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ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: ABC GROUP

ALTERNATE NAMES:

HOBBY 1-12 UNPATENTED CLAIMS  
JUSTEM 1-8 UNPATENTED CLAIMS  
WINONA 1-8 UNPATENTED CLAIMS  
WATTS 1-3 UNPATENTED CLAIMS  
SHORTY 1, 3 & 4 UNPAT. CLAIMS  
WOOLEY  
ARGONAUT GROUP  
BI-METALLIC GROUP, UNPATENTED  
COMSTOCK GROUP, UNPATENTED  
KATHERINE, UNPATENTED  
LOWER WOOLEY  
HONEY BEE GROUP

PINAL COUNTY MILS NUMBER: 333A

LOCATION: TOWNSHIP 4 S RANGE 13 E SECTION 15 QUARTER NE  
LATITUDE: N 33DEG 05MIN 15SEC LONGITUDE: W 111DEG 00MIN 02SEC  
TOPO MAP NAME: GRAYBACK - 7.5 MIN

CURRENT STATUS: DEVEL DEPOSIT

COMMODITY:

COPPER OXIDE  
SILVER OXIDE  
GOLD LODE  
COPPER SULFIDE  
MANGANESE

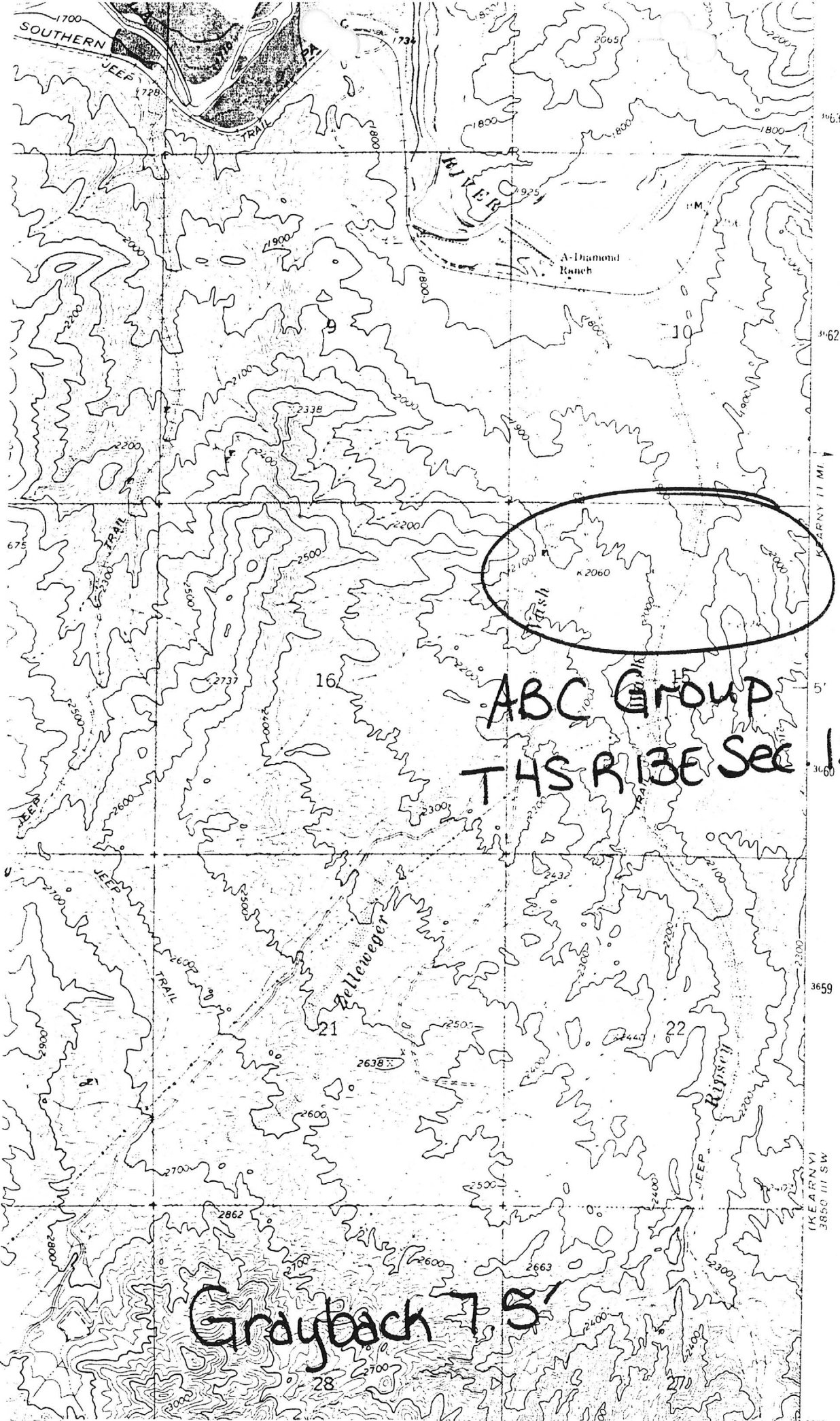
BIBLIOGRAPHY:

