MR 85-0

Excerpt fr . Rep on The Matanuska Coal Fi
In the Valley of the Matanuska River, Alaska,
by William Griffith, Mining Engineer and Geologist,
Scranton, Pa. December 2, 1905.

MOOSE AND GRANITE CREEK FIELD:

KH 85-112

Moose Creek is a large stream which enters the Matanuska a few miles above tide water. See map in the appendix. About five miles above the mouth of this stream a large coal vein is exposed on the east bank. A photograph of this exposure is given in the Appendix; also Section B on place following page 18 shows a measured section of the seam thus exposed. This exposure is large and shows a fine seam of coal about 10 feet thick, having a strike North 45° East, dipping 45° northwestward. Sometime in the past the vein has been on fire at the surface, as is evidenced by the burned rocks overlying the vein. This seam outcrops at the level of the water on Moose Creek, extending past the hillside until concealed by the overlying surface debris. A small fault in the vein is seen just before it disappears at the tree roots, which has caused a displacement of the seam of several feet.

About a half mile farther down the stream another seam of coal is exposed on the high bank of the Creek, shown on Section A, following page 18. The strike of this latter exposure is North and South, and the dip is 47° to the Eastward, thus indicating a probable anticlinal in the measures between the two exposures. Samples were taken of the first seam, but not of the latter.

85-173

On Eska Creek, about three miles up the stream from the Matanuska, a prominent anticlinal is exposed by the washing of the bank on the west side of the stream. A photograph of this exposure is shown in the Appendix. There is one, and possibly two workable coal seams at this point. The strike of the anticlinal is southwestward, the dip on the North side being northwest 32°, and on the southeast side 22°. The center of the anticlinal is disrupted somewhat by the variable fault.

From the analyses which are given in the following chapter, the Moose Creek and Eska Creek coals would seem to form a quality and field by themselves.

It is said that exposures also exist on Granite Creek, although we had no opportunity to visit them. They are doubtless of the same general character.

If this coal field is continuous from some point to the eastward of Moose Creek throughout the Granite Creek, it extends probably eight miles in length, consisting of a series of parallel seams which apparently rise to the surface on both sides of the

anticlinal, having a general trend parallel with the Matanuska River. The seams, as indicated by the section shown, vary in thickness from three to ten feet, and the field would contain a large quantity of merchantable coal.

CHICKALOON DISTRICT:

A very prominent exposure of coal is found on Kings River, KK 85.181 at an elevation of about 1000 feet above tide, and about six miles up the stream from its junction with the Matanuska. Another large exposure of coal of similar quality is found on the Chickaloon, about two miles from its mouth, at an elevation of about 800 feet above tide. About three miles to the southeastward of Chickaloon, on the South side of the Matanuska River, both on the banks of the main stream and on Coal Creek, also in one of the streams to the eastward of coal creek, a number of exposures of coal are found.

All of these coals, the Kings River, Coal 85.185 Creek and Chickaloon, 85.98 are of a similar quality, and would comprise one division, and a part of the Matanuska field. The area is about ten miles long and three miles in width. The subdivision of the field would therefore comprise about thirty square miles. The several known exposures of this coal examined are located on the general map at the end of the report, and are further illustrated by photographs in the Appendix, and the detailed plates of the Kings River and Chickaloon locality following pages 9 and 10.

Aside from this, no positive information can be had as to the conditions of the coal at other points where developments have not been made. It would however, seem to us that there exists here a field of coal which, although likely to be more or less disrupted and faulty, owing to the proximity of the igneous rocks, will nevertheless contain an enormous quantity of high grade merchantable coal.

