XMH-1100
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Figure 155: General view of site, XMH-1100 heading south

Site XMH-1100 is located on a large isolated hill. The hill is approximately 45 meters north/south and 25 meters east/west and is elevated 30 meters above the surrounding terrain. The hill slopes gradually on the north side and descends more steeply on the south side. Site affords a 360 degree unobstructed view of the surrounding terrain, and North Caribou Lake and South Caribou Lake are visible less than one kilometer to the southwest and the Granite mountains are visible in the distance to the southeast. Due to recent episodes of forest fires, a high degree of surface visibility was observed at the site. UTM coordinates for the site are: [redacted]

XMH-1100 consists of two flakes and a large unifacial flake core found on the exposed surface in a 15 meter area on the southeast slope of the hill. Artifacts include one large gray quartzite unifacial flake core that measures 16cm long and 9cm wide, one light gray chert secondary flake and one tan siltstone (most likely chert) secondary flake. Subsurface excavations have yet to be conducted.

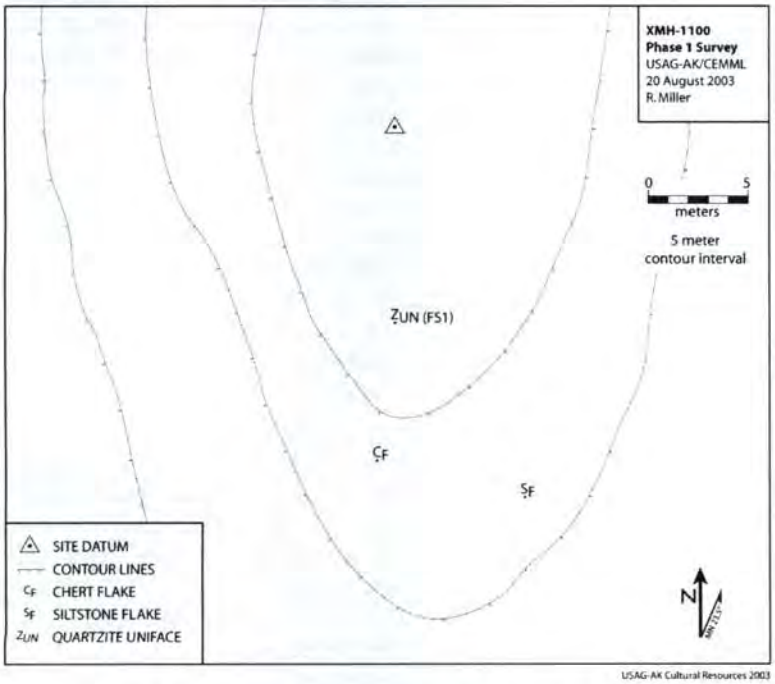

Figure 156: Site map of testing at XMH-1100.

RECOMMENDATIONS

XMH-1100 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1101
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Site XMH-1101 is located on a high point of an east/west running knoll. The site overlooks an unnamed lake approximately 50m to the south and has a 360° unobstructed view of the surrounding area. The site has a high percentage of surface visibility with the surrounding area composed of mixed forest with low scrub, moss lichen and tussock fields. UTM coordinates for the site are: [redacted]

Figure 157: General view of site, XMH-1101 heading south

XMH-1101 consists of two tertiary flakes located on the surface. One fine grained basalt flake and one gray chert flake. Subsurface examinations have yet to be conducted. Density plots have not been calculated.

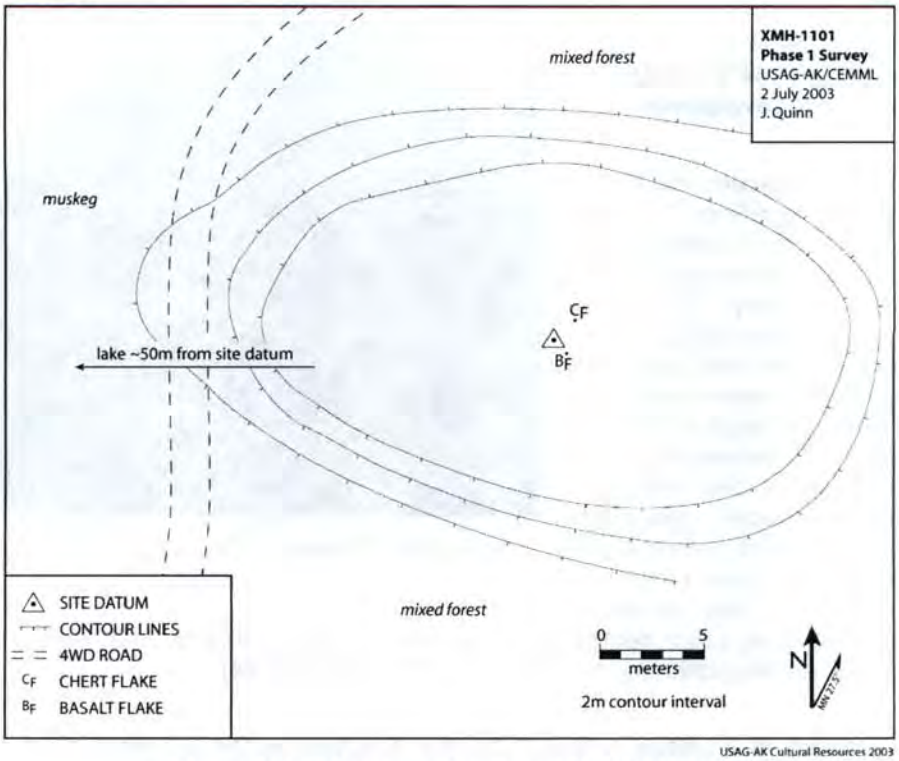

Figure 158: Site map of testing at XMH-1101.

RECOMMENDATIONS

XMH-1101 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the

NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1102
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Site XMH-1102 is located on a high point of a small north/south running knoll (10m x 30m), approximately 200m from an unnamed lake to the south, with a 360° view of the surrounding area. The location has a high surface visibility with the surrounding area composed of mixed forest with low scrub, moss lichen and tussock fields. UTM coordinates for the site are: [redacted]

XMH-1102 consists of a single tertiary rhyolite flake found on the surface. A total of seven shovel tests have been excavated, approximately 5m, and were from 20-30cm deep, to glacial till. All shovel tests pits were negative.

RECOMMENDATIONS

XMH-1102 has been classified as an isolated find; however the site could potentially contain more cultural material. Site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project.

XMH-1103
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Figure 159: General view of site, XMH-1103 heading south

Site XMH-1103 is located on a high point of a larger ridge line. The ridge line runs generally east/west for approximately 2 kilometers and is elevated approximately 250 meters above the surrounding terrain at the highest point on the west end. The site is located 500 meters east of the high point were the ridge is elevated approximately 100 meters above the generally flat terrain. Site affords a 180 degree unobstructed view of the surrounding terrain and looks out over Butch Lake, which is over a kilometer away to the south. Due to recent episodes of forest fires, a high degree of surface visibility was observed. UTM coordinates for the site are: [redacted]

XMH-1103 consists of 2 pieces of lithic debitage observed on the ground surface, within a 14 meter area. These pieces include a piece of gray banded chert shatter and a black basalt secondary flake. Subsurface excavations have yet to be conducted.

RECOMMENDATIONS

XMH-1103 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the

NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1104
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Site XMH-1104 is located 500 meters east of the high point on a generally flat area on top of the ridge. At this point the ridge is elevated approximately 100 meters above the generally flat terrain to the south looking down on Butch Lake. Looking southeast provides good views to the Granite Mountains. Due to recent episodes of forest fires, a high degree of surface visibility was observed. UTM coordinates for the site are: [redacted]

Figure 160: General view of site, XMH-1104 heading north

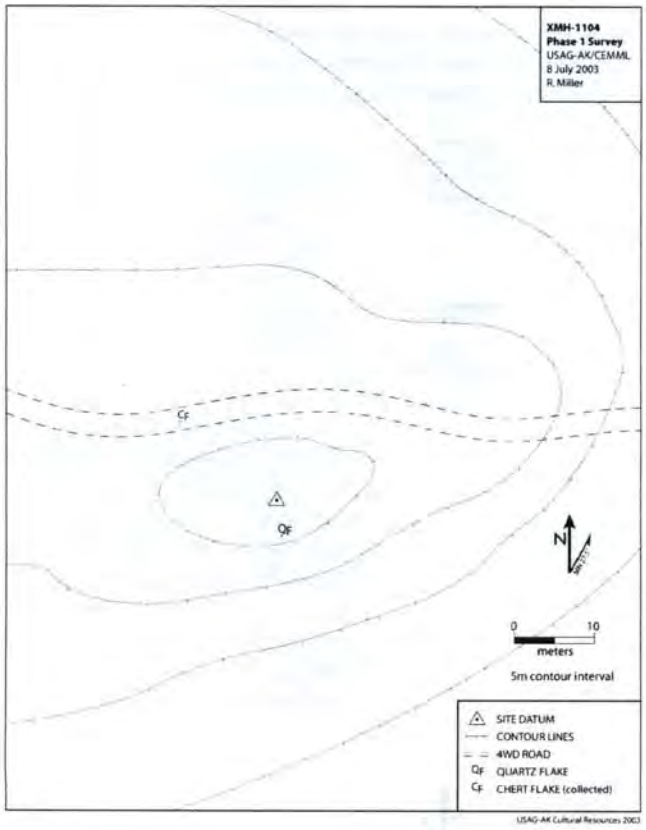

Figure 161: Site map of testing at XMH-1104.

XMH-1104 consists of two flakes found on the ground surface. These include a grayish white chert secondary flake and a quartz secondary flake observed 20 meters apart. The chert flake was observed on a two track and was collected due to the likelihood that it would be impacted by vehicular traffic. Subsurface excavations have yet to be conducted.

RECOMMENDATIONS

XMH-1104 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1105
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Figure 162: General view of site, XMH-1105 heading south

Site XMH-1105 is located at the top of an isolated hill. The hill is elevated 30 meters above the surrounding terrain and is 40 meters in diameter. The hill is adjacent to a long (2 kilometer) ridge located to the west and numerous other isolated hills to the east. Immediately below the hill to the east and west are two small (15 meter diameter) dry lakebeds, no other larger lakes are visible in the immediate area. Site affords a 360 degree unobstructed view of the surrounding terrain. Due to recent episodes of forest fires, a moderate to high degree of surface visibility is available. UTM coordinates for the site are: [redacted]

XMH-1105 consists of one biface fragment and one pinkish chert secondary flake found on the surface. The biface measures 29 mm in length and 29 mm in width and weighs 12 grams. No density plots were calculated and subsurface excavations have yet to be conducted.

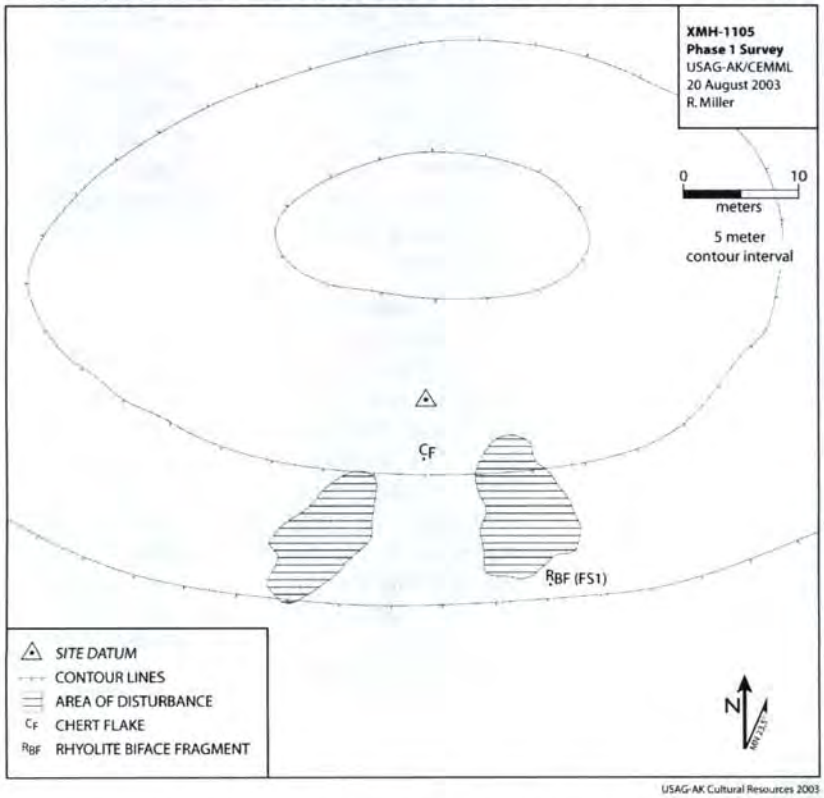

Figure 163: Site map of testing at XMH-1104

RECOMMENDATIONS

XMH-1105 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1106
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Figure 164: General view of site, XMH-1106 heading north

Site XMH-1106 is located on a high point of a larger ridge line. The ridge line runs generally east/west for approximately 2 kilometers and is elevated approximately 250 meters above the surrounding terrain at the highest point on the west end. The site is located 500 meters east of the high point were the ridge is elevated approximately 100 meters above the generally flat terrain. Site affords a 180 degree unobstructed view of the surrounding terrain and looks out over Butch Lake, which is over a kilometer away to the south. Due to recent episodes of forest fires, a high degree of surface visibility was observed. UTM coordinates for the site are: [redacted]

XMH-1106 consists of two flakes found on the ground surface. These include one fine-grained black basalt tertiary flake and one tan chert secondary flake. These artifacts were observed 15 meters apart on the southern slope of the high point. Subsurface excavations have yet to be conducted.

RECOMMENDATIONS

XMH-1106 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1107
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Figure 165: General view of site, XMH-1107 heading south

Site XMH-1107 is located at the top of a large isolated hill. The hill is elevated 100 meters above the generally flat terrain. Site affords a 360 degree unobstructed view of the surrounding terrain, with good views of a large ridge to the west, and Butch Lake, which is approximately 1 kilometer to the south. Due to recent episodes of forest fires, a moderate to high degree of surface visibility is available. UTM coordinates for the site are: [redacted]

XMH-1107 consists of numerous (150+) pieces of lithic debitage and 3 tools (see table below). The quartz flakes (100+) were found on the western slope of the hill within a 5 meter area. The quartz flakes were concentrated into an area in association with a large (50 x 30 cm) quartz boulder that appears to have been utilized for material (some battering marks or flake scars are evident), as well as five other quartz cobbles that appear to have been either tested or used as cores. Two Density Plots DP1 (S12.5/W32) & DP2 (S12.5/ W33) were taken from the quartz procurement/ production area, DP1 yielded 42 quartz flakes and DP 2 yielded 51 quartz flakes. An additional Density Plot (DP3 S23.5/W11.5) was taken from the southern slope where one chert uniface and a chert flake were found in nearby vicinity. A flake type analysis indicates primary and secondary lithic reduction of quartz from a large bolder occurred at the site, as will as later stages of lithic reduction occurred at the site of non-quarts materials. Artifact density is calculated as being up to 31.66 artifacts per-square meter.

Figure 166 : Photo of utilized bolder from XMH-1107

All of the non-quartz flakes (8) and the 3 tools were found on the southern slope of the hill within a 30 meter area (Figure 169). Lithic tools included one chert bifacial projectile point base (FS 1) and two chert unifacial end scrapers (FS 2 and 3). The non-quartz flakes included the following materials; gray quartzite, dark gray basalt, red chert, and gray chert. Subsurface excavations have yet to be conducted. No artifacts were collected.

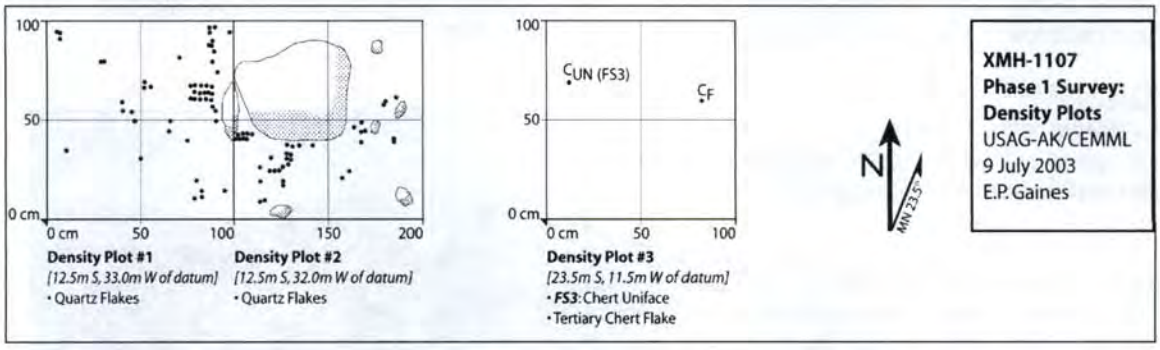

Figure 167: Density plots from XMH-1107, showing utilized bolder

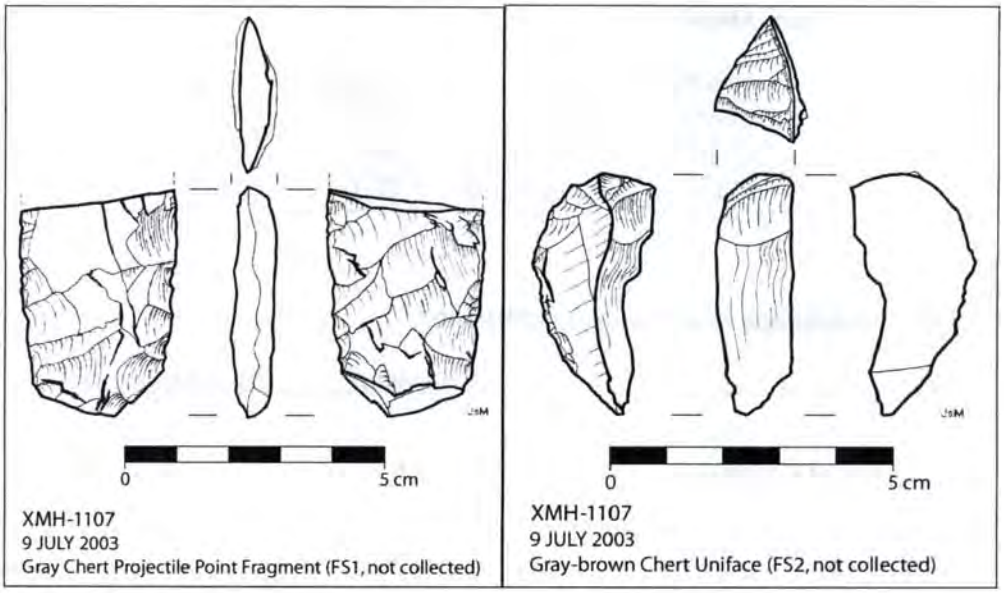

Figure 168: Illustrations of lithic tools from XMH-1107

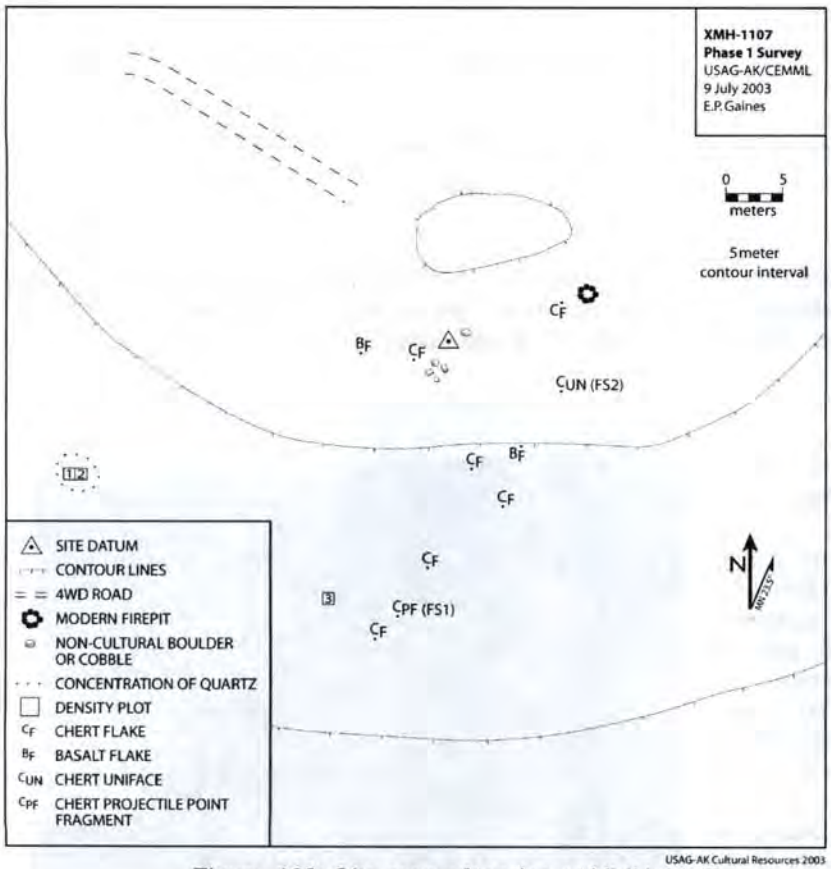

Figure 169: Site map of testing at XMH-1107

Recommendations

XMH-1107 has initially been classified as lithic procurement/ production site where both primary reduction of locally occurring material type (quartz) and late stage lithic reduction or tool use and maintenance of non-locally occurring material types occurred at the site. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

Table 7: Lithic tools from XMH-1107

FS#	Artifact type	Material	Color	Length	Width	Weight
FS1	Proj. pt. base	Chert	gray	43.4	30.5	11.7 gm
FS2	Uniface	Chert	Gray/brown	42.7	21.3	8.1 gm
FS3	Uniface	Chert	Green/gray	22.1	18.4	2 gm

Table 8: Lithic assemblage recorded from XMH-1107.