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ADMMR ABC GROUP FILE  
AEC 172-480, GILA CO. PRELIM. RECON RPT. P.23  
AZ GEO SOCIETY 1994 SPRING FIELD TRIP GUIDE  
GRANGER, H.C., & R.B. RAUP, RECONN. URANIUM  
DEPOSITS IN AZ. USGS BULL. 1147-A, P. 38  
ADMMR FILES  
SEE: ADMMR WOOLEY MINE FILE

CONTINUED ON NEXT PAGE

CONTINUATION OF ABC GROUP

SEE: ADMMR HONEY BEE FILE  
CLAIMS EXTEND INTO SEC. 14, 16, 33



ABC Group  
THIS RISE SEC 15

Grayback 7.5'

A.B.C. GROUP

PINAL COUNTY  
MINERAL CREEK DISTRICT  
T4S R13E Sec. 15

Pinal County MILS Index #333A

AKA: Hobby 1-12; Justem 1-8; Winona 1-8; Watts 1-3; Shorty 1, 3, 4; Argonaut Group;  
Bi-Metallic Group; Comstock Group; Katherine; Lower Wooley; Honey Bee Group; Wooley

USGS Bull. 1147-A, p. 38 - Shorty Claim & Wooley No. 1 Claim

AEC 172-480, p. 23. Uranium 0.048 - Honey Bee & Shorty Groups

2 Maps - The Argonaut, Bi-Metallic & Comstock Groups of Mining Claims near Kelvin,  
Pinal County, AZ

1 Map - The Hobby, Winona, Watts, Justem & Shorty Mining Claims, Riverside Mining  
District, Wooley Station, Pinal County, AZ

1 Map - Clipper Shaft Map

2 Maps - Geoogy Claim Maps

The above maps may be found in drawer of Map Cabinet  
Maps A.B.C. Group in Large Map Cabinet - Section 4 - Rolled up

Grayback 7.5' Quad (included in file)

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine Wall-Hollenbach Claims Date March 19, 1959  
District Mineral Creek District, Pinal County Engineer Lewis A. Smith  
Subject: Mine visit

Operators: ✓ Leo Wall, Box 144, Ray, Arizona  
✓ Ira D. Hollenbach, " " " "

Property: 12 unpatented claims (Hobby, Watts, Justin, Shorty and Winona Groups) 7 miles S of Ray, Arizona, 3 miles from Ray-Hayden Highway.

Work: The work on these claims is mainly covered in a report by Hale C. Tognoni.

