



Figure 3-14. Morning Star spoils pile from, 1917. (BUFF Archives)



Figure 3-15. The spoils pile from Morning Star Mine (M1). Over time the spoils piles have settled and revegetated. They are easily mistaken for natural hills. (Mundus Bishop 2017)

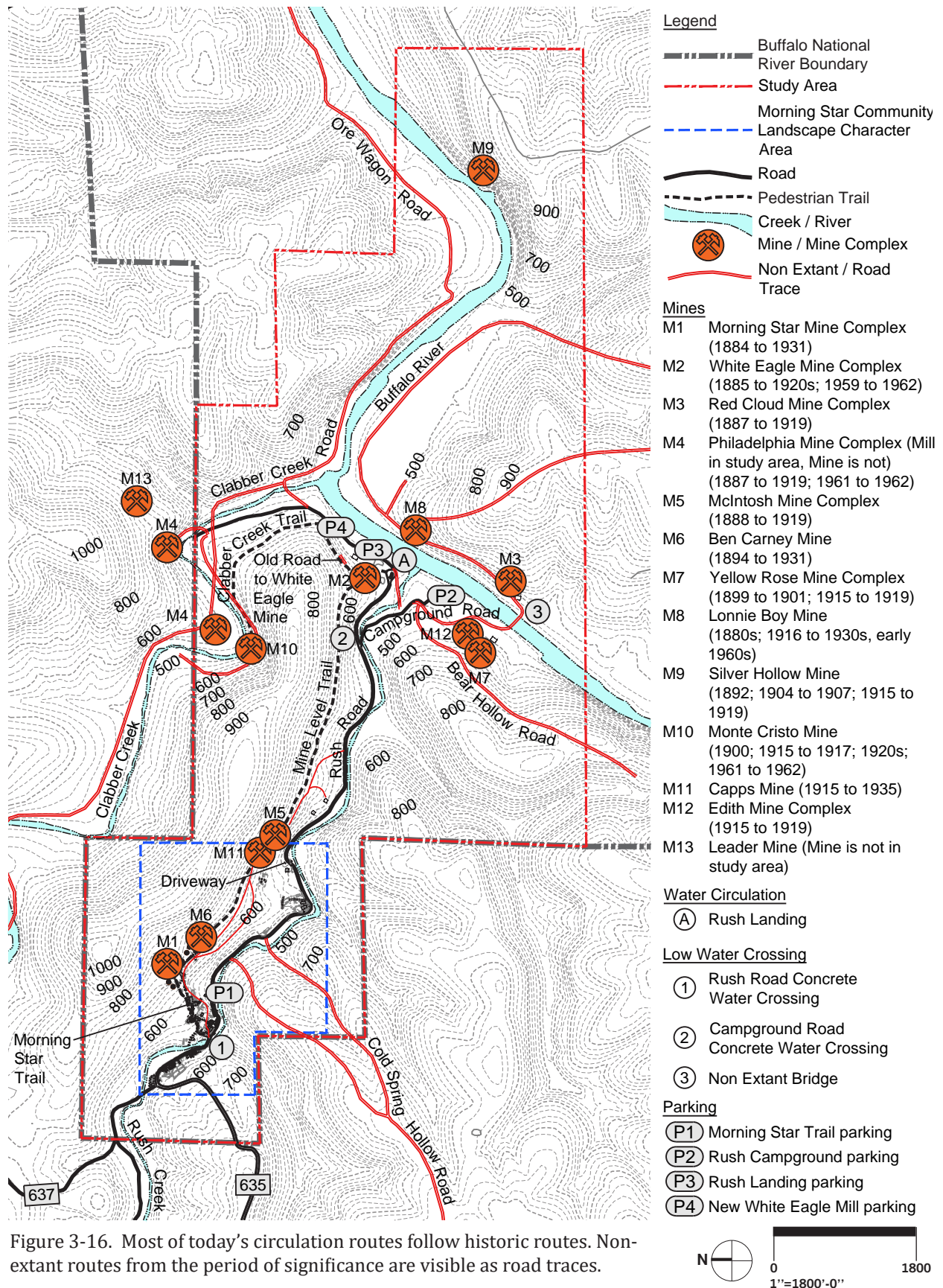


Figure 3-16. Most of today's circulation routes follow historic routes. Non-extant routes from the period of significance are visible as road traces.

