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The State of Wyoming.
Office of State Geologist,
Cheyenne.

X

A REPORT

on

ASBESTOS PROPERTIES

of

THE WYOMING CONSOLIDATED ASBESTOS COMPANIES.

near

CASPER. NATRONA COUNTY. WYOMING.

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SITUATION.

The properties of the WYOMING CONSOLIDATED ASBESTOS COMPANIES lie in two separate groups, distant about eight miles from each other, as shown by the accompanying map of the south-eastern vicinity of Casper, Natrona County, Wyoming.

The Smith Creek Group is as follows;

The Serpentine	No. 1	Lode
" Serpentine	2	"
" Serpentine	3	"
" Serpentine	4	"
" Serpentine	5	"
" Serpentine	16	"
" Serpentine	17	"
" Serpentine	18	"
" Serpentine	19	"
" Serpentine	20	"

These claims are situated in Sections 19, 20, 29 and 30, T. 31 N.; R. 78 W.

The Casper Mountain Group is as follows;

The Independent Lode.
" Lead Hill Lode.
" Spring Valley Lode,

These claims are situated in Sections 19 and 30, T. 32 N. R. 79 W.

This group also includes leased land as follows;

The N. $\frac{1}{2}$ of the N. $\frac{1}{2}$ of the S.E. $\frac{1}{4}$, Section 16, T. 33 N. R. 79 W.
" N.E. $\frac{1}{4}$ of the same section.
A part of the E. $\frac{1}{2}$ of the N.W. $\frac{1}{4}$ of the same section.

These two groups comprise about 480 acres of mineral land, all situated as above described and shown by accompanying map, and located in the south-eastern part of Natrona County, Wyoming.

TITLE.

The ten lode claims on Smith Creek, comprising about two hundred acres, and the three lode claims on Casper Mountain, about sixty acres, are all held by location and discovery, under the laws of the United States and the State of Wyoming, as shown by the records of the County Clerk of Natrona County, at Casper, Wyoming.

The land previously described as lying in Section 16, T.33 N. R.79 W. is school land leased from the State of Wyoming, as provided for the leasing of State Mineral Lands under the laws of Wyoming by the State Board of Land Commissioners, as shown by the records of the Commissioner of Public Lands at Cheyenne, Wyoming. This leased land is about two hundred and twenty acres, and the total acreage of both groups is given at four hundred and eighty acres.

GENERAL DESCRIPTION.

The range of mountains locally known as the Casper Range is the western end of what is known as the Laramie Mountains, which extend from the Wyoming-Colorado line northerly over a distance of one hundred and fifty miles to Laramie Peak, and thence westerly to Casper Mountain. The numerous small ranges of the main range at this point have various local names and are marked on the map accompanying this report.

Smith Creek heads on Muddy Mountain, at a point south-east of Casper and flows north-easterly into Big Muddy creek and thence into the North Platte River at Big Muddy Station, east of Casper.

Casper Mountain lies immediately south of Casper and extends easterly and westerly for a distance of ten or twelve miles, and on the

southerly side connects with Muddy Mountain and the Dear Creek Range, forming the water shed of eastern Natrona County.

GENERAL GEOLOGY.

The general geology of these ranges are all similar, consisting of a core of granite and similar rocks flanked by limestones and succeeding sedimentary deposits, such as shales, sandstones, gypsum beds, etc.. These beds show dipping at varying angles throughout ~~in~~ this whole vicinity and in some cases occur lying flat on the granite on the top of the ranges, but as a rule, are missing on the top of the range.

Associated with the granites are dykes of diorite and allied rocks, and serpentine is noted on Casper Mountain, on Muddy Mountain at Smith Creek, and also, in Dear Creek Park, east of Smith Creek.

The full extent of these serpentine ledges is not known as but very little general work has been done here. It has been demonstrated, however, that this serpentine carries asbestos of fine quality and the quantity may be said to be practically unlimited.

