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STATE GEOLOGIST AND
EX-OFFICIO INSPECTOR OF MINES.

The State of Wyoming.

Office of State Geologist.
Cheyenne.

SUPPLEMENTARY REPORT

ON

THE RAVEN GROUP.

NEAR

ENCAMPMENT, CARBON COUNTY, WYOMING.

DEVELOPMENT

The development on this group of claims, outlined in the former report on this property under date of August 10th, 1905, has been partially carried out, and at present is as follows;

Shaft	300	Feet.
Crosscut, south,	50	"
Crosscut, north,	30	"
Drift, east,	30	"

The shaft has been sunk as a vertical two compartment shaft, has been substantially timbered and is in good working shape at the present time for further development. A complete steam plant has been installed at the shaft, with air compressor and pumps, and the whole plant housed in a substantial shaft house, ready for future work at any time.

This shaft has passed thru the oxidized material noted in the previous report as showing the surface condition of the ores in this property, and now shows the sulphide form of iron of the variety known as "pyrhotite", and also, some small amounts of copper sulphides, variety "chalcopyrite", showing thruout the iron material. This copper is not yet showing in sufficient quantity to form a commercial ore of copper, but it is here noted that the conditions shown at other properties where the copper has come in and replaced the iron sulphides to a degree, forming a commercial ore of copper, are noted here and fully warrant this

work being actively pushed ahead, and it is considered that the showings made so far have justified the theory advanced in the previous report, "that these iron caps are underlaid with commercial ore of copper", and need but proper development to demonstrate it absolutely.

The shaft has been sunk vertically instead of following the ore as was intended, and is now in the hard quartzite of the footwall, the vein being some six feet south of the shaft, as shown by the crosscut in from the shaft south at the 300 feet level.

This vein shows about five feet of heavily mineralized material, mostly quartz and pyrhotite, with a lesser quantity of the same minerals impregnating the schist for an additional twenty feet to the south of the main streak in the vein, as shown by the south crosscut.

The drift run east is on the first streak and shows the same co condition for its whole length, with the mineralization apparently increasing at the east end of the drift.

Considerable water was encountered and made the progress of sinking the shaft both slow and costly, expecially after it had entered the hard rock of the last few feet.

SHAFT WORK.

It is to be regretted that the shaft had not been confined to the ore streak found on the foot wall, and now showing south of the shaft as above, and it is recommended that,when this shaft is continued, it be re-opened from the point where it left the vein, and run on the vein by a raise from the drift below, and follow the vein for its whole depth, as the purpose of sinking this shaft is to develop the ore regardless of whether it is an inclined shaft or not.

At any time in the future that it becomes necessary to straighten this prospect shaft or make it a large working shaft, this may easily be done from the present shaft, but now it is sunk solely for prospecting pusposes, as above.

As the ore material is much softer and more easily worked than the hard quartzite, the expense of sinking should be less, and the progress more rapid by following the ore, as well as develop the ore as the work progresses.

Before this is done, it is recommended that the shaft be further sunk as a winze on the vein from the south crosscut at the 300 foot level, for an additional depth of at least from 35 to 50 feet, as may be convenient or economical, without additional plant at this time.

With the present steam plant, the amount of water precludes any great depth being sunk, unless some arrangement is completed to handle this water, and at the time of this examination a drainage tunnel was suggested to your local representative, Mr. G. F. Hinton, as a means of handling this water, without any great expense for plant and fuel, and Mr. Hinton was instructed to determine by measurement and survey the length of tunnel necessary to tap the present drift south, at the 200 foot level. It is very probable that a contract can be let, to drive this tunnel at a rate not exceeding from five to eight dollars per foot, as it can all be done by hand work, and it is believed would be the best method of continuing the work at this point for the present Winter season.

To hoist the amount of water to the present surface, would involve the purchase of an additional boiler and installing same immediately, and necessitate the getting in of a great quantity of fuel for the Winter's work, and, as the season is now far advanced for beginning such work, it is recommended that this drainage tunnel be given serious consideration,

before any additional plant is decided on at this point, and in event of deep prospecting works from this shaft, it would be evident that the saving of this 200 foot lift on all waters hoisted in the future would more than pay for the running of this drainage tunnel, within a comparatively short time.

The adoption of this suggestion will necessarily depend upon the result of the survey, but it is submitted for your consideration, in order that all phases of the subject may be properly understood.

PROPOSED DRILL WORK

Referring to suggestions made that the further prospecting of this iron ledge be done by means of diamond drill, would state that this plan is gaining additional favor with mining men, when the formation is adapted to diamond drill work.

It is considered that this property may be profitably prospected in a general way by means of a suitably installed and equipped diamond drilling plant. To do this, it will be necessary to survey and determine accurately the exact situation and extent of the surface outcrops along the vein, the slope of the hill at various points where the drilling work would be located, as well as the dip of the formation and the depth of the surface wash at the drilling points, all of which must be given due consideration in locating the drill holes and determining the angle, at which the drill hole will be driven, As in this formation it will be necessary to drive the holes as nearly at right angles to the dip of the formation, as may be possible, to secure the best results.

To this end, it is recommended that an accurate survey be made, covering these points, as soon as possible. It is evident from the formation of the ground that these drill holes would all be located on the Southerly side of the ledge, and driven diagonally across the formation, at an angle to be

later determined, so as to secure the greatest depth, at the least drilling expense.

The present boiler and equipment could be used for this drilling work, as it is small enough to be moved, as much as will be necessary and will furnish ample power for this work. Only temporary buildings will be needed, and these need not be expensive or involve much time in their construction.

SURFACE IMPROVEMENTS

There are, at present, erected on the property all buildings and housings necessary for a considerable force, to carry on this work. Roads have been made to the property and shaft house, and but little surface work will be required to carry on either drill work, or the shaft work, as above outlined.

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After a careful inspection of the showings, made in the present shaft, crosscuts and drift, as well as the material from these workings, now on the dump, it is considered that that the showings made here have more than fulfilled the previous theory, that this iron ledge is underlaid with bodies of commercial copper ore, and that the further active exploration and development of these showings is more than warranted, by the results already obtained at the present shallow depth, and it is recommended that a definite plan of procedure be decided upon, and the work pushed with all possible speed, to fully demonstrate these ores, as soon as practicable.

Respectfully Submitted,

Henry O'Reel

State Geologist.

Date of Examination,
October 11, 1907.