Artifact Class	Frequency	% of Assemblage
Bifaces		
Projectile point (Fragment)	1	1%
Unifaces		
End scrapers	2	2%
Utilized Bolder	1	1%
Large flake cores	5	5%
Debitage		
Flakes	94	90%
Shatter	**1**	**1%**
Total	104	100%

* The total of 94 flakes came for the 3 sampling units (DP 1-3) and several flakes that lay outside the main concentration of debitage. The total number of flakes at the site has been estimated as being in access of 150 flakes. The total of flakes at the site would be closer to 93%.

XMH-1108
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Site XMH-1108 is located on a high point of a northeastern portion of a approximately 2 kilometers east/west running moraine. The high point is elevated 40 meters above the surrounding terrain and is 20 meters long and 40 meters wide. Site affords a 360 degree unobstructed view of the surrounding terrain, and provides good views of the Granite Mountains to the southeast and Donnelly Dome to the southwest. No lakes are visible in the immediate area, but a possible dry lakebed exists 150 meters to the

Figure 170: General view of site, XMH-1108 heading north

south. Due to recent forest fires, the surface visibility at the site is moderate to high. UTM coordinates for the site are: [redacted]

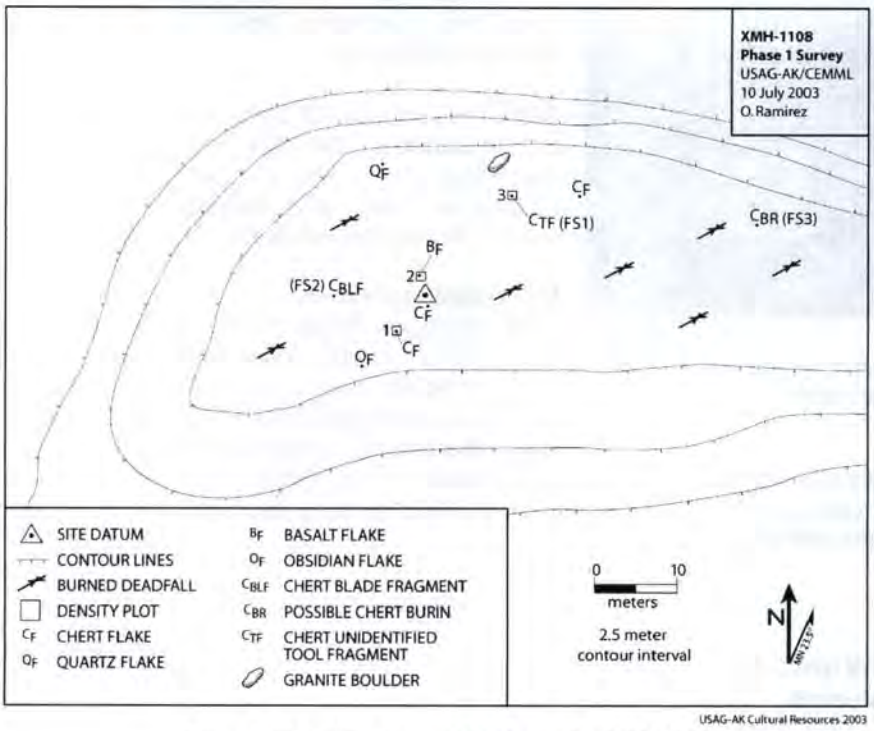

Figure 171: Site map of testing at XMH-1108

XMH-1108 consists of three tool fragments and 6 pieces of lithic debitage found on the ground surface. The tools include; 1 unidentified tool fragment of gray chert that weighs 4.25 grams and measures 23.75 mm long by 25.5 mm wide and is 6.75 mm in thickness. The other 2 tools that could be identified in the field are a medial blade fragment with retouch/ use wear on both sides that weighs .75 grams and measures 12.5 mm long by 15 mm wide and is 4.7 mm in thickness and a brown chert burin that weighs 12 grams and measures 48 mm long by 32 mm wide. The remaining artifacts are all tertiary flakes that consist of 3 gray chert tertiary flakes, 1 grayish black basalt tertiary flake, 1 reddish gray quartzite tertiary flake, and 1 obsidian tertiary flake. Three Density Plots (DP) were calculated at the site that each contained a single artifact. DP1 (S5.5/W4) contained a chert tertiary flake, DP2 (N2/W1) contained a basalt tertiary flake as well, and DP3 (N12/E10) contained the unidentified chert tool fragment. Artifact density is calculated as being up to 1 artifact per-square meter. Subsurface examinations have yet to be conducted.

Recommendations

XMH-1108 has initially been classified as a small lithic scatter where late stage lithic reduction occurred. Site could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1109
Latitude: [redacted]
Longitude; [redacted]
Determination: Not evaluated

Site XMH-1109 is located on a high point that is part of a long (approximately 2 kilometers) generally east/west running ridge The hill is elevated 40 meters above the surrounding terrain and is 65 meters long and 30 meters wide. Site affords a 360 degree unobstructed view of the surrounding terrain, with good views of the Granite Mountains to the southeast and Donnelly

Figure 172: General view of site, XMH-1109 heading north

Dome to the southwest as well as Caribou Lakes 1 kilometer to the northwest. Due to recent forest fires, the surface visibility at the site is moderate. UTM coordinates for the site are: [redacted]

XMH-1109 consists of 3 pieces of flakes found on the surface. The artifacts include 1 chert secondary flake and 2 quartz flakes, one secondary and one tertiary. Subsurface examinations have yet to be conducted.

RECOMMENDATIONS

XMH-1109 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1110
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Site XMH-1110 is located on a northeast-southwest trending bluff overlooking Jarvis Creek to the west. Donnelly Dome is visible to the southwest, the Alaska Range to the west, and the Granite Mountains to the east. The nearest water is Jarvis Creek located approximately 500 meters to the northwest and North Caribou Lake is approximately one kilometer to the south. There is no surface visibility due to vegetation. UTM coordinates for the site are: [redacted]

XMH-1110 consists of a chert flake found in a shovel test unit. A total of four shovel tests were excavated to glacial till. One positive shovel test (STBG) contained one tertiary gray chert flake found at a depth of 35-45cmbs. The shovel test was 50cm deep, with four distinct layers, 0-8cm is the organic layer, 8-23cm is yellow brown loess, 23-45cm is strong brown loess, and 45-50cm is glacial till. The artifact was collected. No density plots were calculated.

Figure173: General view of site, XMH-1110 heading southwest

Recommendations

XMH-1110 has been classified as a buried site and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1111
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Figure 174: General view of site, XMH-1111 heading north

Site XMH-1111 is located on a high point that is part of a long (approximately 2 kilometers) generally east/west running ridge The hill is elevated 40 meters above the surrounding terrain and is 65 meters long and 30 meters wide. Site affords a 360 degree unobstructed view of the surrounding terrain, with good views of the Granite Mountains to the southeast and Donnelly Dome to the southwest. No lakes are visible in the immediate area, but a possible dry lakebed exists 150 meters to the south. The nearest large lakes are North and South Caribou Lakes approximately two kilometer to the west. Due to recent forest fires, the surface visibility at the site is moderate to high. UTM coordinates for the site are: [redacted]

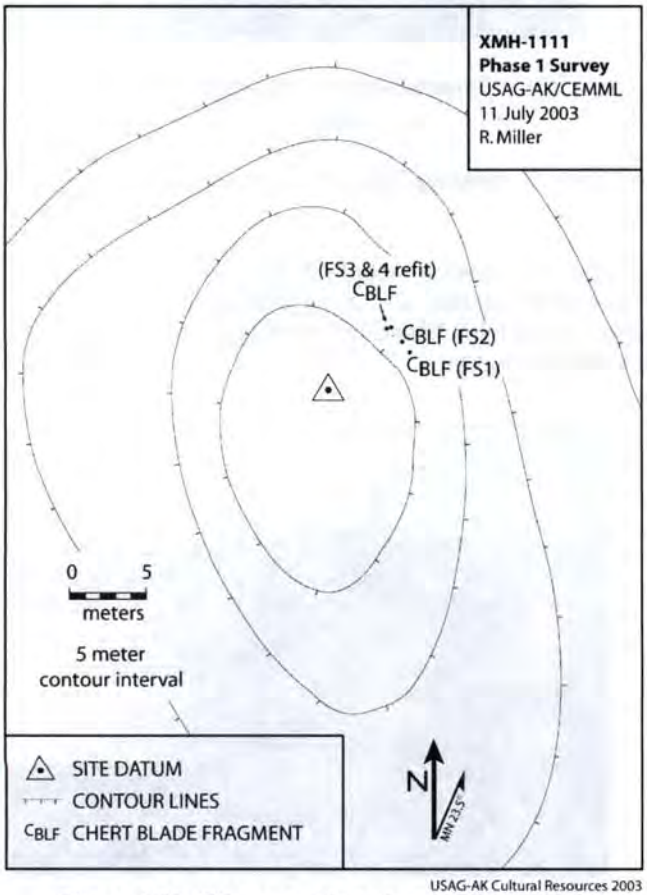

Figure 175: Site map of testing at XMH-1111

XMH-1111 consists of four blade fragments found on the surface, 2 chert blade fragments both of which exhibit retouch/use wear on either side, and 2 basalt blade fragments that refit into a single blade (see table below). No density plots were calculated and subsurface excavations have yet to be conducted.

RECOMMENDATIONS

XMH-1111 has been classified as a blade production site; however the site could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

Table 9: Lithic tools from XMH-1111

FS#	Artifact Type	Material	Color	Length	Width	Weight
FS1	Blade fragment	chert	gray	11 mm	11 mm	.25 gm
FS2	Blade fragment	chert	gray	13 mm	11 mm	.25 gm
FS3	Blade fragment	basalt	black	11 mm	10 mm	.15 gm
FS4	Blade fragment	basalt	black	12 mm	6 mm	.10 gm

XMH-1112
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Figure 176: General view of site, XMH-1112 heading north

Site XMH-1112 is located at the top of a large isolated hill. The hill is elevated 50 meters above the surrounding terrain. Hill is 70 meters north/south by 25 meters east/west and is characterized by two high points separated by a low point of less than 2 meters in elevation. Site affords a 360 degree unobstructed view of the surrounding terrain. Located less than 100 meters to the west there is a lake (mostly dry). Due to recent episodes of forest fires, a moderate to high degree of surface visibility is available. UTM coordinates for the site are: [redacted]

XMH-1112 consists of 2 pieces of lithic debitage. The pieces include a gray chert tertiary flake which was found at the high point on the north end of the site, and a piece of chert shatter which was found at the high point at the southern end of the site. These two artifacts are separated by 50 meters. Subsurface excavations have yet to be conducted.

RECOMMENDATIONS

XMH-267 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

Figure 177: General view of site, XMH-1113 heading east

XMH-1113

Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Figure 178: Site map of testing at XMH-1113

Site XMH-1113 is located at the top of a large isolated hill. The hill is elevated 40 meters above the surrounding area. The hill continues on north for another 100 meters where it rises in elevation approximately 30 meters. Site affords a 320 degree unobstructed view of the surrounding terrain. Site XMH-1114 is located 200 meters to the north. No lakes are visible from the site. Due to recent episodes of forest fires, a high degree of surface visibility is available. UTM coordinates for the site are: [redacted]

Site XMH-1113 consists of one bifacial projectile point fragment and 3 of lithic debitage. A projectile point midsection fragment measuring 21.6 mm in width and 22.4 mm in height weighing 3.5 grams was found on the southeast slope of the hill along with a piece of chert shatter. Additionally 2 quartz flakes were found on the southwest slope of the hill in an area where several (5+) quartz cobbles are eroding from below the surface. Subsurface examinations have yet to be conducted.

RECOMMENDATIONS

XMH-1113 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1114
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Site XMH-1114 is located at the top of a large isolated hill that is elevated 60 meters above surrounding terrain. Site affords approximately a 180 degree unobstructed view of the surrounding terrain to the north. No lakes are visible in the immediate vicinity, but numerous small dry lakes are located within a kilometer, the closest of which is located 500 meters to the west. Due to recent episodes of forest fires, a

Figure 179: General view of site, XMH-1114 heading north

high degree of surface visibility is available at the site. UTM coordinates for the site are: [redacted]

Figure180: Photo of possible hearth feature

Site XMH-1114 consists of numerous (350+) pieces of lithic debitage in various stages of reduction as well as six tools or tool fragments found on the surface of the site. Three separate artifact concentrations were observed on the hilltop, as well as a circular alignment of rocks that may represent a possible hearth feature. The possible hearth feature is located at the south end of the hilltop and is made up of ten or more large (30 to 50 cm) siltstone boulders that are arranged in a circular formation 1.5 meters in diameter. The boulders are buried by naturally deposited soil by approximately 75% and are all cracked by natural freeze thaw processes. No evidence of burning was observed, and thus superficial surface examinations were unable to determine the nature of this feature.

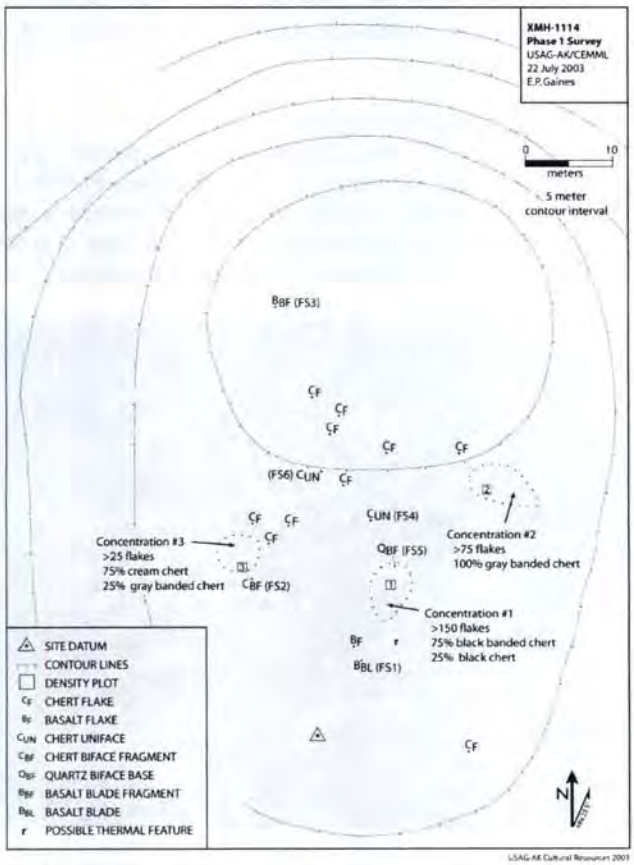

Figure 181: Site map of testing at XMH-1114

The majority of the artifacts encountered at the site (approximately 95%) were located within one of the three artifact concentrations. The site consists of lithic debitage in various stages of reduction, however over 75% of the flakes were tertiary flakes. The remaining 25% were mostly all secondary flakes, only 2 primary flakes were observed at the site.

All three of the artifact concentrations are located at the southern end of the hilltop and are separated by less than 15 meters. Concentration 1 consists of over 150 pieces of flakes and measures 6 meters in diameter and is located 5 meters upslope of the possible hearth feature. Approximately 75% of the materials from concentration 1 consist of a gray-banded chert, while the remaining 25% consists of a black fine-grained basalt with several green chert mixed in. Concentration 2 consists of over 75 flakes, all of which are a gray-banded chert. This concentration measures 5 meters in diameter and is

located on the southeastern slope of the hill. Concentration 3 is consists of over 25 flakes approximately 75% of them are a cream colored chert, while the remaining 25% consist of a gray-banded chert. This concentration measures 4 meters in diameter and is located 10 meters down slope from the top of the hill.

Three Density Plots were calculated at the site. DP1 (17N/8E) was placed on concentration 1 and contained 63 pieces of flaked stone of either gray banded chert or black fine grained basalt and one of green chert. This density plot contained mainly tertiary flakes (a total of 61) with only 2 secondary flakes. DP2 (N28/ E19) was placed on concentration 2 and contained 46 pieces of flaked stone all of which were gray banded chert tertiary flakes. DP3 (N19/ W9) was placed on concentration 3 and contained 15 flakes of either a cream colored chert or a gray banded chert, all of which were tertiary flakes.

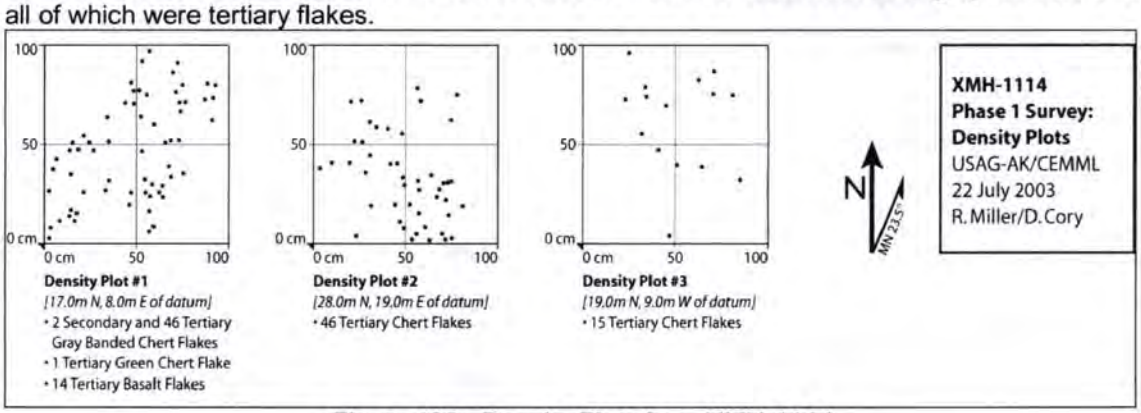

Figure 182: Density Plots from XMH-1114

The remaining 5% of the lithic debitage that were encountered outside of the artifact concentrations consist of over 25 pieces of flaked stone and 6 tools or tool fragments. These artifacts were observed throughout the southern slope of the hilltop. The tools observed at the site consist of blades, two biface fragments and two unifaces, measurements are listed below in Table 8. Artifact density is calculated as being up to 41.33 artifacts per-square meter. Subsurface excavations have yet to be conducted.

Recommendations

XMH-1114 has initially been classified as a large lithic scatter where production and later stages of lithic reduction occurred. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

Table 10. Lithic tools recorded from XMH-1114.

FS#	Artifact type	Material	Color	Length	Width	Weight
FS1	blade	basalt	black	29 mm	10 mm	0.5 gm
FS2	biface fragment	chert	Gray banded	43 mm	19 mm	6 gm
FS3	blade fragment	basalt	black	16 mm	12 mm	0.75 gm
FS4	retouched flake	chert	gray banded	41 mm	12 mm	1.9 gm
FS5	biface fragment	quartz	white	42.5 mm	25 mm	13.5 gm
FS6	uniface	chert	gray banded	75 mm	39 mm	24.5 gm

Table 11. Lithic assemblage recorded from XMH-1114.

Artifact Class	Frequency	% of Assemblage
Bifaces		
Biface fragments	2	1%
Unifaces		
Scrapers	1	1%
Unifacially retouched flake	1	1%
Blade Cores and Blades		
Blade	1	1%
Blade Fragment	1	1%
Debitage		
Flakes*	124	94%
Shatter	**1**	**1%**
Total	131	100%

* The total of 124 flakes came from the 3 sampling units (DP 1-3) and several flakes that lay outside the main concentrations of debitage. The total number of flakes at the site has been estimated as being in access of 350 flakes. The total of flakes at the site would be closer to 99%.

XMH-1115
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Site XMH-1115 is located at the top of a hill. The hill is elevated 30 meters above the generally flat terrain that exists between the numerous other hills that surround the site. Site affords approximately a 180 degree unobstructed view of the surrounding terrain to the north. No lakes are visible in the immediate vicinity, but numerous small dry lakes are located within a kilometer, the closest of which is located 700 meters to the south. Due to recent episodes of forest fires, there is a high degree of surface visibility is available at the site. UTM coordinates for the site are: [redacted]

Figure 183: General view of site, XMH-1115 heading east

XMH-1115 consists of one bifacial projectile point fragment observed on the surface of the hill. The projectile point is a midsection fragment made of a cream colored chert. No other artifacts were observed at the site. Subsurface excavations have yet to be conducted.