THE QUALITY OF THE ASBESTOS.

In the opinion of the writer, the asbestos found here is the variety known as "chrysotile" and suitable for manufacture into a great variety of commercial products, and that it is a very valuable deposit.

The writer has personally taken samples from the workings on these groups, which he has roughly fiberised and worked up to a point which showed the commercial quality of the asbestos.

In both groups there is a great quantity of the short fiber suitable for the rougher purposes of manufacture, together with a smaller quantity of the longer fiber suitable for the finer purposes of

commerce, as well as great amounts of asbestos "waste", made up of very short fiber and serpentine rock, which may be utilized and is now in demand for fire proof plasters, fillings and backings and wherever a cheap fireproof material is required.

The Chrysotile Asbestos of the Casper Mountain and Smith Creek locality is a fibrous, greenish-white mineral which possesses remarkable heat, sound and electricity non-conducting qualities, and is further capable of a great variety of commercial uses.

In addition to the chrysotile variety before noted, there are also noted quantities of the harder and coarse varieties, variously known as amphibole, chrysolite, fibrous talc, etc, etc, but which are not at the present time receiving attention. Later these may be taken up as the asbestos trade develops and demands for the coarser material in large quantities are made.

THE SMITH CREEK GROUP.

This group covers a huge outcrop of serpentine lying on the north-west side of Smith Creek, at a point twenty-seven miles distant from Casper and twenty miles distant from Big Muddy Station, on the Chicago and North-Western Railroad, the nearest shipping point.

This serpentine outcrop has a north-west and south-easterly trend or direction and has been exposed for a considerable distance but its full extent has not yet been developed.

The principal workings are located on the Serpentine Claims Nos. 1 and 2, with small openings on the other claims of the group to develop the extent of the deposit.

On the Serpentine No. 2 Claim there are a series of large

open cuts or faces which have shown up the asbestos bearing mineral for a width of over one hundred feet and show the total width of the serpentine rock to be several hundred feet. It is probable that other veins will be opened up here by continuing the work.

These quarry faces have been opened at various heights to provide working floors, equipped with track and cars to handle the rock economically, and a shoot has been built from the upper Cut to the storage bins at the proposed mill site below the cuts.

This shoot is substantially constructed, is 24" wide and 300 feet long, floored with iron plates and ample to handle a large tonnage as the pitch is very steep and material clears readily. The bin into which the shoot discharges, is 24'x30'x12' in size and of substantial construction.

The cuts here have shown a network of veins filled with asbestos, the fiber varying from a hairline to several inches in length, the usual small veinlets showing a width of from one-quarter to an inch in length, with the larger veins showing through the mass of small veinlets. The whole face forms an excellent milling rock and when cobbled and sorted will show a good grade of commercial mineral.

This asbestos is of the Chrysotile variety and of fine quality of fiber. Samples taken up at random and rubbed up in the hand made a soft wool like mass and readily twisted into threads like fine cotton, and even then showed remarkable strength and spinning qualities.

Below the shoot is the site for the mill and there is ample space for the economical construction and arrangement of a large plant to handle the products of the quarries above, without any loss of time or labor in handling the raw or finished material.

This mill should be of sufficient capacity to handle the product economically and separate the fiber into as many grades as the trade may demand, and be arranged to admit of ready enlargement as the demand increases and a larger tonnage is produced. There is a considerable quantity of the ore now available and during the construction of the mill, active work should be pushed to prepare as large an area as possible in the quarries above for active production as soon as the mill is running.

At a point immediately adjacent to the workings on Serpentine No. 2 Claim, a series of cuts have been opened on the Serpentine No. 1 claim and a similar condition shown. This ore will be worked and delivered to the shoot on the No. 2 Claim without difficulty and may be considered a part of this quarry.

It is recommended that all work on this group be confined to these showing for the present and that development be pushed with all possible speed.

