout the Northwestern Plains in dated cultural components ranging in age from about 5000 to 2500 B.P.

Site 24CR1138 was used by prehistoric visitors who tested cobbles and developed small cores. Lithic reduction appears to be confined to the initial stage of blank production because all flakes are thick in cross-section. Blanks themselves are absent from the collection, though.

Archaeological testing is required to determine the significance of this property. In theory, though, the site may be important as a dated porcellanite procurement locus. The surface projectile point may be indicative of site age, except that it was found in an erosional environment. Other datable artifacts or features of that age might be present in a buried context, and they might confirm the Middle Prehistoric Period date suggested by the point.

The archaeological integrity of the site must be determined through test excavation. Tested cobbles, cores, and primary reduction flakes on and immediately adjacent to the clinker knoll may not lay in their prehistoric positions because of active erosion on this steep sided, largely unvegetated knoll. However, artifacts were also found on the slope to the west which appears to be less eroded, and in fact is probably a depositional landform. Although RTI observed only a few surface artifacts in that area, ground visibility was not as good as it was elsewhere. It is possible that the west edge of the site might yield an intact prehistoric workshop deposit. Only testing will adequately address that possibility.

The National Register eligibility of 24CR1138 is unresolved at this time. The presence of a temporally diagnostic artifact on the surface and the possibility of a buried component at the west edge of the site argue for archaeological testing as the best means to determine site integrity and significance.

24CR1139

Site 24CR1139 is a small collection of less than 15 surface artifacts. It is a well-defined site area located near the center of a short terrace bordered by a narrow gully on the west and an



Figure 11. Hanna projectile point found at 24CR1138.

old, filled meander loop of Johnson Creek on the east. It is bisected by the Tonn Ranch Fire access road.

The site consists of six pieces of debitage, two exhausted cores, and several pieces of fire-altered rock. Two of the five gray porcellanite flakes are Size Grade 1 (greater than 1 inch in maximum dimension), the remainder are Size Grade 2 (between ½ inch and 1 inch in maximum dimension), and all are thick in cross-section. Three of the five have some cortex remaining on the dorsal surface. A sixth piece of debitage is of brown and white chalcedony. It is Size Grade 2 shatter and has no cortex on it. One of the two exhausted cores measures 77 x 50 x 26 millimeters and has a small amount of cortex remaining on it, and the other measures 65 x 26 x 26 millimeters and also has some cortex.



Figure 12. Piece of fire-altered rock at 24CR1139, possibly intentionally flakes.

The fire-altered rocks at 24CR1139 are six pieces of reddened siltstone or sandstone. One piece, which measures 15x8.6x3.6 centimeters, looks as if it had been intentionally flaked (Figure 12). These pieces of fire-cracked rock are loosely concentrated near the west edge of the site and conceivably could mark the location of a hearth. No surface charcoal was observed.

Surface indications are that this was a temporary camp used mainly as a lithic workshop. The fire-cracked rock suggests an overnight stay or cold-weather use and the porcellanite debitage is indicative of early stage tool production (blank preparation). The porcellanite apparently was not procured on-site, but 24CR1138 (see above) and likely other nearby porcellanite quarries could have been a source for the material at 24CR1139.

Surface examination cannot address the significance of this site. The tight clustering surface artifacts may indicate that this is a single occupation site, however. Such sites are uncommon, and the possibility of datable material at such a site could render the property National Register eligible under Criterion D.

The archaeological integrity of the site must be determined through test excavation. If the small number of surface artifacts at this location are any indication of the size of the subsurface deposit, then there are insufficient numbers of artifacts to make any meaningful interpretations about prehistoric occupation. However, the fire-cracked rock could be indicative

of the presence of datable material on-site. This would allow researchers to date what appears to be a single occupation workshop. Only testing will provide sufficient data to determine site integrity (and significance) with confidence.

The National Register eligibility of 24CR1139 is unresolved until archaeological testing can be done. If a robust collection of lithic artifacts and datable material is present subsurface, then the site likely will yield information important in understanding area prehistory.

24PE726

This property is a prehistoric camp which probably witnessed multiple occupations. Both tool making and food preparation likely occurred here, and to a lesser extent lithic procurement. Artifacts are widely scattered over a 5400-square-meter area on stream terraces above Cottonwood Creek. The site boundaries completely encompass the O'Neill Ranch Fire, but most material lays on the terrace east and south of the point where the fire is exposed at the ground surface (Figure 13).