(Mundus Bishop 2017, USGS 2013 - National Geographic Society, Arkansas GIS (<https://gis.arkansas.gov/>), Google Maps 2017, Historic Resource Documentation Morning Star Mines Interpretive Area, Cultural Landscapes Inventory 2012)

1 **Circulation**

2
3 The study area's circulation system consists
4 of vehicular, pedestrian, tramway, and water
5 routes. Most routes were built during the
6 period of significance. Today they provide
7 access to the historic resources, access to the
8 water, support recreational uses, and provide
9 access to private property.

10

11 **Vehicular Circulation**

12

13 Existing vehicular routes include gravel roads
14 and parking areas. Rush Road is the main
15 route into the study area and connects to
16 County Road 635 and Arkansas Highway 14
17 on the west. Rush Road crosses Rush Creek
18 via a concrete water crossing adjacent to
19 House Row and extends to the edge of Buffalo
20 River, where a loop drive provides access to
21 the river. Two parking areas are at the end
22 of Rush Road and another is downhill of
23 Morning Star Mill ruins. Rush Road meets
24 Clabber Creek Road at Buffalo River. Clabber
25 Creek Road runs north south at the edge
26 of the river to extend up Clabber Creek.
27 Campground Road crosses Rush Creek via a
28 concrete water crossing and extends south to
29 provide access to Rush Campground.

30

31 The vehicular circulation system was
32 developed in the late 1800s as part of the
33 initial settlement. Roads and trails were
34 built in response to the native topography,
35 which often necessitated steep gradients to
36 access the mines. Rush Road is the main route
37 through the study area, with a network of
38 roads branching off from this central spine.

39

40 Several vehicular routes that existed
41 historically are overgrown with vegetation
42 and visible today as traces. These include the
43 roads at Morning Star Hotel, Mill, and Mine
44 Community, Hicks Hotel, Edith Mine Complex
45 (M12), and White Eagle Mill ruins. In several
46 places spur roads that are evident on historic

47 maps that crossed Rush Creek to the south do
48 not appear to be extant today. In the 1880s
49 ore was hauled out of the study area via the
50 Ore Wagon Road that followed Buffalo River
51 downstream. This route was later phased out
52 in favor of the northern route via Rush Road
53 to County Road 365 to Arkansas Highway 14
54 to Yellville railroad. After the 1930s the Ore
55 Wagon Road was discontinued and no longer
56 evident on historic maps. Some clearing and
57 grading was done to Ore Wagon Road in the
58 1980s by the NPS to provide access to Laffoon
59 Cemetery at Cabin Creek (outside study area).

60

61 Between the late 1880s and 1929 a bridge
62 crossed Buffalo River, connecting the mines
63 on either side. The bridge and roads on the
64 east side of the river are not extant.

65

66 *Assessment of Integrity*

67 The study area's vehicular circulation system
68 remains similar to the period of significance
69 and retains integrity. Most existing roads
70 follow historic alignments. Modifications to
71 Rush Road include widening and resurfacing
72 completed in the 1980s, and addition of
73 parking areas and loop drive at the river
74 landing. These alterations do not diminish the
75 integrity of the road. Campground Road, built
76 in the 1990s, followed an historic route in this
77 same alignment that was part of New Town's
78 main street.

79

80 **Pedestrian Circulation**

81

82 Pedestrian routes include hiking trails and
83 informal routes along Rush Road that access
84 ruins and the river. These routes compose a
85 system of trails primarily developed by the
86 NPS to provide recreation and interpretation
87 of Rush Historic District. Some of the trails
88 follow historic routes.

89

90 Morning Star Trail was built in 1988 and
91 provides an interpretive walking trail through
92 the Morning Star Hotel, Mill, and Mine



Figure 3-17. Rush Road at House Row, the Storekeeper's House and Taylor-Medley General Store at right, date unknown. (BUFF Archives)



Figure 3-18. Rush Road at House Row. The road retains its historic alignment but has been widened and resurfaced since the period of significance. (Mundus Bishop 2017)

1 Community. This route follows historic roads
2 for a portion of the length, and provides a
3 view to Morning Star Mill ruins from the west.