Surface improvements here are as follows;

- 1 Boarding house 18'x 43', kitchen 16' square.
- 1 Bunk house 16'x 55'.
- 1 Barn 18'x 40', stalls for ten horses.

This will furnish ample accommodations for all the force and teams necessary for some time to come, and further buildings are not necessary at this time.

SMITH CREEK POWER PLANT.

It is recommended that steps be taken to secure rights to the water power in Smith Creek and that a survey be made at once to determine the best location for a powerplant to furnish electric power to the mine and mill above noted.

Inspection shows that this plant would be best located at a

point on Smith Creek below Otter Creek, the water being taken out of both creeks in a common ditch and directed to a point in the canon of Smith Creek, to be exactly determined by survey. There is ample water in these creeks to furnish all power required and sufficient fall may be had at the point indicated. A smaller power plant may be used at a point on Otter Creek about a half mile above Smith Creek, where a very large constant spring is situated in a convenient place but for the main plant, the Smith Creek location, as above, is considered the best.

There is no timber on the Smith Creek Group but it may be had on the adjacent mountains. Water is derived from Smith Creek and springs conveniently situated at the works.

A good road has been built to the property and freight may be hauled to Casper, 27 miles or to Big Muddy Station, 30 miles, over a good road in all seasons.

GASPER MOUNTAIN GROUP

This property has not been developed to the extent of the first group but is considered equally promising and should be put into active work at once.

The principal showing is noted on the easterly exposure or outcrop of the Casper Mountain Serpentine Belt and a shaft some twenty-five feet deep has been sunk on a vein of asbestos material. The conditions here are similar to those noted for the first group and the same small veinlets form a mass of milling and sorting rock of the same grade. The outcrop of this vein may be traced along the adjacent hill for a considerable distance and the indications are that a large body of asbestos is here contained.

The quality of the asbestos shown in the shaft and outcrops is similar to that of the other showings and samples treated in the same manner gave similar results. The surface mineral is somewhat stained with iron but this appears to be local and does not affect the deposit or extend into the main rock.

The Casper Mountain Group is reached by road from Casper, the distance around the road being about thirteen miles, and a direct road may be constructed over a much shorter route.

Timber is plentiful on Casper Mountain and the Creeks crossing the property furnish all the water required.

This property should be developed by sinking the present shaft and open cut work on the most promising of the outcrops to determine the full extent of the asbestos bearing formations at this point.

In case a machinery plant and mill is installed here, power from the Smith Creek Plant may be readily supplied to this works, as the direct distance is only about nine miles and the line may be constructed without any great difficulty.

The lode claims on Casper Mountain have not been developed and it is recommended that the development work, for the present, be confined to the shaft work above noted, rather than scatter the work over an unnecessarily large area.

SHIPPING FACILITIES.

These groups are both so situated that the matter of shipment of the product of the mills may be readily carried on and the present wagon roads of the country offer all the facilities necessary at this time, until a different means of transportation is required.

The Chicago and North-Western Railroad system runs through Casper and offers an outlet to all points. Other Roads are headed

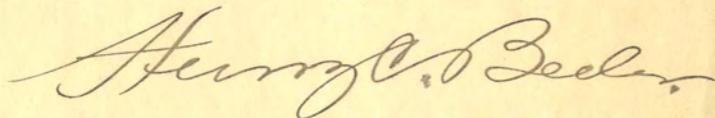
into the Central Wyoming territory and increase the readiness of distribution for all the products of this section.

SUMMARY.

It is considered that these groups are first class development propositions, that they fully warrant the expenditure of money necessary to open up and equip these properties and that the quality of the Asbestos shown is such that it will always command a ready market for this product.

There is a large and steadily increasing demand for Asbestos materials, and there is no reason why these properties should not be made to produce commercial asbestos at a commercial profit.

Respectfully Submitted,



State Geologist, Wyoming.

Date of Examination;

September 14, 15, 16, 1908.

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