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CONWEST EXPLORATION COMPANY LIMITED

To: Mr. F. M. Connell

Date: July 5, 1952

From: James M. Baker

Subject: Preliminary Report on the Cox Antimony  
Property, Becker Creek, Wheaton River Area, Yukon Territory.

Enclosures:

1. Whitehorse Sheet, C.G.S. Publication #2071 - showing location of group and route to group from Whitehorse.
2. Sketch Map of workings in vicinity of Antimony Showing, scale 1"= 30'
3. (a) Cross-section of vein zone, scale 1"= 50'  
(b) Cox' Mac Group - showing relationship of zone with respect to claims.
4. Whitehorse-Teslin Topo. sheet, scale 1"= 8 miles.

Introduction.

In early September, 1951, I examined the Cox Property, formerly known as the Becker-Cochrane, which from all reports, was the best stibnite occurrence so far discovered on Carbon Hill. At that time all that could be seen was a surface trench, cross-cutting a strong zone containing antimony mineralization. The old adit could not be examined as the portal had caved in, back for several sets. Government geologist's sampling of the face of this drift adit indicated an assay of 5.72% Antimony across 4 feet. Acting upon my suggestion, Mr. Cox succeeded in re-opening the portal, and retimbering where necessary during the late Fall and early Winter. When I was advised of this, it was thought that a further examination was warranted, and this was done during the last week of June. While I was in the section, I had hoped to examine some of the minor occurrences located on adjoining groups to the west. Unfortunately, there was too much snow to do this satisfactorily.

Location, Claims, and Accessibility

The group comprises eight mining claims, Mac, Mac #2 to #8 incl., located on the east side of Carbon Hill, Wheaton River Area, about 38 miles southerly from Whitehorse. The property itself is at 5,000 foot elevation, and the workings are at the head of the more southerly draw that runs into Conglomerate Creek, a branch of Becker Creek.

Entry into this area is made from Robinson which is 13 miles from Whitehorse on the Carcross Road, and then by a road that is commonly used by cars in good weather as far as the Wheaton River - a distance of 16 miles. At Wheaton River, the old wooden 3-span bridge has collapsed and it is necessary to ford the river which is a turbulent stream fed by glaciers. It is often impassable in spring and summer. At lower stages of water it can be forded by trucks, which then follow the old road up the valley. The road branches at Becker Creek, about 7 miles from the old bridge. A trail then extends up the creek to the property for a little over four miles.

At the time that the writer made the last examination, the Wheaton was crossed on an aerial cable and bosun's chair of a temporary nature, which Cox had constructed before the spring floods.

Due to the late season and run-off, it will not be before August that a truck can be used as far as the entrance to Becker Creek.

With a bridging of the Wheaton River, the terrain is such that it would be comparatively easy to build a good all-weather road right into the property.

Assessment Work Done

Cox has recorded over \$3700 of work against the claims, so that there is sufficient surplus of work to record for assessment requirements for the next three or four years.

Topography

The valleys are typically deep, steeply sided depressions, the walls of which arise abruptly 2000 - 3000 feet to the upland above. Between the valleys, high gently rolling stretches of an upland surface occur. The latter constitutes a part of an old plateau

General Geology

Reference: C.G.S. map # 60Z, 1917 by D.D. Cairnes.

The Wheaton district is situated along the eastern edge of the Coast Range, and practically the entire area is underlain by the granitic rocks of the Coast Range batholith. In the eastern portion of the district, which includes Carbon Hill, there are numerous remnants of the former roof of this igneous mass. The geology is further complicated by later invasion of Tertiary (?) intrusive rocks, and so have cut and buried the older rocks in places.

It is also interesting to note that all the stibnite occurrences in the district appear to lie along a so-called "break" (approximately N60°W) over a distance of about seven miles, of which Carbon Hill is about the centre.

Specific Geology

The stibnite mineralization occurs in a strong shear or fault zone in a roof pendant of highly altered volcanics - probably originally of andesitic composition - which appears to be partially covered by an extrusion of younger porphyritic Rhyolites. The latter also intrude the greenstones in the form of dykes. The greenstones have a vertical depth of at least 800 to 900 feet - as observed in the canyon immediately to the east of the showing.

As the hill is essentially covered by talus debris and alluvium, it is impossible to state just what the relationship of the rhyolites have either to the shear zone or to the mineralization. It would also be interesting to speculate on the change of character of the shear zone when it enters the granitic rocks below. However, as all the other stibnite occurrences are in these granitic rocks on the west side of the Hill, I think that the mineralization will continue into the granite.

The zone is a very strong one; strikes N 50° to 60° W; has a practically vertical dip. It appears to be at a minimum of 8 to 11 feet wide, as indicated in the adit and surface trench. Although neither wall is actually observed, there was some evidence that the north wall had been reached in the surface trench. Mineralization has been indicated for approximately 300' along strike.