RECOMMENDATIONS
XMH-1115 has been classified as an isolated find; however the site could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives

for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1116
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Site XMH-1116 is located at the top of an isolated hill. The hill is elevated 50 meters above the generally low hilly terrain. Site affords a 360 degree unobstructed view of the surrounding terrain, and Butch Lake which is less than one kilometer to the southwest. UTM coordinates for the site are: [redacted]

Figure 184: General view of site, XMH-1116 heading south

XMH-1116 consists three flakes located on the surface. The flakes include one green gray chert secondary flake, one quartz secondary flake, and one quartz primary flake. No other artifacts were observed at the site. Subsurface excavations have yet to be conducted.

RECOMMENDATIONS

XMH-1116 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1117
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Site XMH-1117 is located on a high point of a larger hill. Site is elevated 30 meters above the surrounding terrain and less than 100 meters to the west of XMH-1115. Site affords approximately a 180 degree unobstructed view of the surrounding terrain to the north and east. No lakes are visible from the site, but numerous small lakes are located within a kilometer, the closest of which is 500 meters to the southeast. Due to recent episodes of forest fires, a high degree of surface visibility is available. UTM coordinates for the site are: [redacted]

Figure 185: General view of site, XMH-1117 heading west

Site XMH-1117 consists of two flakes on the ground surface. The flakes include one green gray chert tertiary flake and one gray chert tertiary flake found 15 meters apart on the top of the hill. Subsurface excavations have yet to be conducted.

RECOMMENDATIONS

XMH-1117 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1118

Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Site XMH-1118 is located at the top of an isolated hill elevated 30 meters above the surrounding terrain. Butch Lake is approximately 500 meters south and is visible from the site. Site affords approximately a 180 degree unobstructed view of the surrounding terrain to the South. Due to recent episodes of forest fires, a moderate degree of surface visibility is available at the site. UTM coordinates for the site are: [redacted]

Figure 186: General view of site, XMH-1118 heading south

XMH-1118 consists of flakes on the surface of the hill. The flakes include two chert tertiary flakes. No other artifacts were observed at the site. Subsurface excavations have yet to be conducted.

RECOMMENDATIONS

XMH-1118 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1119

Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Site XMH-1119 is located on the southwestern slope of a north/south trending ridge elevated 40 meters above the surrounding terrain. Butch Lake is approximately 150 west and is visible from the site. Site affords approximately a 180 degree unobstructed view of the surrounding terrain to the south and west. Due to recent episodes of forest fires, a moderate degree of surface visibility is available at the site. UTM coordinates for the site are: [redacted]

Figure187: General view of site, XMH-1119 heading east

Site XMH-1119 consisted of one microblade and eleven flakes located on the surface. The microblade is a gray chert and measures 22 mm high and 9 mm wide and weighs 2 grams. The flakes are all small (all but one flake is less than 20 mm in length) tertiary flakes of numerous materials types. Three Density Plots (DP) were calculated at the site, one within the small artifact concentration consists of 8 flakes within a 50 cm area. DP1 (15S / 0E) contained 2 flakes, DP2 (9S / 1E) contained 1 flake, and DP3 (1N / 2W) contained 8 flakes within the artifact concentration. Subsurface excavations have yet to be conducted.

RECOMMENDATIONS

XMH-1119 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1120

Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Site XMH-1120 is located on a northeast/southwest trending ridge. There are small ponds visible 50 meters to the north and northwest. A small pond is also visible to the southeast, 300 meters from the site. Site affords a 360 degree unobstructed view of the surrounding terrain. The Granites can be seen to the southeast, Donnelly Dome is visible to the southwest, and views of the Alaska Range are to the west. The site has no surface visibility due to vegetation. UTM coordinates for the site are: [redacted]

Figure 188: General view of site, XMH-1120 heading east

Site XMH-1120 consists of one flake found during systematic shovel testing. A total of three shovel tests were excavated 30cm in diameter to glacial till. One positive shovel test (STUNO) contained one tertiary basalt flake at a depth of 10-20cmbs. The shovel test was 45cm deep, with four distinct layers, 0-8cmbs is the organic layer, 8-16cmbs is a strong brown loess, 16-40cmbs is a dark yellow brown loess, and 40-45cmbs is glacial till. The artifact was collected. No density plots were calculated at the site.

Recommendations

XMH-1120 has been classified as a buried site and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1121

Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Site XMH-1121 is located on a small knoll. North Caribou Lake is visible 200 meters away to the northeast and a small pond is in between the site and the lake. Site affords approximately a 180 degree unobstructed view of the surrounding terrain to the south with views of Donnelly Dome, Alaska Range and Granites. The site contains zero percent surface visibility. UTM coordinates for the site are: [redacted]

Figure 189: General view of site, XMH-1121 heading northwest

XMH-1121 consists of one flake found in a shovel test unit. A total of three shovel tests were excavated 30cm in diameter to glacial till. One positive shovel test (STM) contained one tertiary flake of an unidentifiable material at a depth of 10-30cmbs. The shovel test was 60cm deep, with four distinct layers, 0-5cmbs is the organic layer, 5-10cmbs is a dark brown loess, 10-55cmbs is a heavily mottled layer consisting of transitions between dark yellow brown loess and brown loess, 55-60cmbs is glacial till. The artifact was collected and no density plots were calculated.

Recommendations
XMH-1121 has been classified as a buried site and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP

<u>XMH-1122</u>
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Site is located on a northeast/southwest running glacial moraine. Nearest known water appears in the form of a marsh, approximately 400 meters east/southeast of the site. Site affords approximately a 240 degree unobstructed view of the surrounding terrain to the north, west and south. Surface visibility is approximately 60%. UTM coordinates for the site are: [redacted]

Figure 190: Site map of testing at XMH-1122

XMH-1122 consists of microblade, biface fragment and flake on the ground surface. The Microblade fragment is made of gray chert, 1.3cm long, 0.7 cm wide and 0.2 cm thick. The biface fragment is a tan chert projectile point tip, 2.6cm long 1.9cm wide and 0.5cm thick. The flake is a rough basalt tertiary flake. All artifacts were found on the surface. No subsurface testing or density plots were conducted or photographs taken of the site.

RECOMMENDATIONS

XMH-1122 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1123

Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Figure 191: General view of site, XMH-1123 heading south

Site XMH-1123 is located at the top of a hill elevated 15 meters above the surrounding terrain. A small dry lake is located 80 meters away. Site affords approximately a 180 degree unobstructed view of the surrounding terrain to the north and east. Due to recent episodes of forest fires, a high degree of surface visibility is available. UTM coordinates for the site are: [redacted]

Site XMH-1123 consists of two flakes found on the ground surface. The flakes include one pinkish gray chert tertiary flake and a gray brown chert secondary flake. The artifacts were found on top of the hill 2 meters apart. Subsurface excavations have yet to be conducted.

RECOMMENDATIONS

XMH-1123 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1124

Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Figure 192: General view of site, XMH-1124 heading west

Site XMH-1124 is located at the top of a hill elevated 20 meters above the surrounding terrain. A small dry lake is located 100 meters away. Site affords approximately a 180 degree unobstructed view of the surrounding terrain to the north and west towards the lake. Due to recent episodes of forest fires, a high degree of

surface visibility is available. UTM coordinates for the site are: [redacted]

XMH-1124 consists of flakes found on the ground surface. The flakes include one black fine-grained basalt tertiary flake and one black chert tertiary flake. Both artifacts were found on the south slope of the hill within a 10 meter area. Subsurface excavations have yet to be conducted.

RECOMMENDATIONS

XMH-1124 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1125

Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Site XMH-1125 is located at the top of a hill elevated 40 meters above the surrounding terrain. Site affords approximately a 180 degree unobstructed view of the surrounding terrain to the north. No lakes are visible from the site, but numerous small lakes are located within a kilometer distance, the closest of which is located 200 meters to the north. Due to recent episodes of forest fires, a high degree of surface visibility is available. UTM coordinates for the site are: [redacted]

Figure 193: General view of site, XMH-1125 heading north

XMH-1125 consists of three flakes found on the ground surface. The flakes include three black fine-grained basalt tertiary flakes found within a 2 meter area on top of the hill. Subsurface excavations have yet to be conducted.

RECOMMENDATIONS

XMH-1125 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

Figure 194: General view of site, XMH-1126 heading north

XMH-1126

Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Site XMH-1126 is located at the top and on the south slope of a large hill elevated 40 meters above surrounding terrain. Four small

lakes are located approximately 300 meters away to the west and another small lake visible is 400 meters to the east. The hill slopes off steeply in all directions except to the west where a bench extends out nearly 100 meters and is 20 meters lower

in elevation. Site affords approximately a 180 degree unobstructed view of the surrounding terrain to the east. Due to recent episodes of forest fires, a high degree of surface visibility is available at the site. UTM coordinates for the site are: [redacted]

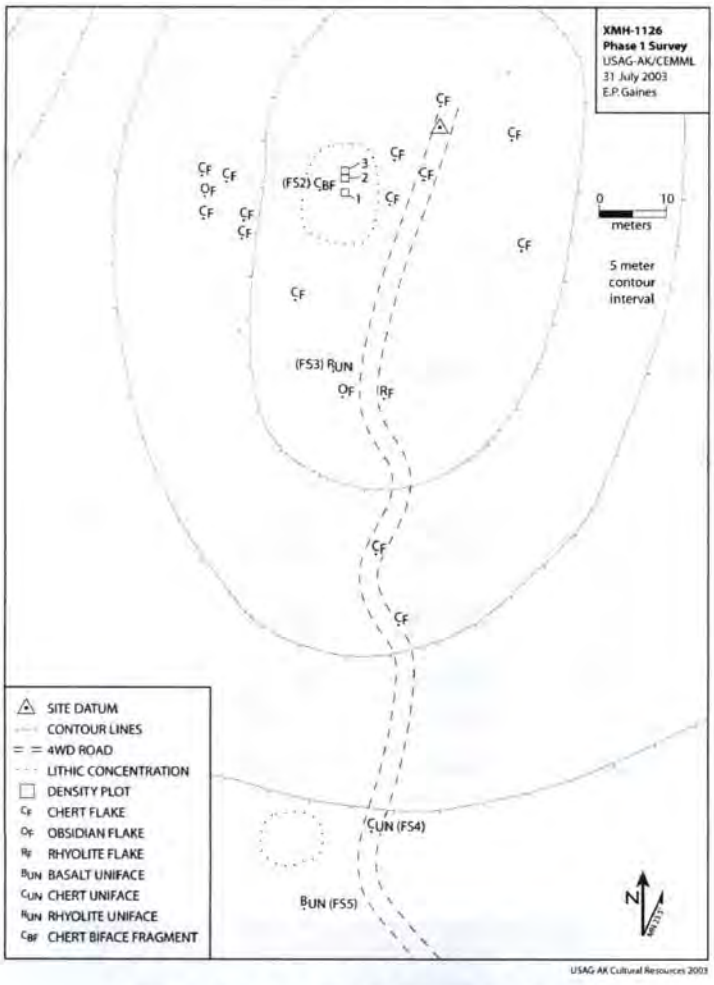

Figure 195: Site map of testing at XMH-1126

Site XMH-1126 consists of one biface fragment, 4 unifaces and numerous (80 +) pieces of lithic debitage on the ground surface. Materials at the site include gray-banded chert, white chert, brown rhyolite, black fine-grained basalt, brown rhyolite, black obsidian, and a gray obsidian. Approximately 85% of the flakes were tertiary; the remaining 15% were secondary flakes except for a single primary flake.

Two separate artifact concentrations were observed on the hill, concentration 1 located near the top of the hill on the southwest slope and concentration 2 farther down slope on the southern side of the hill. Concentration 1 consists of 50 + flakes, as well as a chert projectile point fragment (FS2) and a chert uniface (FS1), within approximately a 12 meter area. The majority (75 to 80%) of the flakes from this concentration are of black fine-grained basalt, while the remaining portion (20 to 25%) is gray-banded chert. Concentration 2 consists of 10 + flakes of various materials within approximately an 8 meter area. Numerous (20+) other flakes were observed scattered through out the top of the hill and continuing down slope to the south until reaching the area where concentration 2 is located.

Three Density Plots (DP) were calculated at the site, all of which were placed within artifact concentration 1. DP1 (10S/15E) contained 3 tertiary pieces of flaked stone and a chert uniface (FS1). DP2 (8S/15E) contained 4 tertiary pieces of flaked stone and 1 piece of secondary flaked stone, and DP3 (7S/15E) contained 5 tertiary pieces of flaked stone and one primary piece of flaked stone. Artifact density is calculated as being up to 5 artifacts per-square meter. Subsurface excavations have yet to be conducted.

Recommendations

XMH-1126 has initially been classified as a large lithic scatter where production and later stages lithic reduction occurred. This site lies inside the boundaries of one of three firing fan alternatives

for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

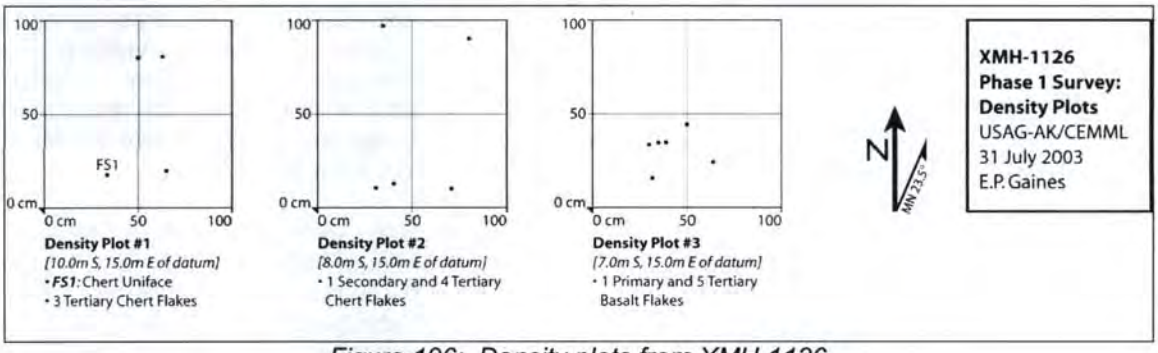

Figure 196: Density plots from XMH-1126

Table 12: Lithic tools from XMH-1126

FS#	Artifact type	Material	Color	Length	Width	Weight
FS1	Uniface	chert	gray banded	29 mm	15 mm	1 gm
FS2	proj.pt. base fragment.	Chert	gray banded	28 mm	26 mm	4 gm
FS3	Uniface	Rhyolite	brown	32 mm	30 mm	10 gm
FS4	Uniface	Chert	gray	36 mm	32 mm	14 gm
FS5	Uniface	basalt	black	39 mm	37 mm	9 gm

XMH-1127
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Site XMH-1127 is located at the top of a hill elevated 25 meters above the surrounding terrain. To the south a small dry lake is located 100 meters away. Site affords approximately a 180 degree unobstructed view of the surrounding terrain to the north. Due to recent episodes of forest fires, a high degree of surface visibility is available. UTM coordinates for the site are: [redacted]

XMH-1127 consists of two flakes found on the ground surface. The flakes include two quartz crystal secondary flakes less than 10 meters apart. Subsurface excavations have yet to be conducted.

Figure 197: General view of site, XMH-1127 heading south

RECOMMENDATIONS

XMH-1127 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1128

Latitude: [redacted]

Longitude: [redacted]

Determination: Not evaluated

Figure 198: General view of site, XMH-1128 heading north

Site XMH-1128 is located at the top of a small rise. The small rise is at the southern end of a north/south trending ridge elevated 15 meters above the surrounding terrain. North of the site the ridge begins to descend to a lower, generally flat area and good views are provided looking in this direction, as well as to the east and west where numerous smaller hills are located. No lakes are visible in the immediate area, but a small lake is located 700 meters to the southeast. Due to recent episodes of forest fires, a high degree of surface visibility was observed on top of the rise. UTM coordinates for the site are: [redacted]

XMH-1128 consists of four flakes on the ground surface. The flakes include one tan chert tertiary flake, one gray chert tertiary flake, one gray-banded chert tertiary flake, and one white chert with a reddish band tertiary flake. All of the artifacts were observed within a 2 meter area. Subsurface excavations have yet to be conducted.

RECOMMENDATIONS

XMH-1128 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1129

Latitude: [redacted]

Longitude: [redacted]

Determination: Not evaluated

Figure 199: General view of site, XMH-1129 heading south

Site XMH-1129 is located at the top of a small rise. The small rise is at the southern end of a north/south trending ridge elevated only 15 meters above the surrounding terrain. North of the site the hill begins to descend to a lower generally flat area and good views are provided in this direction. No lakes are visible from the site, but a small lake is located 500 meters to the southeast. Sites XMH-1134, XMH-

1135 and XMH-1136 are located less than 100 meters away on the adjoining set of hills. Due to recent episodes of forest fires, a high degree of surface visibility was observed on the rise. UTM coordinates for the site are: [redacted]

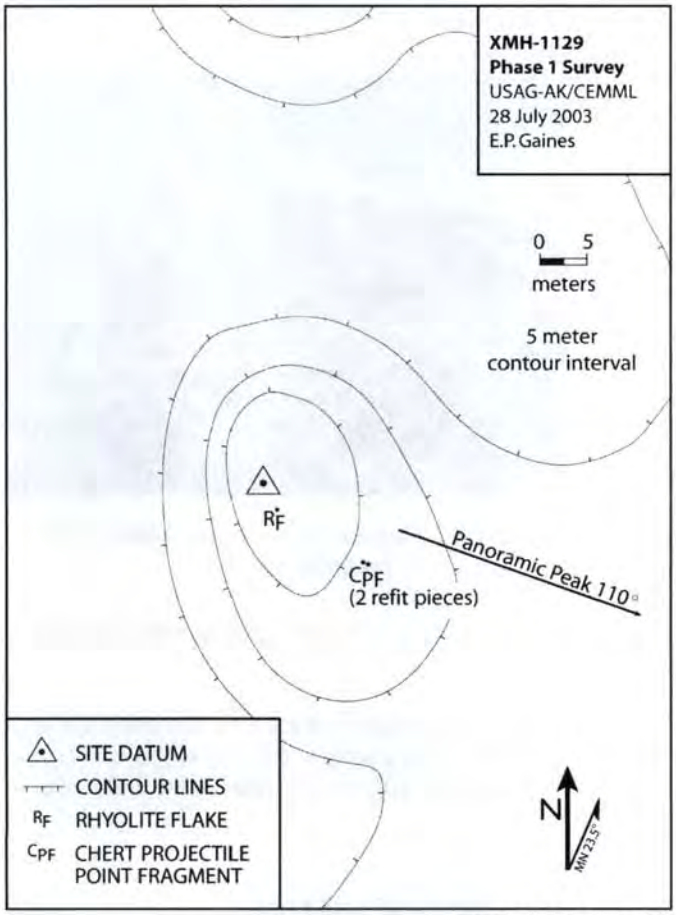

Figure 200: Site map of testing at XMH-1129

Site XMH-1129 consists of three lithic artifacts on the ground surface. The artifacts include one green gray rhyolite secondary flake, and two black chert projectile point fragments that are refits. The projectile point fragments are located only 0.5 meters apart and the other flake is located 15 meters to the northwest. The projectile point fragments measure 14 mm lone, 17 mm wide and weigh 1 gram; and 13mm long, 14 mm wide and weigh 1.75 grams. Subsurface excavations have yet to be conducted.