At Kings River, where the sections indicate, there are two seams overlying each other about 20 feet, the lower one approximately ten feet in thickness and the upper one about half as thick. The outcrop extends in a north and south direction across Kings River at a point where the east bank of the stream has been washed away, leaving a high, precipitous cliff. The top of this cliff is composed of about fifty feet in thickness of igneous rock, granitic in nature. Under this igneous sheet is found a comparatively regular deposit of sedimentary rocks containing the coal. The outcrop is well defined for about one-third of a mile, and is very regular as to dip and strike. The dip varies from 35° to 19° to the eastward,

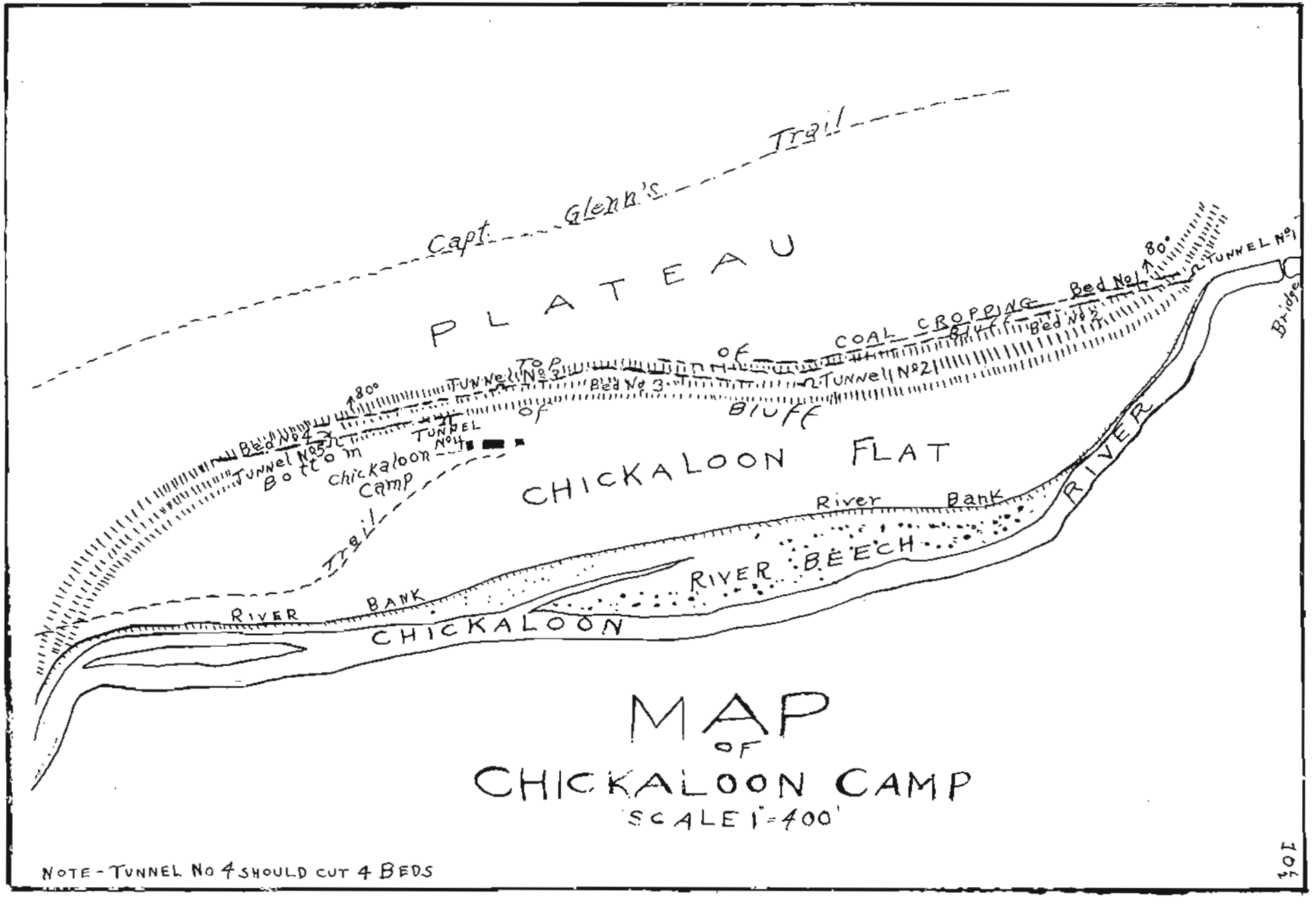
giving one the impression of a spooning out at the end of the coal basin. The seam is in the best condition near the southerly end of the visible outcrop. On the northerly side the igneous rocks have approached close to the seam, and it has been transformed near the outcrop into natural coke.