4
5 The longer interpretive loop, Mine Level Trail,
6 connects to the mining level and follows an
7 historic trail that parallels the contour level of
8 the mine entrances on the south side of Rush
9 Mountain. The west part of this trail follows
10 the former tramway line that extended from
11 Capps Mine (M11) to Morning Star Mill, used
12 between 1890 and 1935 to transport ore.

13
14 Clabber Creek Trail connects White Eagle
15 Mill to Monte Cristo Mine (M10) on the north
16 side of Rush Mountain, where it connects to
17 Clabber Creek Road. It is unknown if this is an
18 historic route.

19
20 Historically, a footbridge connected House
21 Row with the Morning Star Mine Complex
22 (M1), and it is likely other footbridges
23 provided access across Rush Creek at various
24 points. These footbridges are non-extant.
25 Other than footbridges, the circulation system
26 did not distinguish between vehicular and
27 pedestrian routes.

28
29 *Assessment of Integrity*

30 The pedestrian circulation system is similar
31 to the historic condition. Portions of existing
32 trails follow historic vehicular or tramway
33 routes, similar to the historic. Pedestrian
34 routes retain integrity and contribute to the
35 study area's cultural landscape.

36

37 **Tramway/Rail Circulation**

38

39 Historically mines and associated mills each
40 had circulation networks of tramways that
41 transported ore from mine to mill. Tramways
42 were gravity-fed, shipping rock from the
43 mine to the mill for processing. Tramway
44 piers are extant at Morning Star Mill ruins.
45 The tramway bed from Capps Mine (M11) to
46 Morning Star Mill used between 1890 and

47 1935 is extant as a route, although the track
48 is gone. Rail fragments are extant inside some
49 mines.

50

51 During active mining, a railway was intended
52 for Rush Valley. Portions of Clabber Creek
53 Road and Campground Road to Edith Mine
54 Complex (M12) were graded in preparation
55 for the railway, but the tracks were never
56 installed. Today the railway bed is evident
57 along Clabber Creek Road, and reads as a
58 wide level route.

59

60 *Assessment of Integrity*

61 The tramway/rail system is evident in
62 the landscape today but its presence is
63 diminished due to the loss of track and
64 the elevated tramway structures. Since the
65 period of significance these features have
66 been removed and the tramway system has
67 diminished integrity.

68

69 **Water Circulation**

70

71 Boating and fishing are popular activities
72 within Buffalo National River and visitors
73 enter and exit the study area from Buffalo
74 River. Rush Landing is a boat launch that
75 provides access to the river. Parking at the
76 end of Rush Road accommodates boat trailers.
77 The landing and parking are contemporary
78 additions.

79

80 *Assessment of Integrity*

81 The water circulation system during the
82 historic period differed from today's use.
83 Initially mine operators transported ore
84 on Buffalo River. Due to low water volume,
85 shipping ore on the river proved difficult
86 year-round and by the early 20th century
87 water transport was given up in favor of
88 overland routes. Although the pattern of use
89 has changed, the access points to the river
90 are in similar locations to historic locations
91 and the pattern of water circulation retains
92 integrity.



Figure 3-19. Rush Road is the major vehicular route through Rush Historic District dating to the late 1800s. It retains the original alignment following Rush Creek. (Mundus Bishop 2017)



Figure 3-20. Rush Road crosses Rush Creek via a concrete water crossing near House Row. (Mundus Bishop 2017)