RECOMMENDATIONS

XMH-1129 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1130

Latitude: [redacted]

Longitude: [redacted]

Determination: Not evaluated

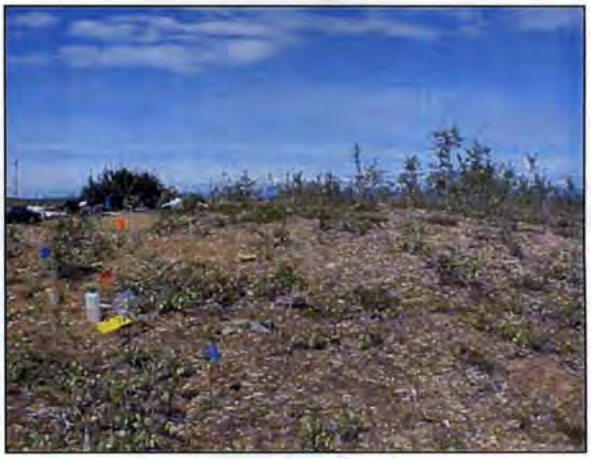

Figure 201: General view of site, XMH-1130 heading north

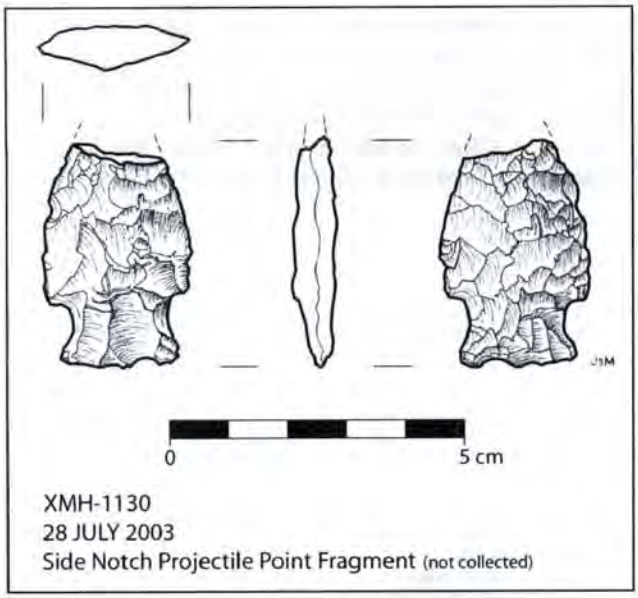

Figure 202: Illustrations of projectile point from XMH-1130

Site XMH-1130 is located on two high points separated by approximately 10 meters on a ridge line. Site is elevated 100 meters above the surrounding terrain, and affords a 360 degree unobstructed view. No lakes are visible in the immediate vicinity, but a small lake is located 200 meters to the southeast. Due to recent episodes of forest fires, a high degree of surface visibility was observed. Also an ATV trail has disturbed the southern slope of the hill exposing a large surface area. UTM coordinates for the site are: [redacted]

Site XMH-1130 consists of 20 tools, including a side-notch projectile point, one expedient flake core and numerous (225+) pieces of lithic debitage on the ground surface. Artifacts were observed throughout the entire surface of both rises on the ridge. One chert flake was observed on a lower rise that was less than 50 meters from artifacts noted on the two higher rises.

The southern concentration consists of 200 + flakes and extends for over 50 meters north/south and 20 meters east/west. All but two of the observed tools were in this concentration. A ground stone fragment of quartzite appears to have a highly polished surface. However, field analysis was unable to determine this positively. The northern concentration consists of 25 + pieces of flaked stone measuring 10 meters in diameter, as well as two chert unifaces. Materials noted at the site include green gray chert, black chert, gray banded chert, white chert, gray chert, orange brown chert, gray green rhyolite, gray/brown rhyolite, black fine grained basalt, medium grained gray/brown quartzite, red fine-grained quartzite, and obsidian.

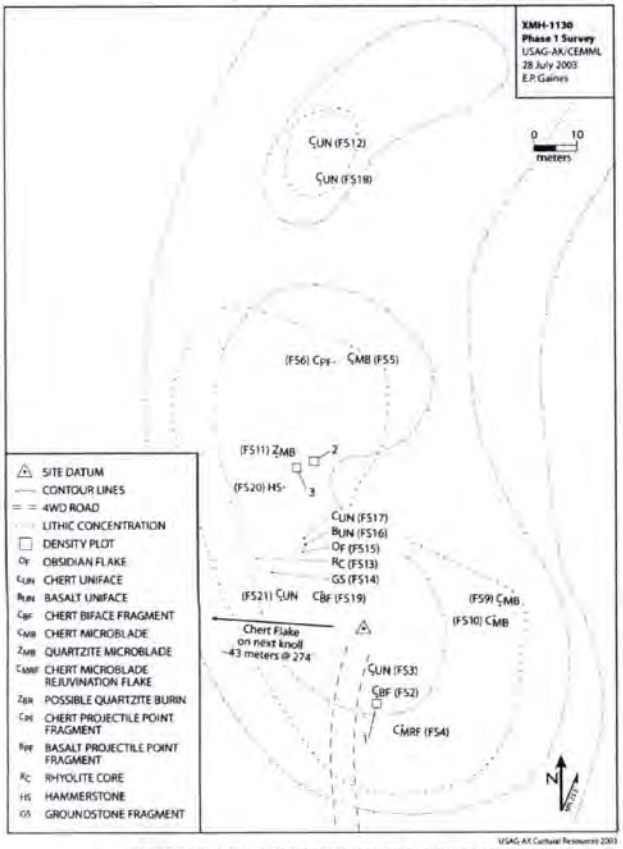

Figure 203: Site map of testing at XMH-1130

Three Density Plots (DP) were calculated at the site, all within the southern artifact concentration. DP1 (9S/1E) contained 6 pieces of flaked stone, a projectile point fragment (FS1), and a biface fragment (FS2). DP2 (19N/6W) contained 5 pieces of flaked stone, a burin (FS7), and a microblade fragment (FS8). DP3 (18N/8W) contained 4 pieces of flaked stone (all tertiary flakes).

Twenty-one tools and other diagnostic artifacts observed at the site, they are listed in Table 12. No subsurface excavations have yet been conducted or any artifacts collected.

Recommendations

XMH-1130 has initially been classified as a large lithic scatter where microblade production and later stages of lithic reduction occurred. The site may contain a Northern Archaic tradition component on the basis of the projectile point typology this site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

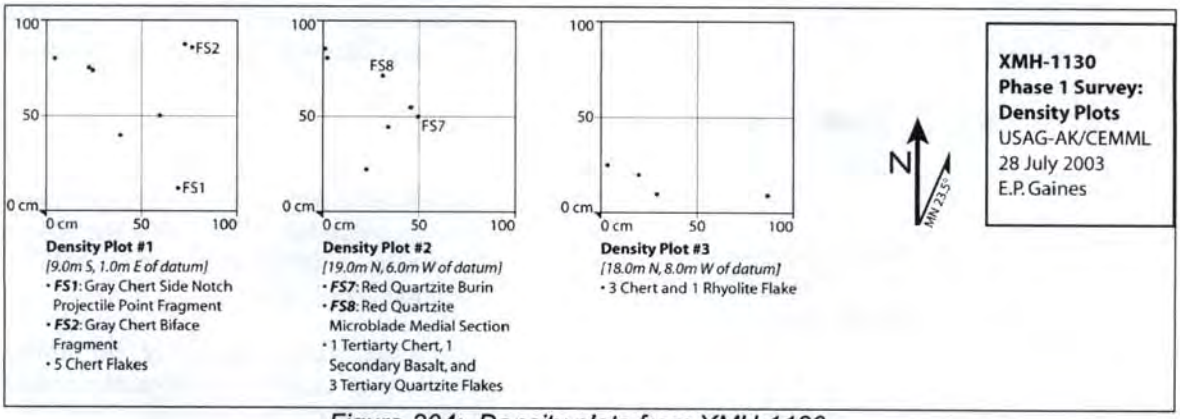

Figure 204: Density plots from XMH-1130

Table 13. Lithic assemblage recorded from XMH-1130.

Artifact Class	Frequency	% of Assemblage
Bifaces		
Projectile point (Side notch)	1	3%
Projectile point (Fragment)	1	3%
Biface	1	3%
Biface fragments	1	3%
Unifaces		
Unifaces	6	16%
Unifacially retouched flake	1	3%
Microblade Cores and Microblades		
Microblade core rejuvenation flakes	1	3%
Microblades	4	11%
Burin?	**1**	**3%**
Large flake cores	**1**	**3%**
Hammer stone	**1**	**3%**
Debitage		
Flakes*	16	43%
Shatter	**1**	**3%**
Total	3	100%

* The total of 16 flakes came for the 3 sampling units (DP 1-3) and one flake that lay outside the main concentrations of debitage. The total number of flake at the site has been estimated as being in access of 225 flakes. The total of flakes at the site would be closer to 93%, the microblades and unifaces would be 3% and all others 1%.

Table 14. Lithic tools recorded from XMH-1130.

FS#	Artifact type	Material	Color	Length	Width	Weight
FS1	proj. pt. side notched	chert	Gray	38.5 mm	20.25 mm	7.75 gm
FS2	biface frag	chert	Gray	24 mm	9 mm	0.25 gm
FS3	Uniface	chert	Gray	29 mm	22 mm	5 gm
FS4	microblade rejuvenation flake	chert	Gray banded	24 mm	13 mm	1.75gm
FS5	microblade frag	chert	Gray	16 mm	6 mm	0.25 gm
FS6	proj. pt. midsection	basalt	Gray	22 mm	28 mm	5.25 gm
FS7	Burin	quartzite	Red	21 mm	7 mm	1.75 gm
FS8	microblade frag.	quartzite	red	10 mm	8 mm	0.25 gm
FS9	microblade frag.	chert	black	14 mm	4 mm	0. 25 gm
FS10	microblade frag	chert	Gray	15 mm	7 mm	0.5 gm
FS11	microblade	quartzite	red	41 mm	9 mm	1.5 gm
FS12	Uniface	chert	black	22 mm	19 mm	3.25 gm
FS13	core	rhyolite	Gray/brown	112 mm	118 mm	< 100 gm
FS14	ground stone frag.	quartzite	Gray/brown	142 mm	128 mm	< 100 gm
FS15	Retouched flake	obsidian	black	22 mm	12 mm	1.25 gm
FS16	Uniface	basalt	black	35 mm	21 mm	8.5 gm
FS17	Uniface	chert	Gray	22 mm	19 mm	3 gm
FS18	Uniface	chert	white	22 mm	27 mm	3.5 gm
FS19	Biface	chert	black	33 mm	11 mm	1.75 gm
FS20	Hammer stone	basalt	black	118 mm	42 mm	< 100 gm
FS21	Uniface	chert	gray	38 mm	29 mm	8.25 gm

XMH-1131
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Site XMH-1131 is located at a high point on a glacial moraine. The high point is 20 meters in diameter and is elevated 40 meters above the surrounding terrain. Site affords approximately a 180 degree unobstructed view of the surrounding terrain to the north and east. No lakes are visible from the site, but numerous small lakes are located within a

Figure 205: General view of site, XMH-1131 heading east

kilometer, the closest of which is 600 meters to the northeast. Site XMH-1132 is located less than 100 meters to the east on an adjoining set of moraines. Due to forest fires, a high degree of surface visibility was observed on the moraine. UTM coordinates for the site are: [redacted]

Site XMH-1131 consists of three pieces of lithic debitage found on the surface of the moraine. The pieces include one brown chert secondary flake and two black fine-grained basalt tertiary flakes. The artifacts were found within a 15 meters area on the top of the moraine. Subsurface excavations have yet to be conducted.

RECOMMENDATIONS

XMH-1131 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1132

Latitude: [redacted]

Longitude: [redacted]

Determination: Not evaluated

Figure 206: General view of site, XMH-1132 heading west

Site XMH-1132 is located at a high point on a glacial moraine. The high point is 20 meters in diameter and is elevated 50 meters above the surrounding terrain. Site affords approximately a 180 degree unobstructed view of the surrounding terrain to the north and east. No lakes are visible from the site, but numerous small lakes are located within a kilometer, the closest of which is 600 meters to the northeast. Site XMH-1131 is located less than 100 meters to the west on an adjoining set of moraines. Due to recent episodes of forest fires, a high degree of surface visibility was observed on the moraine. UTM coordinates for the site are: [redacted]

Site XMH-1132 consists of four pieces of lithic debitage found on the surface of the moraine. The pieces include one large gray chert secondary flake, one large piece of gray-banded chert shatter, and two black fine-grained basalt tertiary flakes. The artifacts were found within a 20 meters area on the top of the moraine. Subsurface excavations have yet to be conducted.

RECOMMENDATIONS

XMH-1132 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1133
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Site XMH-1133 is located on a high point of a glacial moraine. The high point is 30 meters in diameter and is elevated 50 meters above the surrounding terrain. Site affords approximately a 180 degree unobstructed view of the surrounding terrain to the north and east. No lakes are visible from the site, but numerous small lakes are located within a kilometer, the closest of which is 500 meters to the northeast. Due to recent episodes of forest fires, a high degree of surface visibility was observed on the moraine. UTM coordinates for the site are: [redacted]

Figure 207: General view of site, XMH-1133 heading east

Site XMH-1133 consists of two lithic tools and one piece of lithic debitage found on the ground surface. The tools include a gray chert uniface (FS1) that measures 39 mm in length and 26 mm in width and weighs 7 grams. The other tool identified at the site is a light gray chert biface (FS2) that measures 65 mm in length and 34 mm in width and weighs 29 grams. The other piece of lithic debitage identified includes a gray chert tertiary flake. The artifacts were found within a 10 meters area on the top of the moraine. Subsurface excavations have yet to be conducted.

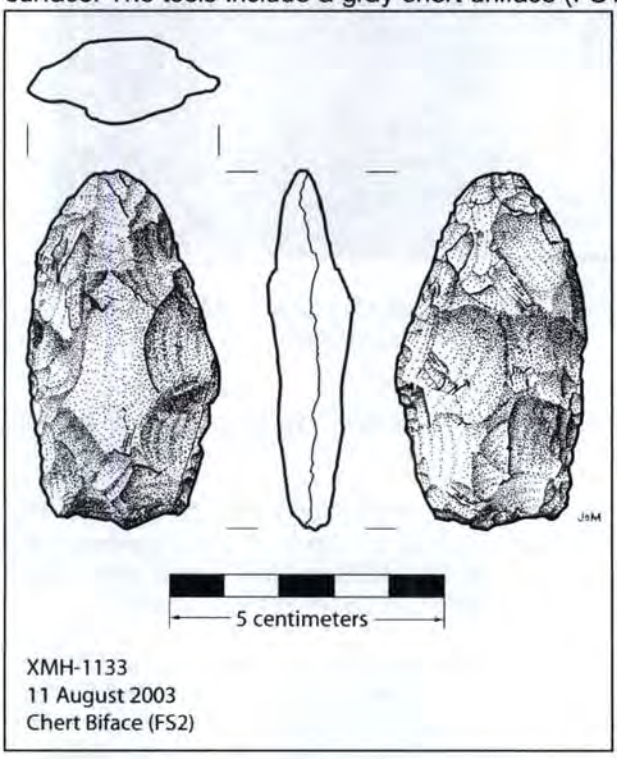

Figure 208: Illustrations of Biface from XMH-1133

RECOMMENDATIONS

XMH-1133 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

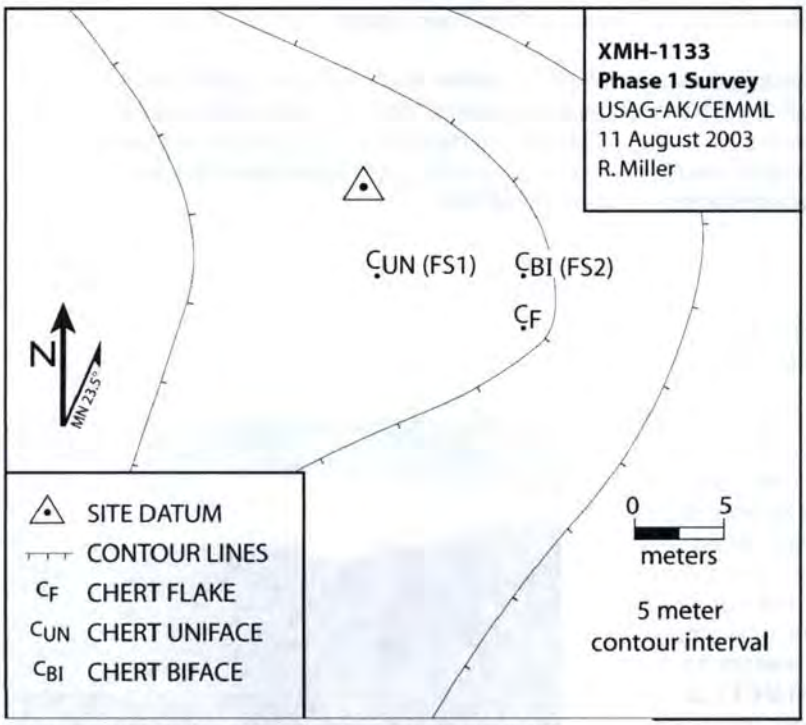

Figure 209: Site map of testing at XMH-1133

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XMH-1134
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Site XMH-1134 is located at a high point on a glacial moraine. The high point is 25 meters in diameter and is elevated 30 meters above the surrounding terrain. Views are limited to the lower areas west and southwest in the immediate vicinity. No lakes are visible from the site, but numerous small lakes are located within a kilometer, the closest of which is 200 meters to the southeast. Sites XMH-1129, XMH-1135 and XMH-1136 are located less than 100 meters away on the adjoining set of moraines. Due to recent episodes of forest fires, a high degree of surface visibility was observed on the moraine. UTM coordinates for the site are: [redacted]

Figure 210: General view of site, XMH-1134 heading south

Site XMH-1134 consists of three pieces of lithic debitage identified on the ground surface. These include one piece of quartz shatter and one gray chert secondary flake that were found within a 6 meter area on the south slope of the moraine. The other artifact found

at the site includes one quartz secondary flake that is located 35 meters to the northeast on the far northeast side of the moraine. Subsurface excavations have yet to be conducted.

RECOMMENDATIONS

XMH-1134 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1135

Latitude: [redacted]

Longitude: [redacted]

Determination: Not evaluated

Site XMH-1135 is located at a high point on a glacial moraine. The high point is 25 meters in diameter and is elevated 30 meters above the surrounding terrain. Views are limited to the lower areas west and southwest in the immediate vicinity. No lakes are visible from the site, but numerous small lakes are located within a kilometer, the closest of which is 300 meters to the southeast. Sites XMH-1129, XMH-1134 and XMH-1136 are located less than 100 meters away on the adjoining set of moraines. Due to recent episodes of forest fires, a high degree of surface visibility was observed on the moraine. UTM coordinates for the site are: [redacted]

Figure 211: General view of site, XMH-1135 heading south

Site XMH-1135 consists of four pieces of lithic debitage on the ground surface. The lithic debitage pieces include one quartz secondary flake, one quartz crystal secondary flake and two gray siltstone pieces of a single tested cobble. Subsurface excavations have yet to be conducted.

RECOMMENDATIONS

XMH-1135 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1136
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Site XMH-1136 is located at a high point on a glacial moraine. The high point is 40 meters in diameter and is elevated 75 meters above the surrounding terrain. Site affords approximately a 180 degree unobstructed view of the surrounding terrain to the north. No lakes are visible from the site, but numerous small lakes are located within a kilometer, the closest of which is 300 meters to the southeast. Sites XMH-1129, XMH-1134 and XMH-1135 are located less than 100 meters away on the adjoining set of moraines. Due to recent episodes of forest fires, a high degree of surface visibility was observed on the moraine top. UTM coordinates for the site are: [redacted]

Figure 212: General view of site, XMH-1136 heading southwest

Site XMh-1136 consists of three pieces of lithic debitage on the ground surface. The pieces include two quartz secondary flakes and one quartz tertiary flake. The artifacts were all found within a 20 centimeter area adjacent to a large quartz boulder on the southwest side of the moraine. Subsurface excavations have yet to be conducted.

RECOMMENDATIONS

XMH-1163 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1137
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Site XMH-1137 is located at a high point on a glacial moraine. The high point is 15 meters in diameter and is elevated 15 meters above the surrounding terrain. Site affords approximately a 180 degree unobstructed view of the surrounding terrain to the east. No lakes are visible from the site, but numerous small lakes are located within a kilometer, the closest of which is 200 meters to north. Due to recent episodes of forest fires, a high degree of surface visibility was observed on the moraine top. UTM coordinates for the site are: [redacted]

Figure 213: General view of site, XMH-1137 heading northeast

Site XMH-1137 consists of one obsidian uniface fragment identified on the ground surface. The fragment measures 23 mm in length and 14 mm in width and weighs 1.75 grams. No other artifacts were identified at the site and subsurface excavations have yet to be conducted.

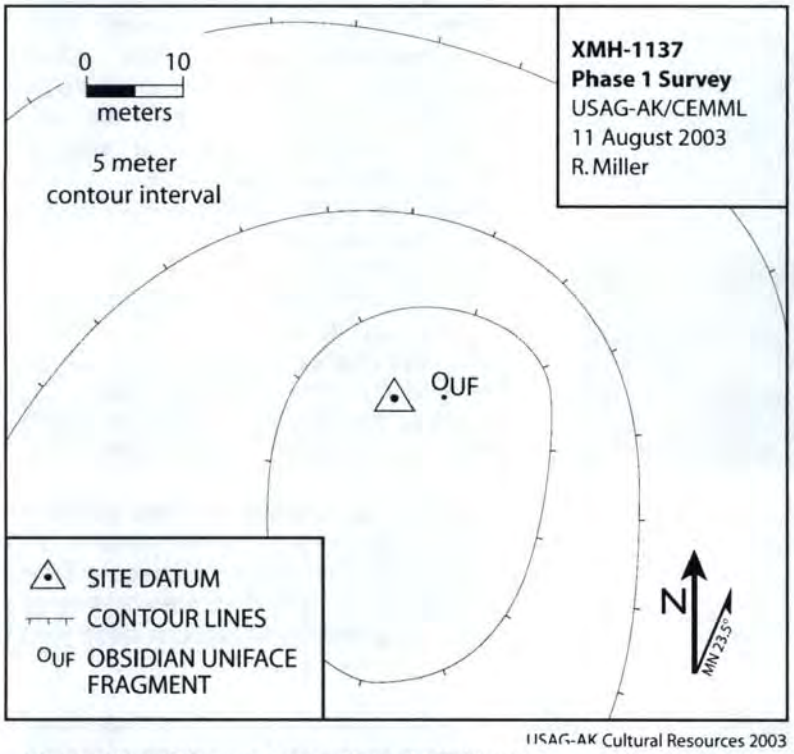

Figure 214: Site map of testing at XMH-1137

Recommendations

XMH-1052 has been classified as an isolated find; however the site could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1138

Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Site XMH-1138 is located at a high point on a glacial moraine. The high point is 30 meters in diameter and is elevated 40 meters above the surrounding terrain. Site affords approximately a 180 degree unobstructed view of the surrounding terrain to the east towards Granite Creek. No lakes are visible, but several small dry lakes are located within a kilometer, the closest of which is 500 meters to the south. UTM coordinates for the site are: [redacted]

Figure 215: General view of site, XMH-1138 heading south

Site XMH-1138 consists of one black fine-grained basalt projectile point midsection fragment and one black fine-grained basalt tertiary flake identified on the ground surface. The projectile point fragment measures 23.5 mm in length and 18 mm in width and weighs 2.5 grams. No other artifacts were identified at the site and subsurface excavations have yet to be conducted.