Lithic artifacts at 24PE726 include about 30 pieces of flake debitage plus a few battered cobbles, choppers, bifaces, and cores. Chert and gray porcellanite flakes are most common (12 each). With only two smaller exceptions, all are Size Grade 2 and thick in cross-section. Chalcedony flakes are less common (n=7), but morphologically they are very similar to chert and porcellanite flakes. The field crew observed a single large (Size Grade 1) coarse-grained quartzite flake. The battered cobbles include three chert, one porcellanite, and one possible basalt, all of which apparently are simply tested cobbles.

Two other basalt(?) cobbles appear to be expedient choppers. One measures 12x11x6 centimeters and has had about four flakes removed from one end (Figure 14). The other cobble is slightly smaller, measuring 8.5x8.5x5 centimeters. One end of the artifact was truncated with the removal of a single flat spall. The opposite end exhibits about four flake scars, which form a steep-angled chopping edge about 5 centimeters long.

The two cores observed are both fairly small, exhausted cores. One, of white and brown chert, has had most of the cortex removed, but the stone is badly checked. It was no doubt discarded because of the inferior material. The other core is of a good-quality red chert. It measures 40x29x14 millimeters.

The three bifaces found at 24PE726 are preforms that were discarded prior to use, apparently due to breakage. The first one is a grayish-red chert tip 44 millimeters thick. The second is a red chert base 6 millimeters thick and 35 millimeters wide (Figure 15). The last artifact in this class is a yellowish-brown chalcedony mid-section. In its broken state, it measures 36 millimeters wide, 22 millimeters long, and 6.5 millimeters thick. There is a bad check on one face, suggesting that the inferior quality of the stone resulted in breakage and rejection.