Matrix 3-8. Study Area - Circulation				
Feature	Date	Description	Condition	Contributing/ Non-Contributing
Rush Road	c 1880	Two-way gravel road, 20' to 24' wide. Water crossing at Rush Creek at-grade concrete slab.	Good	Contributing
Morning Star Trail Parking	1988	Wood guardrails, trailhead kiosk, shade structure with two benches. Gravel surfaced loop drive at Rush Road	Good	Non-Contributing
Clabber Creek Road		Rock/unimproved surface at edge of cliff-face, typical 10' wide to 15' wide. At road closure, road widens to 16 to 20' across, gravel	Good to Fair	Contributing
Morning Star Trail	1988	<i>NPS Interpretive Trail</i> - Loop trail from parking to Morning Star Livery Barn ruins/Rush Smelter; Rush Blacksmith Shop; Morning Star Mill ruins. 4' wide, gravel with pressure treated steps and water bars. Stone steps	Good	Portions are Contributing
Mine Level Trail	c 1885	4' wide, gravel, pressure treated timbers, steps and water breaks. Splits 100 yards from trailhead, west to Morning Star Mine Complex (M1), north to Clabber Creek Trail and Monte Cristo Mine (M10)	Good	Historic portions that follow Tramway = Contributing
Mine Level Trail at Ore Cart		5' Wide level terrace, lower stone rubble retaining wall, 24" width x 3' height	Good	Contributing
Clabber Creek Trail		3' wide, dirt surface. Connects White Eagle Mill with Monte Cristo Mine (M10)	Good	Non-Contributing
McIntosh Roadbed and Spurs	c 1900-1930s		unverified	Contributing
Driveway	c 1950	Spur off of Rush Road across from Boiling Spring, 12' wide, gravel	Fair	Non-Contributing
Old Road to White Eagle Mine	c 1958	20' to 25' wide road trace, legible but overgrown	Fair	Non-Contributing
Rush Landing	c 1980	Accessed by loop drive at end of Rush Road. Landing is dirt/exposed rock surface.	Good to Fair	Non-Contributing
Capps Mine Roadbed			unverified	Contributing
Rush Landing Parking		Gravel paved parking area opposite comfort station. Approximately 40' wide by 60' long. Accommodates approximately 10 passenger vehicles and room for boat trailer parking.	Good	Non-Contributing
New White Eagle Mill Parking		Square parking at New White Eagle Mill ruins; one entrance from Clabber Creek Road.	Good	Non-Contributing
Campground Road	1915 and earlier	Gravel road, 16' wide average. Water crossing at junction of Rush Road and Rush Creek of at-grade concrete slab. Road terminates at campground	Good	Contributing
Rush Campground Parking		Gravel paved, angular parking area, edged with timber guardrails. Accommodates approx 12 vehicles.	Good	Non-Contributing



Figure 3-21. Morning Star Trail parking was added in the 1980s and is a non-contributing feature. (Mundus Bishop 2017)



Figure 3-22. Rush Landing parking is a non-contributing feature and encroaches on the setting of the White Eagle Mill ruins, in background. (Mundus Bishop 2017)



Figure 3-23. Campground Road concrete water crossing at Rush Creek. Campground Road is part of the original route to New Town, Yellow Rose Mine Complex (M7), and Edith Mine Complex (M12), established in the early 1900s. (Mundus Bishop 2017)



Figure 3-24. Rush Campground parking is a non-contributing feature. (Mundus Bishop 2017)



Figure 3-25. Clabber Creek Road connects to Monte Cristo Mine (M10) and Ore Wagon Road. This route also provides access to private property beyond the NPS boundary. (Mundus Bishop 2017)



Figure 3-26. Rush Landing. (Mundus Bishop 2017)



Figure 3-27. Clabber Creek Trail connects White Eagle Mine (M2) with Monte Cristo Mine (M10). (Mundus Bishop 2017)