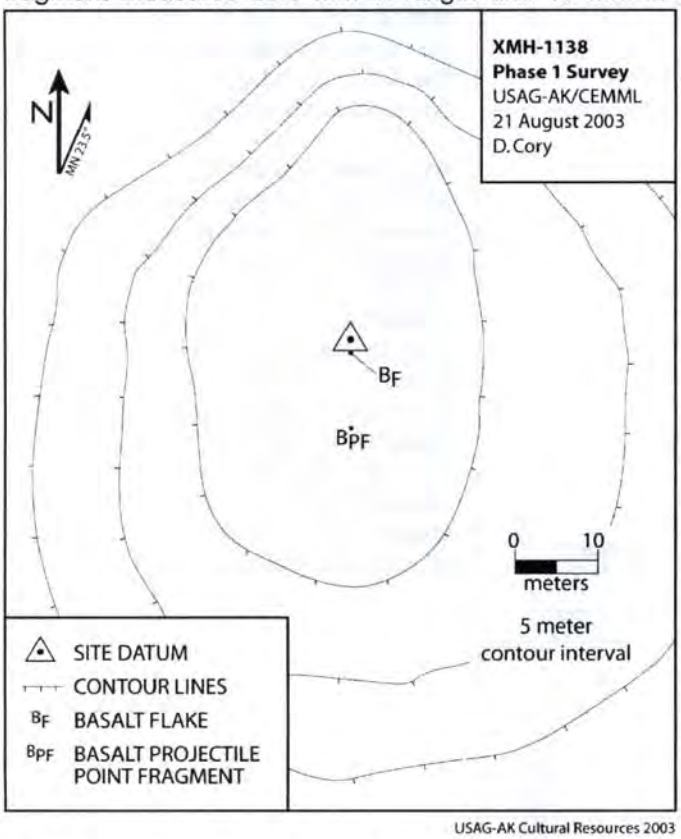

Figure 216: Site map of testing at XMH-1138

RECOMMENDATIONS

XMH-1138 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1139
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Site XMH-1139 is located on the side of a glacial moraine. No lakes are visible from this location. The closest water source is Granite Creek to the southeast, approximately 500 meters. Surface visibility is approximately 30%. Recent fires contribute to some visibility. The artifact was located on a sloping bench of approximately 8% slope. UTM coordinates for the site are: [redacted]

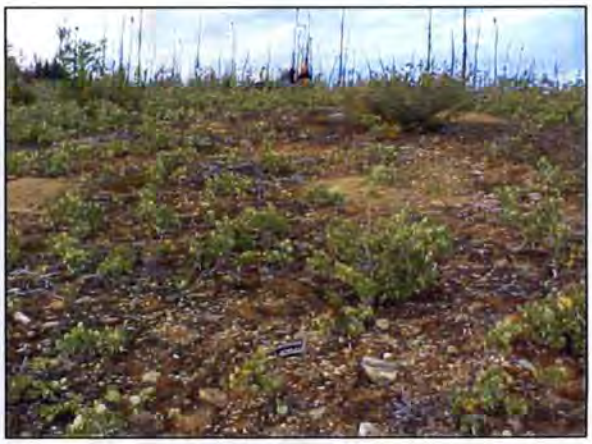

Figure 217: General view of site, XMH-1139 heading west

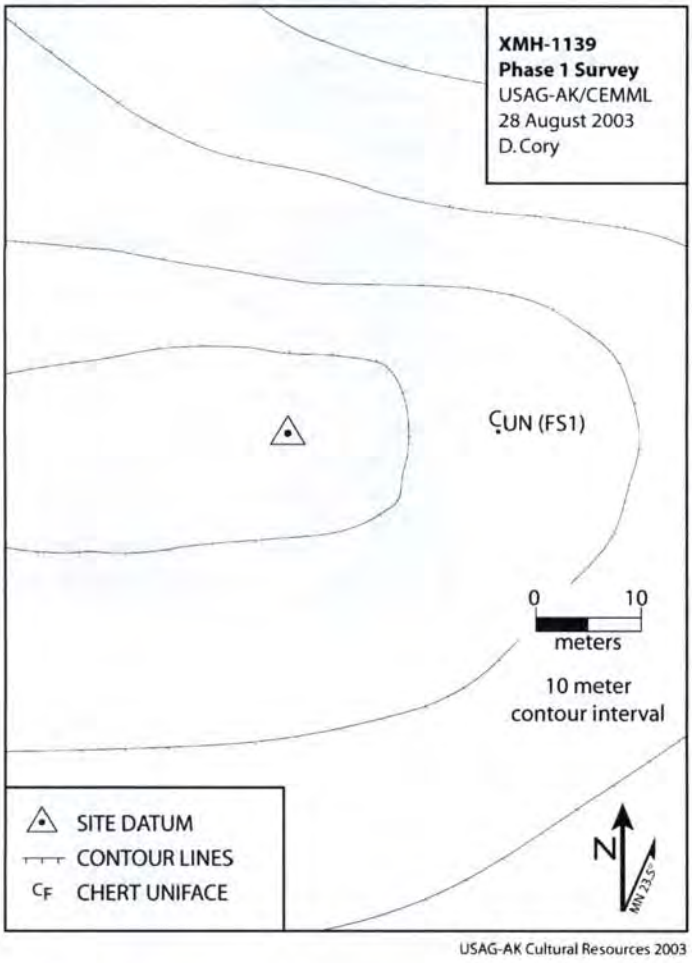

Figure 218: Site map of testing at XMH-1139

XMH-1139 consists of one large gray banded chert uniface. No shovel testing or excavation was conducted. No other artifacts were identified at the site and subsurface excavations have yet to be conducted.

RECOMMENDATIONS

XMH-1052 has been classified as an isolated find; however the site could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1140

Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Site XMH-1140 is located on a prominent east/west trending ridge. The nearest water source is a very small pond located approximately 400 meters to the southeast. Site affords a 360 degree unobstructed view of the surrounding terrain. Two other small ponds are visible 750 meters to the northeast and North and South Caribou Lakes are visible 1.25 kilometers to the north. The Granite Mountains are visible to the southeast, Donnelly Dome to the southwest, and the Alaska Range to the west. There is no surface visibility at the site. UTM

Figure 219: General view of site, XMH-1140 heading east

coordinates for the site are: [redacted]

XMH-1140 consists of two flakes found during systematic shovel testing. A total of three shovel tests were excavated 30cm in diameter to glacial till. One positive shovel test (STUNO) contained two tertiary chert flakes at a depth of 20-30cmbs and one tertiary basalt flake at a depth of 35-44cmbs. The shovel test was 50cm deep with six distinctive layers, 0-7cm is the organic layer, 7-20cm is a dark yellowish brown loess, 20-27cm is a brown loess, 27-30cm is dark brown loess, 30-44 cm is a dark yellowish brown loess, and 44-50cm is glacial till. The artifacts were collected. No density plots were calculated.

Recommendations
XMH-1140 has been classified as a buried site and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1141
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Site XMH-1141 is located on a northwest/southeast trending ridge. The nearest water source is a very small pond located approximately 200 meters to the northeast. Site affords approximately a 180 degree unobstructed view of the surrounding terrain to the south and west. Butch Lake can be seen one kilometer to the south. The Granite Mountains are visible to the southeast, Donnelly Dome to the southwest, and the Alaska Range to the west. There is approximately 5-10 percent surface visibility contained wholly on the southeast facing slope of the ridge. UTM coordinates for the site are: [redacted]

Figure 220: General view of site, XMH-1141 heading east

Site XMH-1141 consists of two flakes found in a shovel test pit. A total of six shovel tests were excavated 30cm in diameter to glacial till. One positive shovel test (STB) contained two chert tertiary flakes at a depth of 5-10cmbs. The shovel test was 45cm deep with five distinct layers, 0-5cm is the organic layer, 5-15cm is a yellowish brown loess, 15-25cm is dark yellowish brown loess, 25-40cm is a strong brown loess, and 40-45cm is glacial till. The artifacts were collected. No density plots were calculated.

Recommendations
XMH-1141 has been classified as a buried site and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1142
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Figure 221: General view of site, XMH-1142 heading south

Site XMH-1142 is located on a small rise, approximately 5 meters in diameter. Site affords approximately a 180 degree unobstructed view of the surrounding terrain to the south and east and a panoramic view of Granite Mountain to the southeast. To the east of the site is a low, swampy area that contains some small patches of muskeg. The closest water source to the site is a small lake located approximately 1km to the northwest. The ground surface in and around the site is not visible due to vegetation. The majority of the area is covered with sapling birch intermingled with a moderate amount of deadfall. The ground surface was covered with dwarf scrub, moss, and lichen. No obvious subsurface disturbance, either cultural or natural, was noted at the site. UTM coordinates for the site are: [redacted]

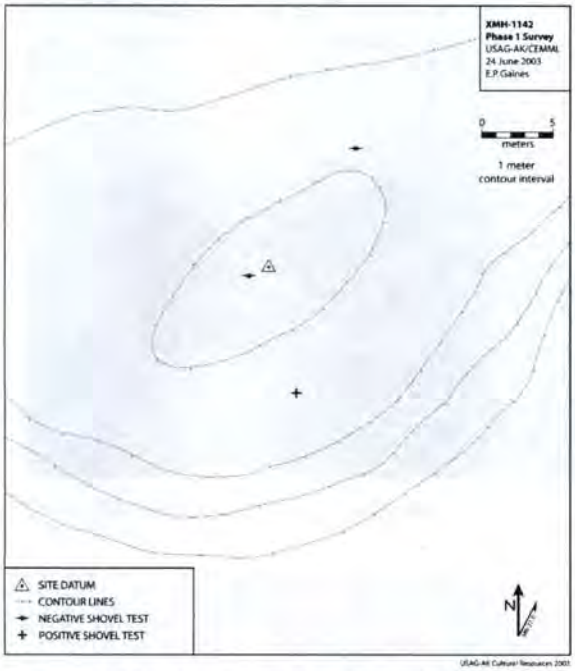

Figure 222: Site map of testing at XMH-1139

XMH-1142 consists of two flakes found in a shovel test pit. A total of three shovel tests were excavated at the site, one of which yielded cultural materials. Shovel test 1 yielded two dark gray chert flakes and is located slightly down slope and to the south of the highest portion of the rise. Shovel tests 2 and 3 yielded no cultural materials. The soil profile encountered in shovel test #1 consisted of approximately 6 cm of dark brown root mat underlain by 6 cm of red silt. The red silt was underlain by 16 cm of brown silt which was in turn underlain by 15 cm of yellow-orange silt with glacial till. The excavation of shovel tests at the site was ceased upon encountering glacial till. The artifacts collected from the shovel probe were collected from approximately 6-12cm below the surface. No density plots were calculated for site.

Recommendations

XMH-1142 has been classified as a buried site and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1143
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

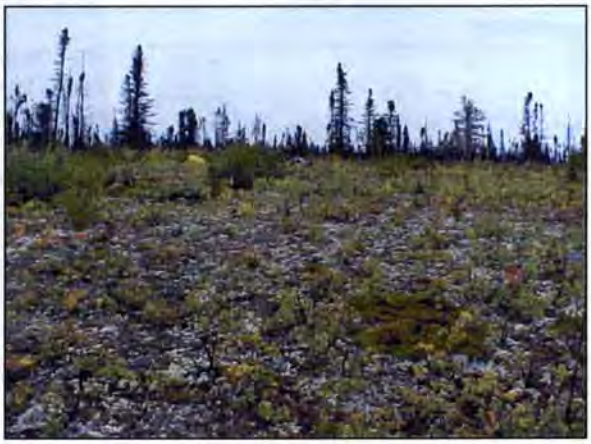

Figure 223: General view of site, XMH-1143 heading south

Site XMH-1143 is located on a high point on the east side of a glacial moraine. The nearest water source is a small pond approximately 50 meters in diameter located approximately 45 meters to the east. The majority of the pond was dry containing only a small amount of water at the time of the survey. Site affords approximately a 180 degree unobstructed view of the surrounding terrain to the south and west. Donnelly Dome and Granite Mountains are visible to the south. Due to recent burns, surface visibility is approximately 50%. UTM coordinates for the site are: [redacted]

XMH-1143 consists of one basalt tertiary flake and one gray chert tertiary flake. These artifacts were located by a visual inspection of the surface. No cultural site disturbance was observed. No excavations or shovel testing were conducted.

RECOMMENDATIONS

XMH-1143 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1144
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Figure 224: General view of site, XMH-1144 heading south

Site XMH-1144 lies on top of the tallest glacial moraine in the area. A dry lake was observed approximately 475 meters to the south. Site affords a 360 degree unobstructed view of the surrounding terrain. Surface visibility is approximately 50% with the other 50% made up of moss and low bush cranberry. A two-track road cuts north/ south through the site with minimal impact to the site. The presence of bullet shell casings indicates some military activity has taken place here in the past. UTM coordinates for the site are: [redacted]

XMH-1144 consists of 6 chert flakes and one rhyolite biface blank. The site was located by a visual inspection of landform surface. Three density plots were placed on the site, each with one artifact contained in them. DP 1 (11.5 S/ 5E) contained two tertiary chert flake. DP 2 (12.5 S/5 E) was empty. DP 3 (2 W/1.5 N) contained one biface blank. Artifact density is calculated as being

up to 1 artifact per-square meter. No artifacts were collected. Subsurface examinations have yet to be conducted.

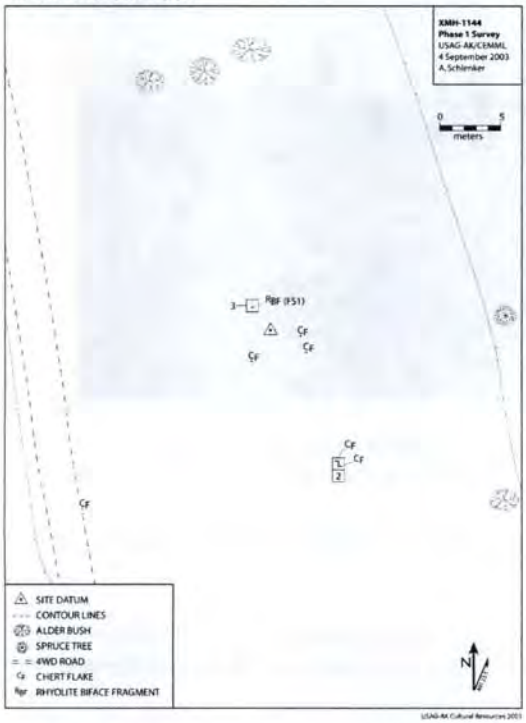

Figure 225: Site map of testing at XMH-1144

RECOMMENDATIONS

XMH-1144 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1145

Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

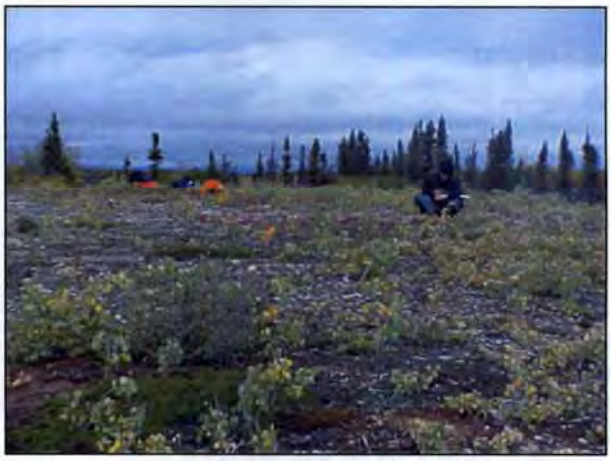

Figure 226: General view of site, XMH-1145 heading north

Site XMH-1145 is located on a high point of a north/south running glacial moraine. A dry lake was observed approximately 200 meters southwest. Site affords a 300 degree unobstructed view of the surrounding terrain to the east, south and west. Donnelly dome and the Granite mountains fall into this 300 degree view. To the north a slightly taller moraine obstructs the view. Recent fires contribute to 60% visibility of ground surface. Site disturbance in the form of a road going from north to south, generally following the spine of the moraine, has contributed to some loss of integrity. Numerous military shell casings are present. UTM coordinates for the site are: [redacted]

XMH-1145 consists of one black basalt tertiary flake and two gray chert tertiary flakes located on the ground surface. No shovel testing or excavations were conducted. Site XMH-1146 is located 89 meters to the south.

RECOMMENDATIONS

XMH-1146 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1146

Latitude: [redacted]

Longitude: [redacted]

Determination: Not evaluated

Figure 227: General view of site, XMH-1146 heading south

Site XMH-1146 is located on a south facing, gradually sloping glacial moraine. Site XMH-1145 is located approximately 89 meters to the north. The closest water source is approximately 400 meters to the southeast. A dry lake is present to the southwest at a distance of approximately 100 meters. Site affords a 250 degree unobstructed view of the surrounding terrain to the east, north and west. The view to the north is obstructed by a slightly taller rise (site XMH-1145) to the north on the same moraine. Site disturbance in the form of a two-track road cutting North to South has contributed to some loss of site integrity. Visibility in the roadway is upward of 80% and off the road approximately 10-20% visibility is available. UTM coordinates for the site are: [redacted]

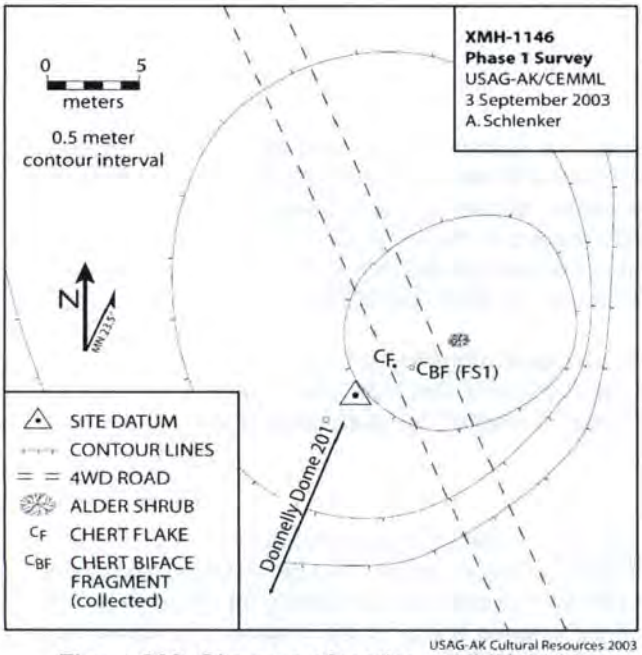

Figure 228: Site map of testing at XMH-1146

XMH-1146 consists of two artifacts observed on the roadway. One bifacial projectile point base (FS1) and one tertiary flake were located. Both artifacts were made of a black chert. The biface was collected. FS1 was located 3 meters at 70° from datum. No shovel testing or excavations were conducted.

RECOMMENDATIONS

XMH-1146 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1147
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Site XMH-1147 is located on top of a small glacial moraine running southeast/northwest. A water source was observed approximately 200 meters to the southwest. Site affords approximately a 180 degree unobstructed view of the surrounding terrain to the east. No unnatural site disturbance was observed. Recent fires have contributed to approximately 40% surface visibility. UTM coordinates for the site are: [redacted] consists of one gray chert tertiary flake located on the surface. No shovel testing or excavations were conducted.

Figure 229: General view of site, XMH-1148 heading north

RECOMMENDATIONS

XMH-1147 has been classified as an isolated find; however the site could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1148
Latitude: [redacted]
Longitude; [redacted]
Determination: Not evaluated

Site XMH-1148 is located at the top of a moraine. The moraine is elevated 30 meters above the surrounding terrain. Numerous small moraines surround the site and thus there are no good views provided from this location. No lakes are visible, but several small lakes are located within a 500 meter distance the closest of which is 200 meters to the east. Due to recent episodes of forest fires, a high degree of surface visibility was observed on the moraine top. UTM coordinates for the site are: [redacted]

Site XMH-1148 consists of four pieces of lithic debitage identified on the ground surface. The pieces include two large gray banded chert secondary flakes that refit, one orange gray siltstone secondary flake, and one orange gray siltstone piece of shatter. Subsurface excavations have yet to be conducted.