All the conditions considered, the Kings River outcrop presents an excellent point for attacking the coal. Measured sections of the Kings River coal are given on the plate following page 19, and the analysis and quality will be found in the subsequent chapter, which treats of the quality of the coals.

At Chickaloon a similar quality of coal has been exposed by the washing of the hillside on the north side of the Chickaloon river. Here four veins are exposed, having a nearly vertical dip and a strike of about 70 East. Sections of the several seams and a general section of the measures at this point are illustrated on a plate following page 19. It will be noted that the seams are all of workable thickness, one of them reaching a thickness of 15 feet. The outcrop is exposed for about a half mile at the western end. It disappears under the glacial till covering the plateau above it, and at the eastern end it is terminated by the Chickaloon River, which it apparently crosses. The general direction of the strike would carry the outcrop towards the Kings River exposure, and the natural inference is that the Thickaloon and Kings River seams belong to the same basin, and probably extend in a more or less continuous manner across the intervening space. We must anticipate, however, that faults of greater or less magnitude would interrupt the perfect continuity of the seam, which would be in normal condition in the absence of igneous action. The same general conclusions may also be drawn with reference to the coals to the southward of the Matanuska River and eastward of Chickaloon Camp. Here the seams dip from 45 to 70° southeastward and the strike indicates the possible ending of the coal basin, although father to the eastward other veins are said to be exposed in the erosion caused in the banks of the stream which flows into the Matanuska a few miles to the eastward. While these seams doubtless at one time formed a continuous coal basin in connection with the Chickaloon and Kings River coals, the strike and dip of the seams indicates a disruption of the normal continuity of the outcrop, such as is common in volcanic regions. Owing to the glaciated nature of the country, which carries a thick deposit of glacial till on the surface, over which is a continuous mat of Alaska moss, the further limits of the coal basin cannot be determined without extensive development which is incident to the regular mining of the coal seams. The several seams of coal to the southward of the Matanuska, measured sections of which are fully illustrated on the map above-mentioned, are of good workable thickness, and should furnish sufficient coal to warrant a separate operation on the south side of the Matanuska. Suffice it to say that the coals exposed in the Chickaloon district of the Matanuska field indicate the presence of sufficient coal to abundantly warrant the xxxxxxx

extension of a railroad up the Matanuska from the main line near Knik, for the purpose of its development.