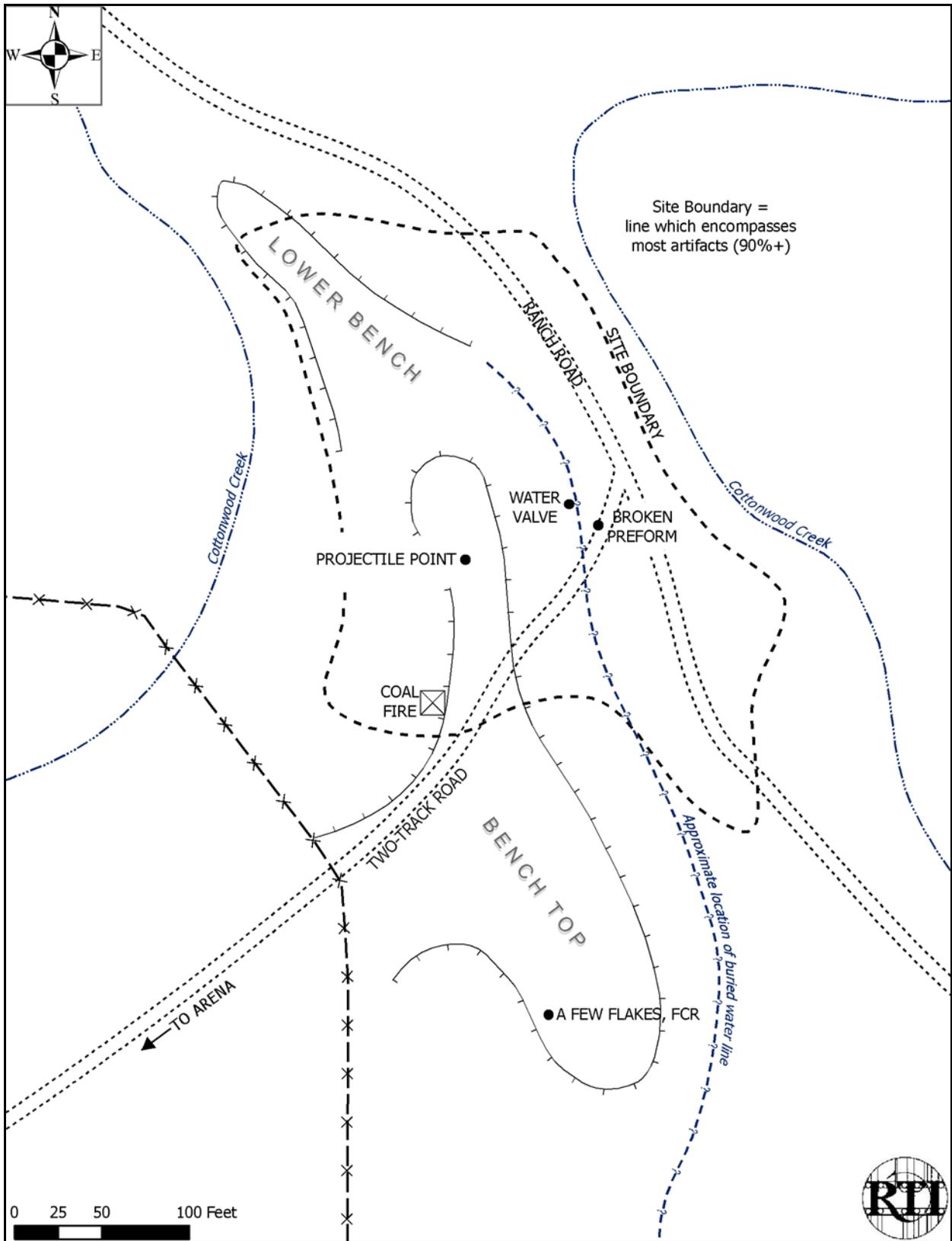


Figure 13. Sketch map of 24PE726, showing site boundary in relation to surface exposure of O'Neill Ranch Fire (main).



Figure 14. Basalt(?) chopper at 24PE726.



Figure 15. Two red chert biface fragments at 24PE726.

The single temporally diagnostic tool found at 24PE726 is a fragment of a large corner-notched projectile point. This is a proximal point fragment with the tip broken at approximately the blade midsection. Additionally, the lateral blade and base tangs on one margin are missing. In its present form it measures 24x21x4.5 millimeters with a neck width of 12 millimeters. The base is flat and corner notches are narrow (<2 millimeters) and deep (>5 millimeters) forming a contracting stem terminating at abrupt lateral blade tangs. Unpatterned flake scars along the margins form straight to slightly convex lateral margins. Those scars extend to the artifact midline or beyond, producing a broad and relatively thin blade with sharp margins (Figure 16).

This is a classic Pelican Lake-type projectile point. The point type, and its Great Basin Elko and Plateau Harder-phase counterparts, has a broad distribution ranging from west of the Continental Divide throughout the intermountain and Northwestern Plains regions. Numerous radiometric dates indicate that Pelican Lake components range in age from 3000 to 1500 B.P.

Finally, RTI observed 24 pieces of fire-cracked rock, all quartzite. The pieces are fairly widely scattered, although most were found at the north end of the site. No charcoal was found in association.

Site 24PE726 is a temporary prehistoric campsite at which multiple activities occurred. The single projectile point found there indicates that at least one of the occupations dates to the period from 3000 to 1500 B.P. The presence of

a good variety of lithic material types plus a few tested cobbles indicates that a lithic procurement locus was nearby (probably in the bed of Cottonwood Creek). Materials were brought to this location for further reduction. The site also likely had a food preparation component because fire-cracked rock is widely scattered. Lastly, the site offers a fairly broad view into the Cottonwood Creek valley and the broken terrain beyond. It would have been suitable for scouting game or watching the movement of other people.

There is some reason to suspect that the site might be able to address important questions about the prehistory in the Yellowstone River basin at a small, but heavily occupied site on a



Figure 16. Pelican Lake projectile point fragment at 24PE726.

moderate-sized tributary of that river. Datable material is present in the form of a single projectile point, and fire-cracked rock suggests that one or more hearths may be present. Surface artifact density strongly suggests that artifacts occur in great enough numbers to provide information on lithic tool production and the character of activity areas within the site.

Site 24PE726 has suffered some damage over time, however, and surface observation cannot identify the extent to which buried cultural horizons have been compromised. Impact agents are varied. A main two-track ranch road cuts through the east edge of the site, and two other two-tracks cross the south edge. Slumping soil and cracks are not only present where the coal fire approaches the surface, but also along the sides of the stream terrace above the fire. A buried water line passes along the east edge of the site (west of the main two-track ranch road) as well. There are numerous rodent burrows, and livestock trample this area somewhat. All of these factors have displaced some artifacts, but it seems possible that some buried sections of the site might still remain intact.

The National Register eligibility of 24PE726 cannot be determined without archaeological testing. That testing will establish the presence or absence of datable artifacts and activity areas in a buried context, whether there are sufficient artifacts to make meaningful statements about multiple prehistoric occupations, and if known impacts over the years have left some parts of the site intact.