RECOMMENDATIONS

XMH-1148 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1149
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Site XMH-1149 is located at the top of a moraine. The moraine is elevated 25 meters above the surrounding terrain. A small lake is located 200 meters away to the northeast. Moraine provides good views to the lake and beyond, but the views in any other direction are obstructed by other moraines. Due to recent episodes of forest fires, a high degree of surface visibility was observed on the moraine. UTM coordinates for the site are: [redacted]

Figure 230: General view of site, XMH-1149 heading north

Site XMH-1149 consists of 29 pieces of lithic debitage encountered on the surface of the south and southeast slope of the moraine. One lithic concentration consisting of 25 flakes within a 1.5 meter area was located 10 meters down slope to the southeast of the top of the moraine. Three other artifacts were observed less than 5 meters down slope from the artifact concentration and one other was observed 20 meters east from the top of the moraine.

Figure 231: Site map of testing at XMH-1149

Materials noted at the site include purple and pink rhyolite, brown rhyolite, gray rhyolite with purple inclusions, and a purple rhyolite with gray inclusions (most likely the same material as the gray rhyolite with purple inclusions). Interesting to note that, excluding the brown rhyolite, these materials are like no other materials encountered in the area and that no other material types are noted for the site.

Tools at the site include two brown rhyolite biface fragments that refit and a purple rhyolite uniface. The biface fragments include the midsection that measures 19 mm in height and 19 mm in width and weighs 1.5 grams and the tip, which measures 19 mm in height and 9 mm in width and weighs 0.75 grams high. The other tool found at the site is a purple rhyolite uniface that measures 32 mm in height and 9 mm in width and weighs 4.25 grams.

Three Density Plots (DP) were calculated at the site. DP1 (11S/12E) was placed within the artifact concentration and contained 21 flakes, the rhyolite uniface and the tip of the rhyolite biface fragment. DP2 (12.5S/12E)

was placed south of the artifact concentration over a single rhyolite flake, and DP3 (3.5S/19E) was placed over a single rhyolite flake on the east slope of the moraine. Subsurface excavations have yet to be conducted.

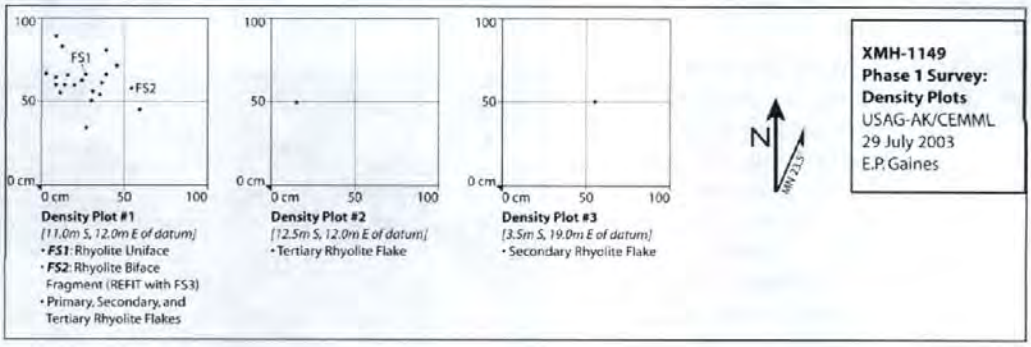

Figure 232: Density plots from XMH-1149

Recommendations

XMH-1149 has initially been classified as a medium lithic scatter where both primary and late stage lithic reduction occurred. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1150

Latitude: [redacted]

Longitude: [redacted]

Determination: Not evaluated

Site XMH-1150 is located at the top of a moraine elevated 40 meters above the surrounding terrain. Site affords approximately a 180 degree

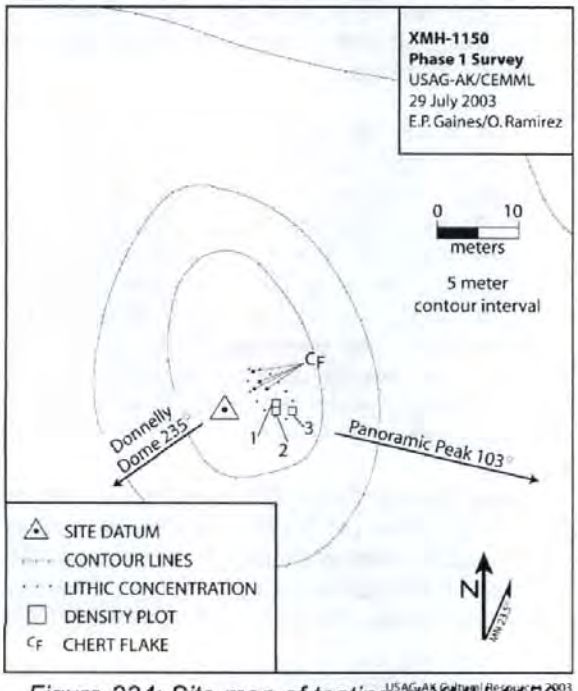

Figure 234: Site map of testing at XMH-1150

Figure 233: General view of site, XMH-1150 heading south

unobstructed view of the surrounding terrain to north and east where a large expanse of flat terrain is located 300 meters away. No lakes are visible from the site, but numerous small lakes are located within 500 meters of the site, the closest of which is 200 meters to the west. Site XMH-1151 is located 100 meters due east of this site. Due to recent episodes of forest fires, a high degree of surface visibility was observed on the moraine top. UTM coordinates for the site are: [redacted]

Site XMH-1150 was first identified by the presence of nine pieces of lithic debitage encountered on the surface of the east slope

of the moraine. All of which were tertiary flakes observed within a 6 meter diameter area that was noted as a low density artifact concentration. Materials include gray chert, light gray chert, and black fine-grained basalt. No tools were identified at the site.

Three Density Plots (DP) were calculated at the site. DP1 (6E/0N) contained 3 tertiary flakes, DP2 (1S/ 6E) contained 1 tertiary flake, and DP3 (1S/8E) contained 1 tertiary flake as well. Subsurface excavations have yet to be conducted.

Recommendations
XMH-1150 has initially been classified as a small lithic scatter where late stage lithic reduction occurred. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1151
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Figure 235: General view of site, XMH-1151 heading south

Site XMH-1151 is located at the top of a moraine elevated 40 meters above the surrounding terrain. Site affords approximately a 180 degree unobstructed view of the surrounding terrain to the north and east where a large expanse of flat terrain is located 300 meters away. No lakes are visible from the site, but numerous small lakes are located within 500 meters of the site, the closest of which is 300 meters to the west. Site XMH-1150 is located 100 meters due west of this site. Due to recent episodes of forest fires, a high degree of surface visibility was observed on the moraine top. UTM coordinates for the site are: [redacted]

Site XMH-1151 consists of three pieces of lithic debitage encountered on the surface of the top of the moraine, all of which were found within a 4 meter area. The artifacts at the site include 2 gray banded chert tertiary flakes and one light gray chert secondary flake. Subsurface excavations have yet to be conducted.

RECOMMENDATIONS
XMH-1151 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

Figure 236: General view of site, XMH-1152 heading north

XMH-1152
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Site XMH-1152 is located on a small knoll overlooking Butch Lake. The nearest water source is Butch Lake, which is located 500 meters to the southeast of the site. Site affords a 360 degree unobstructed view of the surrounding terrain. The Granite Mountains are visible to the southeast, Donnelly Dome to the southwest, and the Alaska Range to the west-southwest. Surface visibility at the site is approximately 20 percent. UTM coordinates for the site are: [redacted]

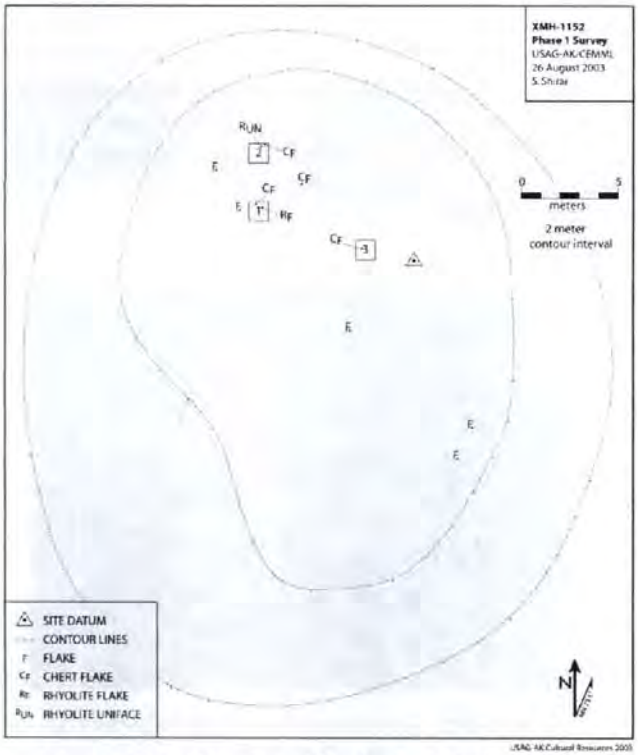

Figure 237: Site map of testing at XMH-1152

Site XMH-1152 consists of five tertiary rhyolite flakes, four tertiary chert flakes, and one rhyolite uniface found on the surface. The uniface is 3.0cm long, 2.5cm wide, and weighs 3gm. None of the artifacts found were collected. Three Density Plots were calculated at the site. DP1 (N2/W9) consists of one tertiary chert flake and one tertiary rhyolite flake. DP2 (N5/W9) consists of one tertiary chert flake and one rhyolite uniface. DP3 (N0/W3) consists of one tertiary chert flake.

Recommendations

XMH-1152 has initially been classified as a small lithic scatter where late stage lithic reduction occurred. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1153

Latitude: [redacted]

Longitude: [redacted] **Determination: Not evaluated**

The site is located on the top of a high point on a bluff 60 meters north/south by 40 meters east/west and is elevated approximately 40 meters above the surrounding terrain. The high point is a rise on a long (over 2 kilometers) northeast/southwest trending bluff that overlooks Jarvis Creek 500 meters to the east. A dry lake is located approximately 100 meters away to the west. Site affords approximately a 260 degree unobstructed view of the surrounding terrain to the east, south and west of the site. Due to recent forest fires, a high degree of surface visibility is available. UTM coordinates for the site are: [redacted]

Figure 238: General view of site, XMH-1153 heading north

Site XMH-1153 consists of 11 pieces of lithic debitage, 2 flake cores and 2 tool fragments

observed on the surface. Artifacts are located on the top of the bluff and on the southern slope extending 30 meters down slope. One artifact concentration was observed on the top of the bluff that consists of 5 flakes, a siltstone core (FS1) and a chert uniface (FS2) within a 10 meter diameter area. The remaining artifacts were randomly scattered on the high point and on the southern slope. The majority of the flakes (9 of 11) at the site were tertiary flakes with only one secondary flake and one piece of shatter. Materials noted at the site include gray chert, gray banded chert, black chert, dark red chert, brownish gray siltstone, and quartz.

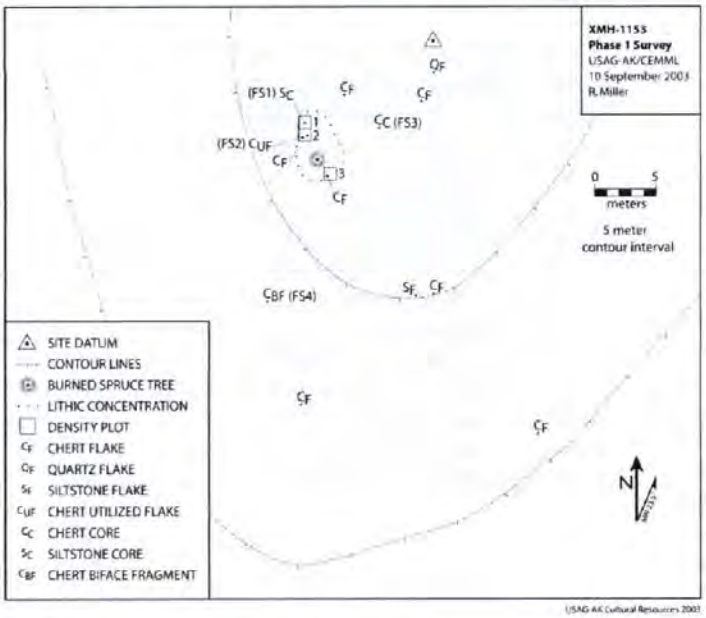

Figure 239: Site map of testing at XMH-1153

Three Density Plots were calculated at the site, all of which were placed on the artifact concentration. DP1 (8S/11E) contained the siltstone core (FS1), DP2 (N28/E19) contained the chert uniface (FS2). DP3 (11S/9E) contained a single chert tertiary flake. Subsurface excavations have yet to be conducted.

Recommendations

XMH-1153 has initially been classified as a small lithic scatter where later stages of lithic reduction occurred. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

Table 15. Lithic tools recorded from XMH-1153.

FS#	Artifact type	Material	Color	Length	Width	Weight
FS1	Core	siltstone	Brownish gray	41 mm	36 mm	40 gm
FS2	Uniface	Chert	Black	23 mm	8 mm	1.25 gm
FS3	Core	Chert	Gray banded	61 mm	29 mm	41.75 gm
FS4	Biface	Chert	Gray	33 mm	22 mm	4.25 gm

XMH-1154
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

The site is located on the top of a small knoll or rise. The moraine is 60 meters north/south by 20 meters east/west and is elevated approximately 10 to 15 meters above the surrounding terrain. It is located 100 meters west of a long (2 kilometers or more) bluff that rises up west of

Figure 240: General view of site, XMH-1154 heading south

Jarvis Creek. The terrain surrounding the site is generally flat in the immediate vicinity to the east, west and south. A dry lake is visible that is less than 100 meters away. Thus good views are provided looking in all directions except south. UTM coordinates for the site are: [redacted]

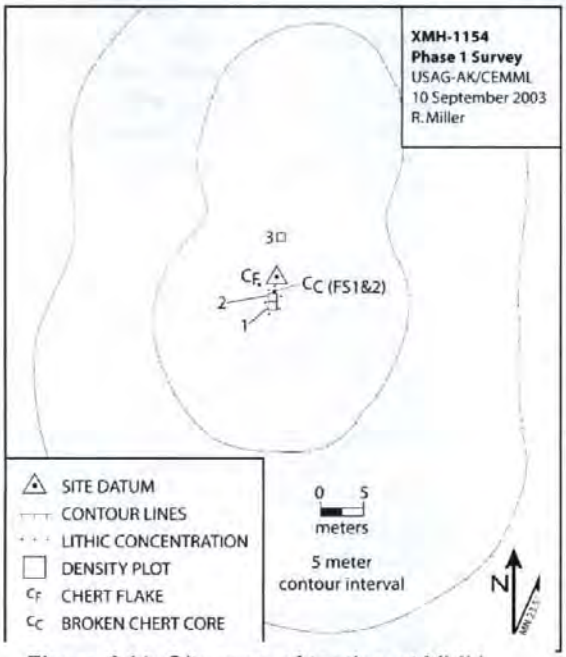

Figure 241: Site map of testing at XMH-1154

Site XMH-1154 consists of 17 pieces of lithic debitage and a flake core all of which are a gray banded chert. Over half of the pieces of flaked stone (10 of 17) were secondary flakes. One artifact concentration is located on top of the knoll. The artifact concentration consists of 14 flakes and a flake core within a 3 meter area. The core is an expedient core that has been broken in two pieces, both of which were found lying adjacent to one another. One piece measures 84 mm in length and 24 mm in width and weighs 47 grams and the other measures 89 mm in length and 11 mm in width and weighs 29.5 grams. Only two flakes were found outside of the artifact concentration located 6 meters to the nc

Three Density Plots (DP) were calculated at the site. DP1 (4S/1W) was placed on the artifact concentration and contained 2 flakes. DP2 (3S /1W) was also placed on the artifact concentration and contained 12 pieces of flaked stone. DP3 (4N/0E) was placed on the two flakes 6 meters north of the concentration. Subsurface excavations have yet to be conducted.

Recommendations

XMH-1154 has initially been classified as a small lithic scatter where early stages of lithic reduction occurred. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

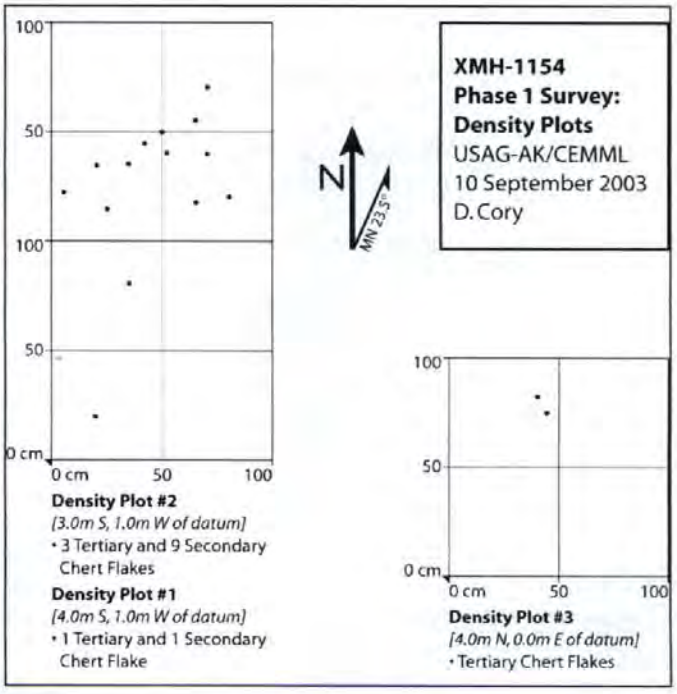

Figure 242: Density plots from XMH-1154

XMH-1155
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

The site is located on the slope of a large northeast/southwest trending bluff (over 2 kilometers) that overlooks Jarvis Creek 500 meters to the east. The surrounding terrain east and south of the site is generally flat towards the creek, thus good views are provided looking in those directions. Due to recent episodes of forest fires, a high degree of surface visibility is available. Also ground surface has been exposed by a road cut that extends through the site. UTM coordinates for the site are: [redacted]

Figure 243: General view of site, XMH-1155 heading north

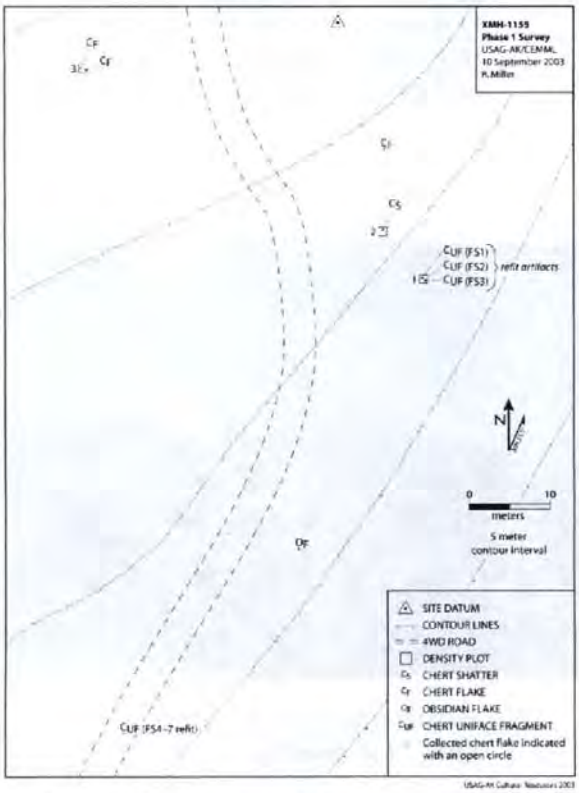

Figure 244: Site map of testing at XMH-1155

Site XMH-1155 consists of five pieces of lithic debitage, and seven uniface fragments that refit into two separate unifaces. Three uniface fragments found adjacent to one another refit into one uniface of green chert. While four other uniface fragments found within a 10 centimeter area come from another single uniface fine grained basalt (two of which refit). Artifacts were observed Five pieces of flaked stone were observed at the site as well that included a gray banded chert secondary flake, 2 gray banded chert tertiary flakes, an obsidian tertiary flake, and a piece of chert gray banded chert shatter.

Three Density Plots (DP) were calculated at the site. DP1 (32S/10E) contained the three green chert uniface fragments, DP2 (26S/6E) contained a piece of chert shatter, and DP3 (6S/32W) contained 2 chert tertiary flakes. Subsurface excavations have yet to be conducted.