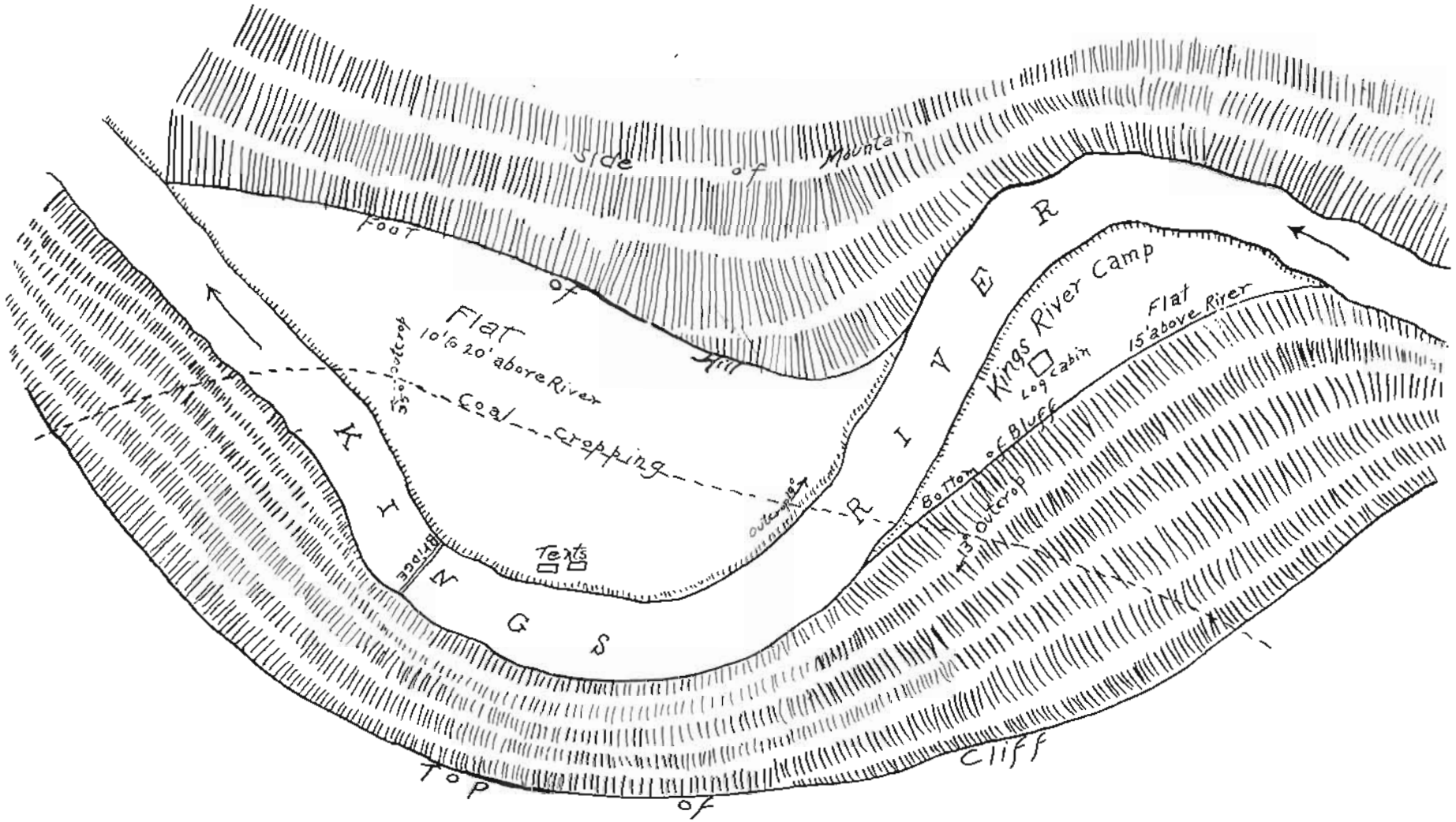
About a mile up the Chickallon River, above the Chickaloon Camp, coal bearing rocks are exposed, having a regular dip of about 25° to the southward, and a strike parallel with the general trend of the field. Several thin coal seams are exposed, but nothing of sufficient thickness to be attractive commercially. This fact indicates to the geologist the possible northern limit of the basin. The trend of the measures would carry the outcrop to the eastward, parallel with the river, and gradually ascending the mountain slope to the northward, until at a point 16 miles to the eastward the outcrop would attain an approximate altitude of 3000 to 4000 feet above the tide, and would be located about four miles south of the river. In this locality there are a number of exposures of coal seams, some of them thick enough to be commercially valuable, but the apparent area of the coal as indicated by the exposures, is so limited that it would hardly warrant the expense necessary for their development, unless a railroad had been previously extended up the Matanuska River for some other purpose than for the development of this particular coal. There is also found here, a very large exposure of a fine quality of Anthracite coal. The exposure is about 38 feet in thickness, and of indefinite length, showing itself on the side of one of the elevations in the mountain side at a height of 3500 feet above tide, about 2600 feet above the Matanuska River and three miles north of the same. While this magnificent exposure of a fine quality of Anthracite is exceedingly attractive to the investor, in our judgment the quantity of coal herein contained is very limited, and until further developments prove otherwise, it could not be considered of sufficient value to warrant the extension of railroad facilities to develop it. Some of the smaller photographs in the Appendix show the unattractive condition of the coal in this immediate vicinity, the seams being tilted at all angles, very irregular as to strike and dip, and warrant the conclusion that so far as known at this writing, the coals in the upper reaches of the Matanuska field above the Chickaloon District are not to be so much depended upon for a commercial supply of coal as those farther to the westward. There is ample opportunity, however, for future discovery in this locality of other seams having greater commercial value.



MAP OF CHICKALOON CAMP

SCALE 1" = 400'

NOTE - TUNNEL No 4 SHOULD CUT 4 BEDS



MAP OF KINGS RIVER CAMP

Scale 1" = 200'