Isolated Finds

IF #R80214A is a tested porcellanite cobble and five detached flakes/shatter (Figure 17). The artifacts lay along the side of the Tonn Ranch Fire access road, where that road is an existing two-track. The porcellanite is grainy and checked, and apparently was rejected because of its inferior quality. The nodule now measures 57x57x30 centimeters. The debitage is small and unworkable.

IF #R80416A is a fragment of a brown-gray chert, large corner-notched projectile points. It was found 4 feet off the proposed Tonn Ranch access road route, in a section currently marked by a faint trail. The point is on the sloping edge of a shallow, somewhat broad gully, near the bottom.

Its base element is entirely missing. The proximal end of this point midsection terminates at a fracture running transversely across the tool's neck. The tip is also missing. In its present form, the specimen measures 37x20x4.5 millimeters. Unpatterned flake scars along the margins form straight, to slightly convex, lateral margins. Those scars extend to the artifact midline or beyond producing a broad and relatively thin blade with sharp margins (Figure 18).



Figure 17. Tested porcellanite cobble and shatter at isolated find R80214A.



Figure 18. Pelican Lake projectile point fragment at isolated find R80416A.

The specimen is a classic Pelican Lake-type projectile point. As noted above, numerous radiometric dates indicate that Pelican Lake components range in age from 3000 to 1500 B.P.

IF #R80414A is a single, large, secondary, light gray porcellanite flake. RTI found the artifact in a ranch road bed (Tonn Ranch access route) near the edge of a small terrace above a shallow, braided gully.

This flake is 42 millimeters long and 11 millimeters thick. On the ventral surface, the knapper drove off a long narrow flake, using the distal end of the original flake (with cortex) for a platform. He then apparently discarded the item as unworkable.

SUMMARY

Under contract with the Mine Waste Cleanup Bureau of the Montana Department of Environmental Quality, Renewable Technologies, Inc. conducted a cultural resource inventory of four coal fire areas in Custer and Prairie Counties, Montana. DEQ intends to organize contracts this fall to suppress the Waldie, Tonn Ranch #1 and #2, and O’Neill Ranch Fires at the four locations. During the cultural resource inventory, RTI covered the coal fire areas as well as proposed access roads. The work identified three prehistoric archaeological sites, two in the vicinity of access roads leading to the Tonn Ranch Fires and the other at the O’Neil Ranch Fire. Site 24CR1138 is a porcellanite procurement site; 24CR1139, a lithic workshop and possible overnight camp; and 24PE726, a multiple-occupation campsite. Surface data cannot resolve the question of eligibility for listing in the National Register of Historic Places for any of the three sites. Should avoidance not be possible during fire suppression work, at a minimum archaeological testing is required prior to the beginning of work to determine site significance, integrity, and eligibility.

REFERENCES CITED

- Aaberg, Stephen A., Rebecca R. Hanna, Chris Crofutt, Jayme Green, and Marc Vischer
2006 *Class I Overview of Paleontological and Cultural Resources in Eastern Montana*, vol. 1. Aaberg Cultural Resource Consulting Service, Billings. Submitted to Miles City Field Office, Bureau of Land Management, Miles City.
- Clark, Jerry
1980 "Cultural Resources Class III Inventory Report," number 465. Miles City District, Bureau of Land Management, Miles City.
- Hubbell, Will
2009 "Small Scale and Negative Inventory/Monitoring Report Form," MT-020-08-391. Miles City Field Office, Bureau of Land Management, Miles City.
- Natural Resources Conservation Service
2009 *Web Soil Survey*. Accessed on-line at <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>, 8-9 September.
- Pringue, Bob
2004 "2003 NRCS Field Staff Negative Reports," Prairie County, for SE $\frac{1}{4}$ of Section 21, SE $\frac{1}{4}$ of Section 32, NE $\frac{1}{4}$ of Section 34, SW $\frac{1}{4}$ of Section 27, SW $\frac{1}{4}$ of Section 25, and W $\frac{1}{2}$ of Section 35, Township 14 North, Range 51 East. Natural Resources Conservation Service, Bozeman.
- Rossillon, Mitzi
2009 *March, Shepherd, and Charter Coal Fire Suppression: A Cultural Resource Inventory and Evaluation*. Renewable Technologies, Inc., Butte. Submitted to Mine Waste Cleanup Bureau, Montana Department of Environmental Quality, Helena.
- Truesdale, C.J.
2009 "Small Scale and Negative Inventory/Monitoring Report Form," MT-020-09-357. Miles City Field Office, Bureau of Land Management, Miles City.