Recommendations
XMH-1155 has initially been classified as a small lithic scatter where late stage lithic reduction occurred. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

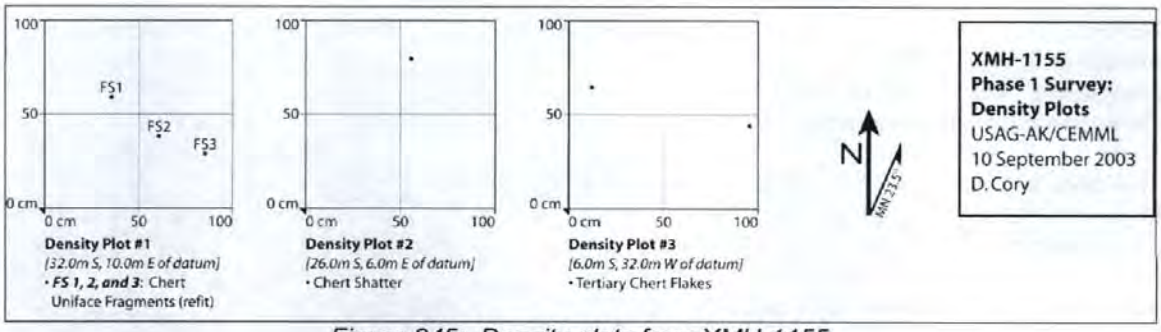

Figure 245: Density plots from XMH-1155

Table 16. Lithic tools recorded from XMH-1155.

FS#	Artifact type	Material	Color	Length	Width	Weight
FS1	Uniface frag.	chert	green	28 mm	22 mm	7 gm
FS2	Uniface frag.	chert	green	20 mm	11 mm	3.25 gm
FS3	Uniface frag.	chert	green	22 mm	20 mm	3 gm
FS4	Uniface frag.	basalt	black	22 mm	12.6 mm	2 gm
FS5	Uniface frag.	basalt	black	11.5 mm	7.7 mm	1 gm
FS6	Uniface frag.	basalt	black	16.7 mm	9.5 mm	1 gm
FS7	Uniface frag.	basalt	black	11.7 mm	7.8 mm	1 gm

XMH-1156
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

The site is located on a rise of a larger ridge or bluff. The rise is part of a long (over 2 kilometer) southwest/ northeast trending ridge that is elevated over 100 meters above the generally flat terrain to the east towards Jarvis Creek which approximately 500 meters away. Thus the best view is provided looking east. No lakes are visible. Due to recent episodes of forest fires, and wind erosion a high degree of surface visibility is available. UTM coordinates for the site are: [redacted]

Figure 246: General view of site, XMH-1156 heading north

Site XMH-1156 consists of 37 pieces of lithic debitage found on the surface of the site. One artifact concentration consists of 26 flakes found within a 3 meter area.

Recommendations
XMH-1156 has initially been classified as a small lithic scatter where late stage lithic reduction occurred. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

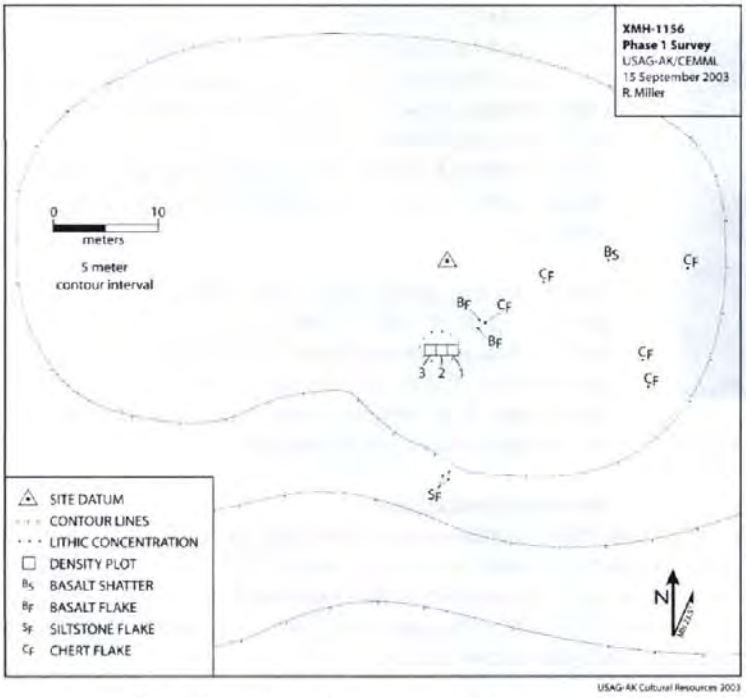

Figure 247: Site map of testing at XMH-1156

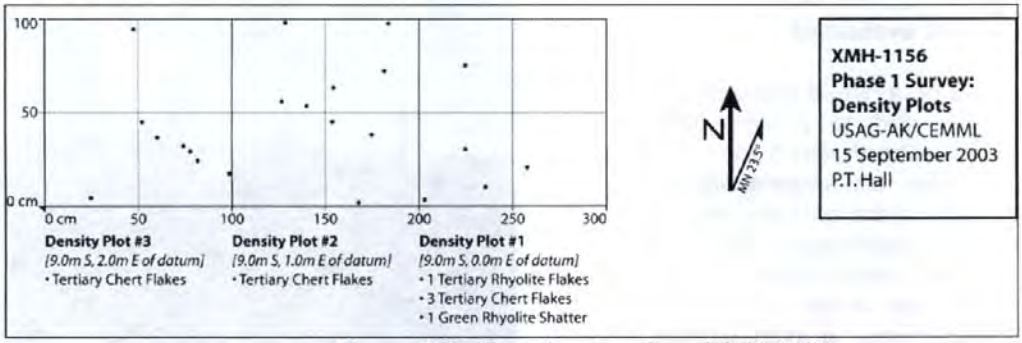

Figure 248: Density plots from XMH-1156

XMH-1157
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

The site is located on a rise of a larger ridge or bluff. The rise is part of a long (over 2 kilometer) southwest/northeast trending ridge that is elevated over 100 meters above the generally flat terrain to the east towards Jarvis Creek which is approximately 500 meters away. Thus the best view is provided looking east, but no lakes are visible. Due to recent episodes of forest fires, a high degree of surface visibility is available. UTM coordinates for the site are: [redacted]

Figure 249: General view of site, XMH-1157 heading south

Site XMH-1157 consists of 6 pieces of lithic debitage found within an 8 meter diameter area on top of the rise. The pieces include one white chert tertiary flake, 4 gray chert tertiary flakes, and one gray chert utilized/retouched flake. The utilized/retouch flake (FS1) measures 23 mm in length and 15 mm in width and weighs 6.75 grams.

Three density plots were calculated at the site. Density plot 1 (5S / 4W) contained 2 chert tertiary flakes, Density plot 2 (4S / 4E) contained one tertiary flake, and Density plot 3 (4S / 2E) contained one tertiary chert flake. Subsurface excavations have yet to be conducted.

Recommendations

XMH-1157 has initially been classified as a small lithic scatter where both primary and late stage lithic reduction occurred. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1158
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Figure 250: General view of site, XMH-1158 heading south

The site is located on a rise of a larger ridge or bluff. The rise is part of a long (over 2 kilometer) southwest/northeast trending ridge that is elevated over 100 meters above the generally flat terrain to the east towards Jarvis Creek which is approximately 500 meters away. Thus the best view is provided looking east, but no lakes are visible. Due to recent episodes of forest fires, a high degree of surface visibility is available. UTM coordinates for the site are: [redacted]

Site XMH-1158 consists of 3 pieces of lithic debitage found on the southeast slope of the rise. The pieces include one chert tertiary flake, one basalt tertiary flake, and one quartz tertiary flake. No density plots were calculated and subsurface excavations have yet to be conducted.

RECOMMENDATIONS

XMH-1158 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1159

Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Figure 251: General view of site, XMH-1159 heading south

The site is located of a rise on a larger ridge or bluff. The rise is part of a long (over 2 kilometer) southwest/northeast trending ridge that is elevated over 100 meters above the generally flat terrain to the east towards Jarvis Creek which is approximately 500 meters away. Thus the best view is provided looking east, but no lakes are visible. Due to recent episodes of forest fires, a high degree of surface visibility is available. UTM coordinates for the site are: [redacted]

Site XMH-1159 consists of pieces of lithic debitage found on the east slope of the rise. The pieces include two gray banded chert tertiary flakes. No density plots were calculated and subsurface excavations have yet to be conducted.

RECOMMENDATIONS

XMH-1159 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1160

Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Figure 252: General view of site, XMH-1160 heading south

Site XMH-1159 is located on a high point of a east/west trending glacial moraine ridge along which 33 Mile Loop Trail runs. The site is approximately 100 meters west of a small unnamed pond and 300 meters northwest of Fiddle Lake. The site consists of one obsidian microblade and one piece of chert shatter observed on the surface of 33 Mile Loop Trail. Subsurface examinations have yet to be conducted. UTM coordinates for the site are: [redacted]

Figure 253: Site map of testing at XMH-1160

RECOMMENDATIONS

XMH-1159 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-1161
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Site XMH-1159 is located on the east facing slope that rises. Good views are provided to the northeast, but no lakes are visible. Drum and Spring Lake are located 200 meters to the west. Surface examinations and subsurface testing in the immediate area yielded no additional artifacts. The area has been only slightly disturbed by wind erosion, and thus a limited amount of surface visibility was observed. UTM coordinates for the site are: [redacted]

XMH-1159 consists of a single black basalt broken flake that was found on the road surface of 33 Mile Loop Trail. This single artifact was collected due to it's location on the road surface and probability that it would be impacted by vehicle traffic.

XMH-1162
Latitude: [redacted]
Longitude: [redacted]
Determination: Not evaluated

Site XMH-1162 is located on the south end of a glacial moraine and elevated approximately 5-6 meters above a wetland to the northeast. Water is available approximately 150 meters to the northeast. A view to the east is moderate,

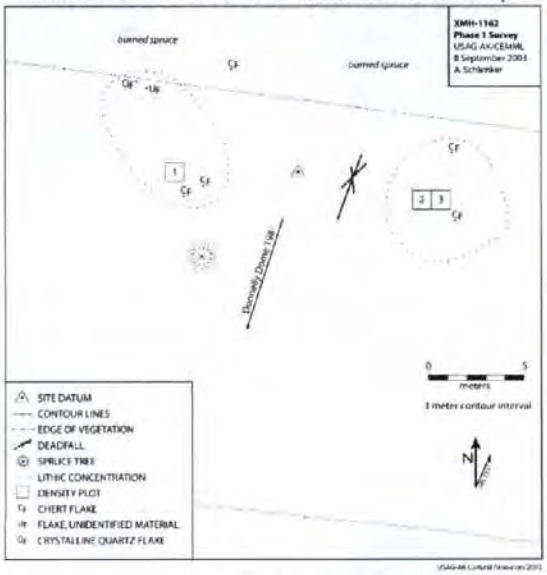

Figure 255: Site map of testing at XMH-1162

Figure 254: General view of site, XMH-1162 heading northeast

approximately 180°. Surface visibility is approximately 35%. Site disturbance consists of military shell casings, live blank cartridges and a fire which left numerous burned standing black spruce. UTM coordinates for the site are: [redacted]

XMH-1162 consists of 14 gray chert flakes, 1 quartz flake, and 1 salt and pepper chert flake. No tools were located. No shovel testing or excavations were conducted. All artifacts were located by a visual inspection of the landform surface. A large flat expanse, adjacent to the site, at a bearing of northwest is a likely location for site expansion. Three Density Plots (DP) were conducted, DP1 (7W/ .5S), DP2 (6 E/2S), DP3 (7E/2S).

Recommendations

XMH-1162 has initially been classified as a small lithic scatter where later stages of lithic reduction occurred. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

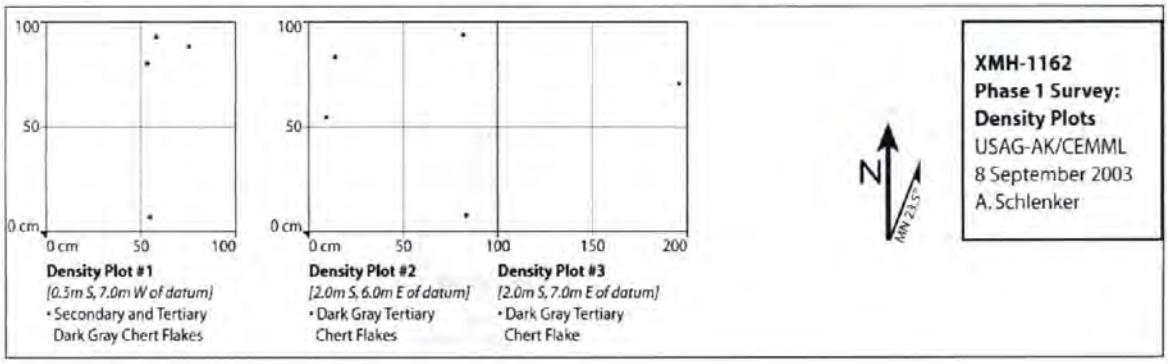

Figure 256: Density plots from XMH-1162

XMH-1163

Latitude: [redacted]

Longitude: [redacted]

Determination: Not evaluated

Site XMH-1163 is located on the south end of a large glacial moraine which runs southwest/ northeast. The site is located approximately 15 meters above a large flat expanse of burned spruce forest to the south and east. The south slope is extremely steep, causing the top of it to slough off and erode quickly. A dry lakebed was observed approximately 50 meters to the west. Donnelly Dome is located at 230° southwest. Surface visibility is poor on top and moderate on the south slope. Site disturbance in the form of a game trail runs along the top of the south slope. The south slope is eroding and exposing artifacts. It is highly likely the site continues on top of moraine. UTM coordinates for the site are: [redacted]

XMH-1163 consists of the 11 found on the surface of the site; one was black chert flake, one basalt flake, and nine rhyolite flakes. No shovel testing or excavations were conducted. Three Density Plots (DP) were calculated at the site, DP1 (16S/1W) was located directly below a boulder on the south slope and contained 4 flakes. DP2 (17S/1W) contained 1 flake and DP3 (7.5S/ 9S) contained 4 flakes.

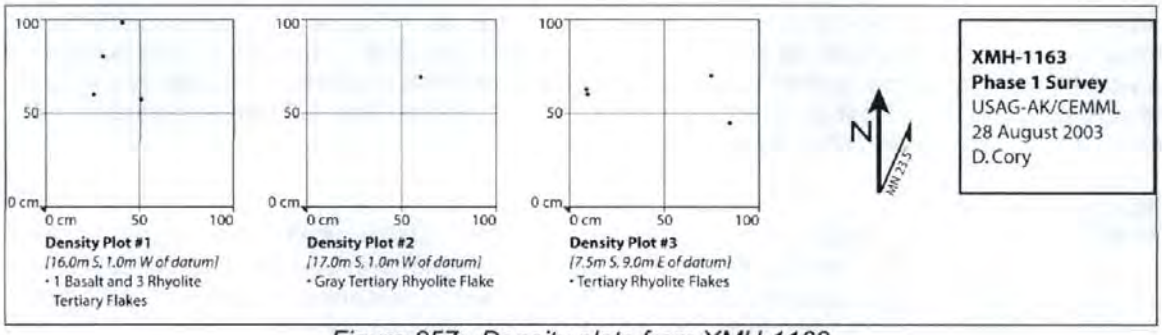

Figure 257: Density plots from XMH-1163

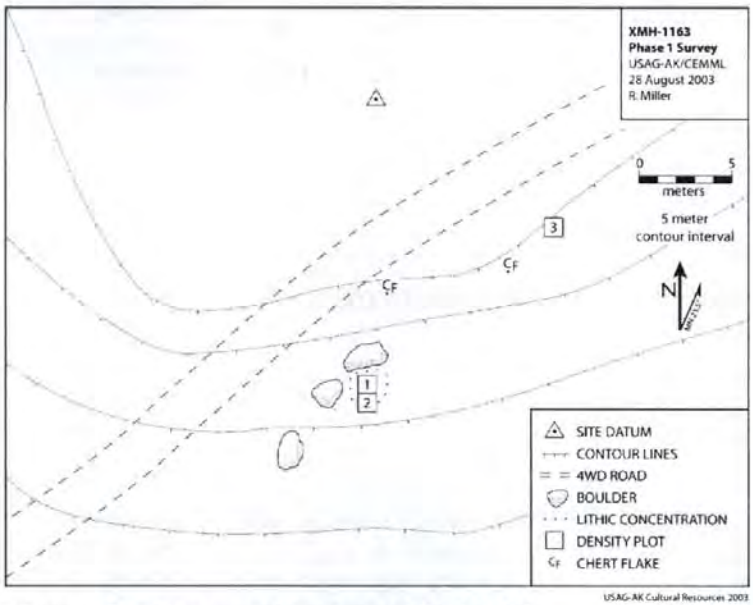

Figure 258: Site map of testing at XMH-1163

Recommendations

XMH-1163 has initially been classified as a small lithic scatter where later stages of lithic reduction occurred. This site lies inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the site falls into the APE of the chosen firing fan alternative, the site should be evaluated to determine eligibility for inclusion in the NRHP.

4.6 Erosion control and bridge replacement at the Northwest Training Center Rock (NWTC) Climbing Site, Fort Wainwright, Black Rapids Training Area (south of Donnelly Training Area East)

The United States Army has proposed an erosion control and bridge replacement project at the Northwest Training Rock Climbing site, located within U.S. Army Garrison Alaska (USAG-AK) lands, south of Ft. Wainwright's Donnelly Training Area at Black Rapids Training Area. The project involves streambank stabilization at Terry Creek and Fall Creek, east of the Richardson highway, with the placement of riprap and fills material. Additionally, the existing footbridge at Fall Creek is in poor condition, and will be replaced in kind.

The proposed projects are located on Terry Creek and Fall Creek; stream bank stabilization and erosion control would occur at both project locations, with the footbridge at Fall Creek replaced in kind. All equipment used in the stabilization and pedestrian footbridge replacement will utilize existing roads paralleling each creek.

Survey and Field Methods

In the summers of 2003, one archaeological survey crews (comprised of five archaeologists) employed by the Center for Environmental Management of Military Lands (CEMML, Colorado State University), conducted a pedestrian survey of the proposed Gravel Source and Access Road at Ft. Wainwright's Donnelly Training Area.

The project's Area of Potential Effect (APE) encompassed an area larger than the anticipated construction footprint, in order to ensure coverage of areas that may incur secondary impacts during construction or use. All of the area shown in red was surveyed in the summer of 2003 (Figure 259).

Parallel pedestrian transects spaced at 20m were walked systematically across the APE and surrounding area. Systematic sub-surface shovel testing was undertaken in across the APE. Shovel tests were typically 30cm in diameter and excavated into glacial till or consolidated outwash. All soil removed was screened through ¼" hardware cloth.

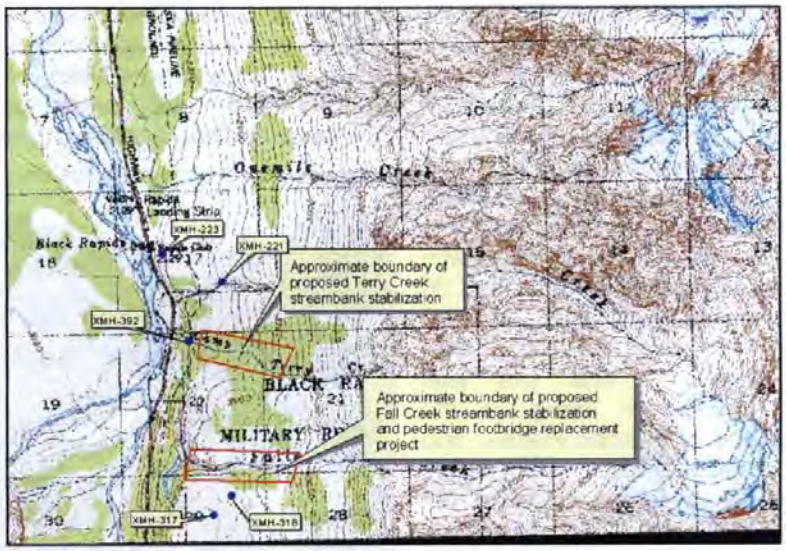

Figure 259. Location of Terry Creek and Fall Creek proposed project area, with previously recorded sites identified. USAG-AK Black Rapids Training Area (from USGS Mt. Hayes C-4 quad)

Results/Summary
Pedestrian survey of the proposed project area failed to identify any cultural resources within the boundaries of the proposed project's area of potential effect. The proposed stabilization work will be conducted on existing roads that parallel the creek banks; no impacts outside of the immediate stream banks or existing roads will occur. Thus, the project will have no effect on historic properties.

Cultural Resources

Five historic and prehistoric sites have been recorded in the vicinity of the proposed project areas (Figure 259). To the south of Fall Creek, two prehistoric sites were recorded by Bacon & Holmes (1980: 95, 41-45): XMH-317 is a sparse lithic scatter, comprised of ten chert waste flakes, observed on the down slope of a small outcrop; at XMH-318, a retouched flake and single waste flake were observed on a steep slope. Neither of these locations has been evaluated for extent of sub-surface material or eligibility for listing in the National Register of Historic Places. Both of these sites fall outside of the proposed project's area of potential effect, and will not be impacted by the proposed project.