The zone is composed of highly sheared material (greenstone), with gouge and some graphite, into which is injected seams and patches of solid vein matter. The latter is quartz and stibnite in varying proportions, from quartz with large scattered crystals of stibnite to relatively solid masses of the antimony sulphide. These seams vary from  $\frac{1}{2}$  inch up to about 1 foot in width. The zone is somewhat oxidized - except for the massive seams of stibnite - and there are varying amounts of the "red sulphide" (Kermesite), and the other orange and brown coloured oxides of antimony (cervantite, etc.). Because of the oxidation it is very difficult to determine whether there was much dissemination along the shear planes in the sheared material or was confined exclusively to the quartz seams and patches. It is my impression that the latter is essentially the case, and the ore will have to depend upon the frequency of these in the zone.

Although, as stated above, neither wall is actually exposed, I think that the massive and quartzose seams of stibnite may be more or less concentrated near either or both walls of the shear. The sampling results of the adit and surface trench would appear to bear out these impressions.

In my opinion this zone is well worthy of further investigation; and due to the strong, persistent character of the shear, there is a strong possibility that a substantial tonnage, particularly for stibnite ore, may be developed. The preliminary assays indicate that the tenor of the concentrating ore might well be around 4 to 5% antimony, with a relatively small arsenic content, 0.3%, and negligible zinc and lead. This opinion is, of course, predicated on the assumption that the results of the tests for various other impurities will be satisfactory. That is to say, that there will be no trace of either tin or tungsten, which metals would make the ore unsaleable, according to British Metals Corporation; no appreciable nickel, as penalties are imposed if over 0.075%.

Sampling Results

(See the results of individual assays on sketch plan accompanying report)

Although there was a certain amount of the oxidation products of antimony, as both the surface trench and adit show the effect of surface weathering, I do not believe that the assay results were seriously affected by their presence. They are not likely to affect the results by more than 10%.

Sampling Results (Cont'd)

The results from the surface trench are from samples taken by me last year. No additional samples could be taken this year, as the trench is now caved, and buried completely.

The adit was sampled at the face, and back samples were taken at 10-foot intervals to the timbered part of the drift-adit.

An average of the samples taken in the adit, shows 4.69% Sb. over a true width of 5.1 feet, for a length of 40 feet. There is a suggestion that the drift may be following along the north wall of the zone, and therefore the south part of the drift in several places may represent the more or less barren part of the shear; if this should be the case then we might expect a duplication of values on the south side of the zone, as indicated in the surface trench, but not exposed in the adit. The average content of antimony along this assumed north wall shows 5.92% over 3.8 feet.

In mining the zone, all the material would have to be taken.

A weighted average of all the material sampled, both in adit and trench, shows 4.27% Sb. over a width of 6.0 feet.

Summary and Recommendations

This zone warrants further investigation in view of the strong, persistent character of the shear, and the possibility of developing a substantial tonnage of stibnite ore. Preliminary sampling indicates that the concentrating ore tenor may be between 4 to 5%, with relatively small arsenic, lead, and zinc. This is assuming, however, that the tests for other impurities, which would make the product unsaleable, are satisfactory.

Further exploration of the zone should be done by means of the diamond drill - using AX equipment.

The property is quite accessible - only 30 miles from the Carcross-Whitehorse Road. The terrain is not too difficult to build an all weather road with excellent grades into the property.

A number of physical hazards in this preliminary exploration can be largely overcome if we are well organized, and select carefully our time for such work.

AppendixPlan of Attack

Due to the very late season this year, it is very doubtful whether we could get any diamond drill equipment into the property before the middle of August, (we should have to wait until the water was low enough to ford on the Wheaton River). As we would be drilling at an elevation of 5000 feet, it is very questionable whether we could operate the drill under summer working conditions much beyond the middle of September. In addition I have some doubt as to whether there will be sufficient water for drilling at the adit level, and should this be so then we should have to pump water from the creek below - a vertical distance of about 900 feet. At the present time, of course, there would be plenty of water for drilling near the workings, but much of it will dry up by the end of August.

In view of these working conditions, I feel that if we go ahead and do some work, we should make preparations this Fall, by taking the heavy equipment in, bulldozing the diamond drill sites, and then wait until this time (or early June) to start operations, and so be assured of at least three months of suitable summer working conditions.

In regard to the drilling, we may experience some difficulty in obtaining a good core recovery. It will be necessary to use AX equipment. However, I believe that the quartzose and massive stibnite seams should core well, so that a good idea of the frequency and type of mineralization can be determined.

These and many other minor problems will have to be discussed and thrashed out later, but certainly unless we can take full advantage of the weather, and have everything organized, this investigation will prove more costly than it should.

Respectfully submitted,  
"James M. Baker"