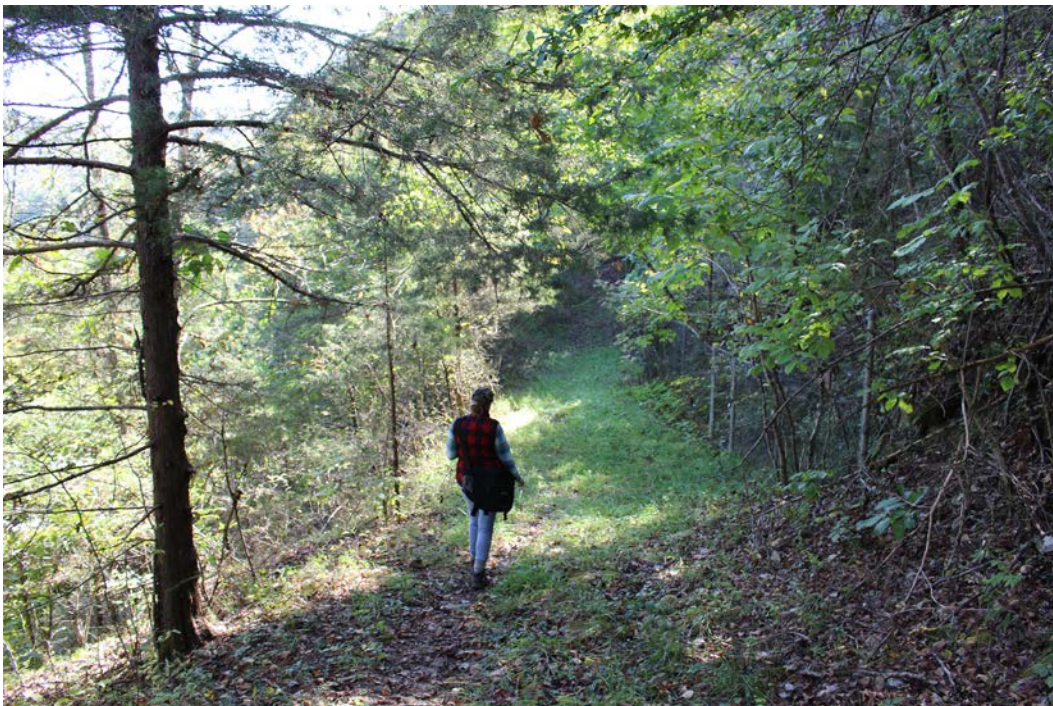


Figure 3-28. Clabber Creek Road near Monte Cristo Mine (M10). The road is narrow and set on the edge of the hillside. Clabber Creek is downhill to the left. (Mundus Bishop 2017)



Figure 3-29. Mine Level Trail adjacent to Morning Star Mine (M1). The trail follows an older, historic route. (Mundus Bishop 2017)



Figure 3-30. Mine Level Trail near Capps Mine (M11). This portion of the trail follows the former tramway that extended from Capps Mine to Morning Star Mill, used between 1890 and 1931 to transport ore. (Mundus Bishop 2017)



Figure 3-31. Gravity-fed tramways shipped ore from mines to mills. The exact route of these tramways is unknown, except near Morning Star Mill, where the tramway piers are extant, date unknown. (BUFF Archives)



Figure 3-32. Footbridge across Rush Creek, Taylor-Medley General Store behind, date unknown. (BUFF Archives)



Figure 3-33. Morning Star Trail was added in the 1980s. Below Rush Blacksmith Shop the trail follows the alignment of an historic road. (Mundus Bishop 2017)



Figure 3-34. Morning Star Trail disrupts the historic spatial organization by ascending the tailings pile of Morning Star Mill ruins before crossing an historic retaining wall to meet the level terrace of the mill. (Mundus Bishop 2017)

1 **Buildings and Structures**

2
 3 Buildings and structures within the study
 4 area include two visitor comfort stations
 5 and a shelter. These were added by the NPS
 6 to support recreational activities associated
 7 with the river landing and campground.

8
 9 Buildings and structures associated with
 10 Morning Star Community landscape character
 11 area are presented separately in the section
 12 reserved for the landscape character area.

13
 14 *Assessment of Integrity*

15 Buildings and structures of the study area are
 16 contemporary additions and non-contributing
 17 features.

18
 19 The many buildings and structures built
 20 during the period of significance, have been
 21 removed and/or were abandoned and left
 22 to deteriorate. Today these buildings are
 23 predominantly ruins.