Site XMH-392, near the crossing of Camp Terry Creek and the Richardson Highway (see figure 1), is the location of a Black Rapids White Alice Communication System (WACS). The Black Rapids WACS was opened in 1960, providing TD-2 microwave communication between Donnelly Dome WACS (19 miles north) and McCallum WACS (20 miles south). Facilities at the repeater station included a 1560 square foot radio relay building, a 722' chain link security fence, 2500 gallons of underground storage, and a TD-2 tower. The station was declared excess in 1979, and subsequently purchased by Alascom in 1984. As of 1988, the site was maintained and continued in use, and was determined eligible for listing in the National Register in 1988 (Reynolds 1988: 60).

Site XMH-221, located north of Camp Terry Creek, comprised a thin scatter of flakes, collected from the surface at the time of survey (Cook 1976c: 4). Exploratory testing failed to recover additional material, and subsequently was determined not eligible for listing in the National Register (Cook 1976c: 4).

The fifth remaining site recorded near the project area is the Black Rapids Roadhouse/Hunting Lodge, XMH-223. The original roadhouse consisted of a 2 story log constructed building. Single story log additions were constructed on the north, south and east sides, creating an L-shaped configuration. Both the north and south additions have metal covered gables roofs, running perpendicular to the original construction. The east addition contains three additional rooms. The Black Rapids roadhouse is one of a few remaining roadhouses that operated along the Valdez-Fairbanks trail, (now the Richardson Highway) between 1904 and 1923. Originally there were more than 30 roadhouses, which were linked by one day's travel (Phillips 1984: 56; Smith 1974: 23, 94-95). This site was determined eligible for listing in the National Register of Historic Places, and listed in February 2001. The Black Rapids Roadhouse falls outside of the proposed project's area of potential effect.

Figure 260. Pedestrian bridge at Fall Creek, to be replaced in kind

PEDESTRIAN BRIDGE
The Falls Creek bridge was originally built in the 1960's, although no records of the specific

date are available. The bridge was then replaced in the 1970's, following the original bridge design and construction footprint. Both the original bridge construction and bridge replacement in the 1970s were constructed by Army engineers, but no specific records documenting the bridge's design or construction exist.

This bridge provided troop access to training lands. Training activities provided by Fort Wainwright during the Cold War era does not achieve "exceptional importance." Training activities represent Garrison training, consisting of training activities common to all installations in providing for combat readiness. For training facilities less then 50 years old to achieve "exceptional importance," it is necessary to document that new training or combat doctrine was developed at the facility that has importance in directing how the Army approached training or combat Department wide. No new training or combat doctrine was developed at Fort Wainwright. It followed training doctrine established elsewhere.

Based on National Register criteria, the bridge is not eligible for listing in the National Register of Historic Places: the original structure has been replaced, and is less than 50 years old; it is not an example of a distinctive design; and does not hold a significant association with a specific event or person. Subsequently, the bridge is not considered a 'historic property,' for purposes of Section 106.

REFERENCES

Anderson, Douglas D.
1968 *Early Notched Point and Related Assemblages in Western American Arctic.* Unpublished manuscript on file in the University of Alaska Museum.

1970a Microblade Traditions in Northwestern Alaska. *Arctic Anthropology* 7(2):2-16.

1970b Akmak: An Early Archaeological Assemblage from Onion Portage, Northwest Alaska. *Acta Arctica* 16. Copenhagen.

Andrews, E.F.
1975 *Salcha: an Athabaskan Band of the Tanana River and its Culture.* Master's Thesis, University of Alaska Fairbanks.

1987 Archaeological Evidence of European Contact: the Han Athapaskans near Eagle, Alaska. *High Plains Applied Anthropology* 7(2):51-64

Bacon, Glenn H.
1978 *Final Report on the Archaeological Survey of the XM-1 Tank Range, Fort Greely, Alaska.* Final Report. Prepared for the US Army Corps of Engineers. Alaska District, NPASU-78-78-41. Prepared by Alaskarctic, Fairbanks.

Bacon, Glenn H.
1979. Malamute Drop Zone, Preliminary Archaeological Survey Report. Division of Parks and Outdoor Recreation, Anchorage, AK.

Bacon, G.H. and C.E. Holmes
1979 *Archaeological Survey and Inventory of Cultural Resources at Fort Greely, Alaska,* 1979. Final Report. Prepared for the U.S. Army Corps of Engineers, Alaska District.

Burr Neely, Ronald J.
2001 Early Mining History: Fort Wainwright and Fort Greely, Alaska. Prepared for the Center for Ecological Management of Military Lands, Colorado State University. CEMML TPS 01-3.

2003. Early Transportation Routes: Fort Wainwright, Alaska. Prepared for the Center for Environmental Management of Military Lands, Colorado State University. CEMML TPS 02-10.

Carberry, Michael and Donna Lane.
1986. *Patterns of the Past: An Inventory of Anchorage's Historic Resources.* Municipality of Anchorage Community Planning Department. Van Cleve Printing Company, Anchorage, Alaska.

Center For the Environmental Management of Military Lands
2001 *Integrated Cultural Resources Management Plan 2002-2006, Fort Richardson, Alaska,* United States Army Alaska, CEMML, Colorado State University, Fort Collins, CO

Chandonnet, Ann
1979 *The Once and Future Village of Ikluat/Eklutna.* Adams Press, Chicago.

1985 *On The Trail of Eklutna.* User-Friendly Press, Anchorage.

Cook, John P.
1989 Historic Archaeology and Ethnohistory at Healy Lake, Alaska. *Arctic* 42(3):109-118.

1996 Healy Lake. In *American Beginnings: The Prehistory and Paleoecology of Beringia.* Frederick Hadleigh West, ed. University of Chicago Press.

Davis, Nancy Yaw
1965 *A Tanaina Indian Village.* Unpublished Master's thesis, Department of Anthropology, University of Chicago.

Davis, Nancy Yaw and the Dena'ina Team
1994 *Draft Report – Ethnohistoric Land Use Patterns: Elmendorf Air Force Base (Knik Arm) Area, Alaska.* Prepared for the National Park Service and Elmendorf Air Force Base. Cultural Dynamics. Anchorage, Alaska.

DeLaguna, Frederica
1975 *The Archaeology of Cook Inlet*, 2nd edition. Alaska Historical Society, Anchorage.

Department of the Army. 1985. *FM 5-103 Survivability.* Washington, D.C.: Headquarters Department of the Army

Department of the Interior, National Park Service, National Register, History and Education
2000 *National Register Bulletin, Guidelines for Evaluating and Registering Archaeological Properties.* Eds. Barbara Little, Erika Martin Seibert, Jan Townsend, John H. Sprinkle, Jr., and John Knoerl.

Dilley, T.E.
1996 *The Geoarchaeological Potential of Elmendorf Air Force Base.* Manuscript on File at U.S. Army Alaska Directorate of Public Works, Environmental Office.

Dixon, E.J., G.S. Smith, and D. Plaskett
1980 *Archaeological Survey and Inventory of Cultural Resources, Fort Wainwright, Alaska.* Prepared for U.S. Army Corps of Engineers, Alaska District.

Dixon, Greg
1980 The Moose River Site, 1978 (with a special appendix by John E. Lobdell). In Archaeological Survey Projects, 1978, ed. T.L. Dilliplane. Pp. 32-48. *Miscellaneous Publications, History and Archaeology Series*, No. 22. Alaska Division of Parks, Department of Natural Resources, Anchorage.

Dumond, Don E.
1977 *The Eskimos and Aleuts.* London: Thames and Hudson

Dumond, Don and R.L.A. Mace
1968 An Archaeological Survey Along Knik Arm. *Anthropological Papers of the University of Alaska* 14(1):1-21.

Ellana, Linda J. and Andrew Balluta
1992 *Nuvendaltin Quht'ana: The People of Nondalton.* Smithsonian Institution Press, Washington D.C.

Fall, James.
1987. Upper Inlet Dena'ina Regional Bands, Subsistence Patterns, and Traditional Leaders. In James Kari &James A. Fall (eds.), *Shem Pete's Alaska: The Territory of the Upper Cook Inlet Dena'ina.* Alaska Native Language Center, University of Alaska, CIRI Foundation. Pp. 21-28.

Frizzera, Arturo
1973 *Preliminary Survey Report, Blair Lakes Alaska.* Fairbanks, Alaska: University of Alaska, Fairbanks, and Anthropology Department.

Gabriel, H.W., and G.F. Tande.
1983. *A Regional Approach to Fire History in Alaska.* U.S. Department of the Interior, Bureau of Land Management Technical Report 9, BLM/AK/TR-83/09.

Gamza, Thomas
1995 *Excavation and Evaluation of Sullivan's Roadhouse (XBD-061), Fort Greely, Alaska 1994.* Final Report. Prepared for the Office of History and Archaeology, Division of Parks and Recreation, Alaska Department of Natural Resources, Anchorage.

Goebel, Ted E., W. Roger Powers, and Nancy H. Bigelow
1991 The Nenana Complex of Alaska and Clovis Origins, in: *Clovis: Origins and Adaptations* (R. Bonnichsen and K.L. Turnmire, eds.), Center for the Study of the First Americans, Oregon State University.

Goodwin, R. and Associates.
1997 *Historic Context for Department of Defense Facilities World War II Permanent Construction.* Prepared for U.S. Army Corps of Engineers, Maryland.

Hedman, William.
2002. Research Design: U.S. Army Alaska, 2002 Range Developments. Section 106 Archaeological Inventory and Evaluation, Fort Richardson and Fort Wainwright. Center for Environmental Management of Military Lands (CEMML), Colorado State University, Ft. Collins, CO and U.S. Army alaska, Fort Wainwright, Alaska.

Henn, Winfield
1978 Archaeology on the Alaska Peninsula: The Ugashik Drainage, 197301975. *University of Oregon Anthropological Papers* 14. Eugene.

Higgs, A.S., B.A. Potter, P.M. Bowers, and O.K. Mason
1999 *Cultural Resource Survey Report of the Yukon Training Area and Fort Greely Army Lands Withdrawal, Alaska. Draft Report.* Prepared for CRREL and ABR Inc., Fairbanks.

Hoffecker, John F., W. Roger Powers, and Nancy H. Bigelow
1996 Dry Creek. In *American Beginnings: The Prehistory and Paleoecology of Beringia.* Frederick Hadleigh West, ed. University of Chicago Press.

Hoffecker, John F., W. Roger Powers, and Peter G. Phippen
1996 Owl Ridge. In *American Beginnings: The Prehistory and Paleoecology of Beringia.* Frederick Hadleigh West, ed. University of Chicago Press.

Hollinger, Kristy
2001 Homesteads on Fort Richardson, Alaska. Prepared for the Center for the Ecological Management of Military Lands, Colorado State University. CEMML TPS 01-4.

Holmes, Charles E.
1979 *Archaeological Reconnaissance Report for Fort Wainwright, Fort Greely, and Fort Richardson Withdrawal Lands, Alaska.* Report Prepared for the 172nd Infantry Brigade.

1996 Broken Mammoth Site. In *American Beginnings: The Prehistory and Paleoecology of Beringia.* Frederick Hadleigh West, ed. University of Chicago Press.

1998 New Data Pertaining to Swan Point, the Oldest Microblade Site Known in Alaska, *CRP* (15) 21-22.

2000 Classification of Early Alaskan Archaeological Assemblages: the Search for Useful Criteria. Canadian Archaeological Association 33rd Annual Conference, Ottawa.

Holmes, Charles E., Richard VanderHoek, and Thomas E. Dilley
1996 Swan Point. In *American Beginnings: The Prehistory and Paleoecology of Beringia*. Frederick Hadleigh West, ed., Pp. 319-323 University of Chicago Press.

Kari, James
1988 Some linguistic insights into Dena'ina Prehistory. In *The Late Prehistoric Development of Alaska's Native People*. Eds. Robert Shaw, Roger Harritt, and Don Dumond. Aurora, Alaska Anthropological Association Monograph Series #4, Anchorage. Pp. 319-338.

Kari, James and Priscilla Russell Kari (edited by Jane McGary)
1982 *Tanaina Country = Denaina elnena*. Alaska Native Language Center, University of Alaska (Fairbanks).

Kuranda, K
1997 *Historic Context for Department of Defense World War II Permanent Construction*. R. Christopher Goodwin and Associates, Maryland.

Lichvar, R., C. Racine, B. Murray, and G. Tande.
1997. *Floristic Inventory of Vascular and Cryptogam Plant Species at Fort Richardson, AK.* Report prepared by Waterways Experiment Station and Cold Regions Research and Engineering
Laboratory, U.S. Army Corps of Engineers.

McKennan, R.A.
1981 Tanana. In: Handbook of North American Indians, Vol. 6, Subarctic. Gen. Ed. William Sturtevant, Vol. Ed. June Helm. Smithsonian Institution, Washington.

McMahan, J.D., R.J. Dale, and C.E. Holmes
1991 Cultural Resources Testing and Evaluation of Selected Sites Along the Sterling Highway Milepost 37-60, Kenai Peninsula, Alaska, 1988-89 Project F021-2(15)/(A09812). Office of History and Archaeology Report No. 14, Alaska Division of Parks and Outdoor Recreation, Anchorage.

Mishler, Craig W.
1986 *Born With the River: An Ethnographic History of Alaska's Goodpaster and Big Delta Indians*. Alaska Department of Natural Resources, Division of Geological and Geophysical Surveys Reports, Public Data File 86-14, Fairbanks.

Osgood, Cornelius.
1937. The Ethnography of the Tanaina. *Yale University Publications in Anthropology* 16. New Haven, Conn.

Pearson, Georges P.
1997 New Evidence for a Nanana-Complex Occupation at the Moose Creek Site, Central Alaska: Preliminary Results of the 1996 Re-excavation, *CRP* (14) 72-74.

Phillips, Walter T., Sr.
1984 *Roadhouses of the Richardson Highway, the First Quarter Century: 1898-1923*. State of Alaska, Alaska Historical Commission, Anchorage.

Potter, B.A., S.C. Gerlach, A.S. Higgs, and P.M. Bowers
2000 *Final Cultural Resource Survey: Fort Greely, Yukon Training Area (Fort Wainwright), Alaska for the National Missile Defense Program.* For USAR Space and Missile Defense Command, by Northern Land Use Research, Inc. Fairbanks, Alaska.

Price, Kathy
2002 Homesteads on Fort Wainwright, Alaska. Prepared for the Center for Environmental Management of Military Lands, Colorado State University. CEMML TPS 02-9.

Rabich, J. and D. Reger
1978 Archaeological Excavations at the Gerstle River Quarry Site, in *Archaeological Survey Projects 1977. Miscellaneous Publications in History and Archaeology Series* No. 18. Alaska Department of Natural Resources, Division of Parks, Anchorage.

Reger, Douglas R.
1977 An Eskimo Site Near Kenai, Alaska. *Anthropological Papers of the University of Alaska* 18(2):37-52.

1981 *A model for culture history in Upper Cook Inlet, Alaska.* Ph.D. Dissertation, Washington State University, Pullman.

Reger, Douglas R. and Glenn H. Bacon
1996 Long Lake. In *American Beginnings: The Prehistory and Paleoecology of Beringia*, Ed. Frederick Hadleigh-West. University of Chicago Press, Chicago. Pp. 436-438.

Reger, Douglas and Alan Boraas
1991 *An Overview of the Radiocarbon Chronology in Cook Inlet Prehistory.* Paper presented at the 20th Annual Meetings of the Alaska Anthropological Association, Anchorage.

1996 *An overview of radiocarbon chronology in Cook Inlet prehistory. In Adventures Through Time: Readings in the Anthropology of Cook Inlet, Alaska.* Eds. Nancy Yaw-Davis and William E. Davis. Cook Inlet Historical Society, Anchorage. Pp. 156-171.

Reger, Douglas R. and DeAnne S. Pinney
1996 Late Wisconsin Glaciation of the Cook Inlet region with emphasis on the Kenai Lowlands and implications for early peopling. In *Adventures Through Time: Readings in the Anthropology of Cook Inlet, Alaska.* Eds. Nancy Yaw-Davis and William E. Davis. Cook Inlet Historical Society, Anchorage. Pp. 15-35.

Reynolds, Georgeanne L.
1996 *Survey of Moose Run Golf Course Expansion*, Fort Richardson, Alaska. Division of Parks and Outdoor Recreation, Anchorage, AK

Robertson, Aaron
2003 "Archaeological Survey & Evaluation for: Cold Regions Test Center, Cold Weather/Automotive Test Complex, Donnelly Training Area, Fort Wainwright, Alaska." Center for Environmental Management of Military Lands, Colorado State University, Colorado.

Shaw, Robert D.
2000 *Historical Properties and Paleontological Resources Survey for the Realignment of the Alaska Railroad Corporation Tracks Across Elmendorf AFB and Fort Richardson, Alaska.* Report by Robert Shaw Enterprises for Tryck Nyman Hayes Inc. for Alaska Railroad Corporation.

Sheppard, W., A.F. Steffian, D.P. Staley, and N.H. Bigelow
1991 *Late Holocene Occupations at the Terrace Site, Tok, Alaska. Final Report.* Prepared for U.S. Air Force Over-the–Horizon Backscatter Radar Program, Fairbanks.

Shinkwin. A.D.
1979 Dakah De'nin's Village and the Dixthada Site: a Contribution to Northern Alaskan Prehistory. *National Museum of Man Mercury Series* No. 91.

Staley, David P.
1993 *A Phase I Cultural Resource Survey of 19 Locations for the Proposed Yukon Measurement and Debriefing System in Interior Alaska*. Final Report. Prepared by Mariah Associates, Inc. Albuquerque.

Steele, Julia L.
1978 *Otter Lake Reconnaissance*. Manuscript on file at the U.S. Army Corps of Engineers, Anchorage, AK.

1980 *Archaeological Survey and Cultural Resources Overview, Fort Richardson, Alaska*. U.S. Army Corps of Engineers, Anchorage, AK.

Townsend, Joan
1965 *Ethnohistory and Culture Change of the Iliamna Tanaina*. Ph.D. Dissertation. Anthropology Department, UCLA, Los Angeles.

1970 The Tanaina of Southwestern Alaska: An Historic Synopsis. *Western Canadian Journal of Anthropology* 2(1):2-16.

1975 Alaskan Natives and the Russian-American Company: Variations in Relationships. In *Proceedings of the Second Congress of Canadian Ethnology Society*, Vol. 2, Eds. Jim Freedman and Jerome Barkow, pp. 555-570. National Museum of Man. Mercury Series. Canadian Ethnology Service Paper No. 28, Ottawa.

1981 Tanaina. In *Handbook of North American Indians* Vol. 6: Subarctic, Ed. June Helm, pp. 623-640. Smithsonian Institution Press, Washington D.C.

UAA archives water blue collection, box 1, military histories series, 1a, general and command histories, History of the Alaksan Department, June 1940-June 1944.

Veltre, Douglas W.
1978 *Report to Chugach Electric Association: Archaeological Survey of Right-of-way from University Substation to Knik Arm (East Terminal)*. Manuscript on file at U.S. Army Corps of Engineers, Anchorage, AK.

Viereck, L.A., and Little. E.L.
1972. *Alaska Trees and Shrubs*. U.S. Department of Agriculture, Forest Service, Agriculture Handbook No. 410.

West, Frederick H.
1967 The Donnelly Ridge Site and the Definition of an Early Core and Blade Complex in Central Alaska. *American Antiquity* 32 (2):360-382

1981 *The Archaeology of Beringia*. New York: Columbia Press.

Workman, William R.

1974 First Dated Traces of Early Holocene Man in the Southwest Yukon Territory, Canada. *Arctic Anthropology* 11(suppl.):94-103.

Workman, William R.

1978 Prehistory of the Aishishik-Kluane Area, Southwest Yukon Territory. *Mercury Series Paper* No. 74. Ottawa: National Museum of Man.

1996 Human Colonization of the Cook Inlet Basin before 3000 years ago. In *Adventures Through Time: Readings in the anthropology of Cook Inlet, Alaska.* Eds. Nancy Yaw-Davis and William E. Davis. Cook Inlet Historical Society, Anchorage. Pp 40-48.

Yarborough, Linda F.

1978 *Chena River Lakes Project Cultural Resource Investigation. Final Report.* Prepared for the U.S. Army Corps of Engineers, Alaska District.

Yesner, David R.

1996 Human Adaptation at the Pleistocene-Holocene Boundary (Circa 13,000 to 8,000 BP) in Easter Beringia. In Humans at the End of the Ice Age: The Archaeology of the Pleistocene-Holocene Transition.

Yesner, David R., Charles Holmes and G. Pearson

1999. *Recent Excavations at the Broken Mammoth Site, Big Delta, Alaska: Reflections on Activity Patterning and Artifact Assemblages.* Paper Presented at the 64th Annual Meeting of the Society of American Archaeology, Chicago