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Figure 3-35. Rush Landing Shelter. (Mundus Bishop 2017)



Figure 3-36. Rush Campground Comfort Station. (Mundus Bishop 2017)

Matrix 3-9. Study Area - Buildings and Structures				
Feature	Date	Description	Condition	Contributing/ Non-Contributing
Rush Landing Comfort Station		Prefabricated fiberglass pit toilet on concrete pad	Good	Non-Contributing
Rush Landing Shelter		Rectangular wood structure 16' x 10' on concrete pad. Picnic tables, information panels	Good	Non-Contributing
Rush Campground Comfort Station		Prefabricated fiberglass pit toilet on concrete pad	Good	Non-Contributing



Figure 3-37. The lower entrances to McIntosh Mine (M5) are closed off with metal grates, typical of most horizontal mine portals. The dense vegetation makes it difficult to see the mine portals and rock face. (Mundus Bishop 2017)



Figure 3-38. Chainlink fencing has been installed across most mine entrances. This fencing distracts from the historic character. (Mundus Bishop 2017)

1 Mine and Mill Complexes

2
3 Rush Historic District was comprised of ten
4 mining companies and fourteen zinc mines,
5 which operated between 1885 and 1962.^{3,9}
6 Mines were established based upon terrain
7 and the deposits of zinc. Three different types
8 of mines were built: horizontal, vertical, and
9 open-pit mines.

10
11 At higher elevations, miners extracted ore
12 horizontally, creating horizontal adits cut
13 into the rock face. Over time, these mines
14 became extensive caverns. Many horizontal
15 mines were developed along drifts, while
16 others utilized the room-and-pillar method
17 of mining, which included blasting large
18 voids of the rock while leaving solid pillars to
19 support the overlying rock. This resulted in
20 a mine with broad, open rooms interrupted
21 by occasional pillars. Today, room-and-pillar
22 mines are visible on the surface, evidenced
23 by wide stone portals at the face of stone
24 outcropping. Mines of this type include Capps
25 Mine (M11) and Red Cloud Mine (M3). Monte
26 Cristo Mine (M10), McIntosh Mine (M5), and
27 Ben Carney Mine (M6) were drift mines.

28
29 Mines at the lower elevations extracted ore
30 vertically. Vertical mines were vertical shafts
31 or pits descending into the ground that
32 extracted ore through vertical shafts, often
33 with adits cut into the slopes above. Typically,
34 the vertical shafts had a hoist house to pull
35 ore out of the shaft. Today, vertical mines are
36 visible either as deep holes in the ground or
37 as depressions. Mines of this type include
38 White Eagle Mine (M2), Edith Mine (M12),
39 and Lonnie Boy Mine (M8).

40
41 3.9 Field investigations for this CLR included study of the
42 exterior of the mines focusing on the visual and spatial
43 experience. The interior condition of the mines and
44 descriptions are based upon Burghardt, J. 1989 *Safety*
45 *Inspection of the Rush District Abandoned Mines*. (1989).
46 Eleven mines are located in the study area. Three mines,
Philadelphia Mine (M4), Leader Mine, and Beulah Mine,
are outside NPS property and the NRHP boundary.

47 Open-pit mining was the least common
48 method used. This was employed at
49 Morning Star Mine (M1) where an open
50 cut was made 400 feet long, 100 feet wide
51 and approximately 50 feet deep into the
52 mountain. This type of mining was the easiest
53 to undertake. Today Morning Star Mine open
54 cut is very apparent and visible.

55
56 The ruins of the zinc concentrating mills are
57 components of the mines both physically
58 and functionally. Concentrating mills were
59 associated only with the major mining
60 companies. Mills included Morning Star Mill,
61 White Eagle Mill, Red Cloud Mill, Philadelphia
62 Mill, McIntosh Mill, Yellow Rose Mill, and
63 Edith Mill.

64
65 Mills were the largest buildings within the
66 study area, and were prominent due to their
67 elevated position and lack of surrounding
68 trees. These structures housed large pieces
69 of equipment and were set on concrete
70 pier foundations. Elevated tramways on tall
71 trestles connected the mills to the mines.
72 Today, mill ruins are evidenced by massive
73 pyramidal concrete pier foundations. Most of
74 the superstructures were removed for scrap
75 after productive mining had ended. Additional
76 remains of the mills may occur below-grade.

77
78 The mines at Rush Historic District retain
79 integrity. The mines are reflective of the
80 historic condition with few alterations. Most
81 mines are fenced with security fencing with
82 metal grates at the portals and chainlink fence
83 set away from the portal to prohibit entry.
84 Smaller digs have no apparent portals and are
85 evidenced as cuts into the hillside. Vegetation
86 obscures most of the entry portals and adits.
87 Rock fall at the adits and horizontal cuts is
88 common, obscuring the historic form. Mines
89 are vulnerable to rock instability, cave-ins,
90 and subsidence issues that create unstable
91 walking surfaces. Investigations in 1989
92 reported most of the mine interiors were



Figure 3-39. White Eagle Mill (M2), 1902. (Mundus Bishop 2017)



Figure 3-40. The entrance to White Eagle Mine (M2) is collapsed, with no visible portal. (USGS Photos, BUFF Archives)

1 unstable, portions were flooded, and abrupt
 2 drop-offs make the mines dangerous to
 3 enter.^{3.10} Rock fall and erosion have added to
 4 the degradation of the mining entrances, and
 5 vegetation obscures the rock outcroppings
 6 and wide portal openings. The presence of
 7 chainlink fence, at varying distances from the
 8 mine openings, diminishes from the historic
 9 setting and obscures the mine portals.

10

11 **White Eagle Mine Complex**

12

13 White Eagle Mine (M2) (1885 to 1920s; 1959
 14 to 1962).

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16

17 White Eagle Mine (M2) was active between
 18 1885 and the 1920s, and again between 1959
 19 and 1962. It was operated by the Buffalo Zinc
 20 and Copper Company, and the Rush Creek
 21 Mining Company. The mine consists of 3 adits
 22 on the hillside of Rush Mountain. The main
 23 adit is closed in with no open portal. A large
 24 spoils rock pile is evident across and downhill
 25 from the mine opening. Additional openings/
 26 mine locations of White Eagle Mine have been
 27 noted by the NRHP.^{3.11}

28

29 *Assessment of Integrity*

30 White Eagle Mine (M2) was blasted shut
 31 after the end of the period of significance.
 32 The horizontal adit can still be seen. The
 33 mine retains integrity and contributes to the
 34 cultural landscape.

35

36 White Eagle Mill Ruins

37

38 White Eagle Mill, established in 1903, was one
 39 of the earliest mills built. Mill ruins include
 40 a series of concrete piers and a dry stacked
 41 stone wall. A retention basin is to the west
 42 of the mill piers. Multiple tailings piles are
 43 evident near the mill ruins. Rush Landing

44

45 ^{3.10} Burghardt, *Safety Inspection*.

46 ^{3.11} NRHP, 1-22.

47 parking is located on top of a portion of the
 48 former mill, which diminishes the historic
 49 setting.

50

51 *Assessment of Integrity*

52 White Eagle Mill ruins retain integrity
 53 although it is diminished due to the parking
 54 built over the underground ruins. The mill
 55 ruins contribute to the cultural landscape.

56

57 New White Eagle Mill Ruins

58

59 New White Eagle Mill was active from 1959
 60 to 1962. The mill ruins are located just west
 61 of the New White Eagle parking off Clabber
 62 Creek Road. Visible ruins include concrete
 63 pyramidal piers and a wide tailings area.

64

65 New White Eagle Mill was removed for
 66 salvage after closing in the 1960s. These ruins
 67 are more visible than at the other mills due
 68 to lack of vegetation and proximity of New
 69 White Eagle Mill parking.

70

71

72 *Assessment of Integrity*

73 New White Eagle Mill dates after the period
 74 of significance and is not a contributing
 75 feature, but it is compatible with the historic
 76 character of the study area.

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Figure 3-41. White Eagle Mill, 1917. (BUFF Archives)



Figure 3-42. White Eagle Mill ruins are a series of concrete piers, at the edge of Rush Landing parking. (Mundus Bishop 2017)



Figure 3-43. New White Eagle Mill, 1960. (BUFF Archives)



Figure 3-44. New White Eagle Mill ruins. (Mundus Bishop 2017)



Figure 3-45. Main portal, Red Cloud Mine (M3), date unknown. (BUFF Archives)



Figure 3-46. Red Cloud miners, c 1915-1916. (BUFF Archives)