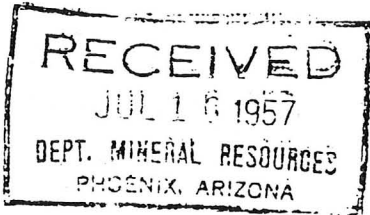
Geology: The area is largely composed of granitic rocks cut by diabase dikes and roughly sheared in an EW direction. The shears are well apart (150-250 feet) and roughly parallel. In between the shear fractures the granite does not appear to be strongly fractured or mineralized. The shear areas due to silicification are more resistant than the intervening rocks and consequently stand up well above as ridges. The shears show strong limonitic impregnations as veinlets and blebs. This limonite indicates strong iron (Pyrite) with some copper was present prior to oxidation. The better indications appear to be associated with the diabasic intrusives which appear to be scattered widely over the area. Hale C. Tognoni <sup>1/</sup> suggested, after examining the claims, that the iron gossans may contain copper-iron sulphides in depth and that they could be enriched by supergene solutions. This may be true, but the limonites indicate a high iron copper ratio. One porphyry dike shows on the Watts Claim. In places on the Hobby 5 showings of low grade uranium were found, but none of these were commercial.

At present the main oxidized copper minerals are malachite and chrysocolla with some azurite. Calcite or siderite, and silica are accessories, other than the iron oxides.

A shipment of 36 tons assayed 4.16% Copper, 0.90 oz. Silver, 4.3% Alumina, 31.4% Silica, 10.9% Iron, 8.9% Lime, and 4.0% Sulphur. The car paid very little because of haulage charges.

1/ Geologic Report on Hobby, Watts, Justin, Shorty and Winona Mining Claims, Dec. 31, 1957.

DEPARTMENT OF MINERAL RESOURCES  
State of Arizona  
MINE OWNER'S REPORT



Date July 14, 1957

1. Mine: Hobby, Justen, Minora, Shorty, Watts, Coverage & Katherine mining ~~ch~~ claims.
2. Location: Sec. 14, 15, 16 Twp 4s. Range 13 East Nearest Town Kelvin  
Distance, T. WO. miles Direction N.E. Road Condition STATE--graded--- good
3. Mining District & County: Riverside & Wooley mining dist. Pinal county
4. Former Name of Mine: Lower Wooley
5. Owner: Joseph J. Spletzer & Robert Worthington  
Address: Star Route, Box 6---Ray ARIZ.
6. Operator: Spletzer & Worthington  
Address: Sane
7. Principal Minerals: Copper, gold & silver
8. Number of Claims 40 Lode  Placer  
Patented Unpatented
9. Type of Surrounding Terrain: Foothills on southwest of Tortilla range  
slope
10. Geology & Mineralization: Pre-cambrian age--granites, diorites, diabase  
quartz monzonites and granitic porphyry. At least two parallel  
faults (shear zones) traverse the claims from east to west.  
Surface outcrops contain considerable iron oxide, some iron  
sulphide, small amt. of manganese, copper oxides, copper sulphides  
gold and silver.
11. Dimension & Value of Ore Body: Unknown

12. Ore "Blocked Out" or "In Sight" Only slight development has been done to date Surface outcrops in most instances have been highly leached, except for siliceous dikes with an iron content. Surface outcrops show some residual copper, however good commercial ore has been exposed at slight depth at several points.

Ore Probable Geologic report recommends core drilling program to prove existence of ore body at depth. It is believed that secondary enrichment lies at one to two hundred feet in depth. Shear zones vary from several feet to hundreds of feet in width and are up to three miles in length.

13. Mine Workings—Amount and Condition:

No.	Feet	Condition
Shafts.....	Numerous old	shafts, drifts and other workings
Raizes.....	Some accessible	some inaccessible. We have a geologic report of I.C.I.O. showing values at that time.
Tunnels.....	Most workings	are shallow and not extensive.
Crosscuts.....	.	
Stopes.....		

14. Water Supply: Claims are about one and a half miles from Gila River

15. Brief History: These claims have been worked intermittently for the past fifty years by small operators who did not have proper capital to sufficiently develop the property. It has been worked primarily for the gold, silver & copper in high grade vein formations. At the present time the development work consists of exposing better grades of ore at slight depth.

16. Signature:

*Joseph J. Spletzer, Jr.*  
*Robert Worthington*

17. If Property for Sale, List Approximate Price and Terms: Estimated value of the claims is \$500,000.00 --- Terms \$2000.00 down payment or option and \$300.00 per month until property proven. Balance cash payments or royalty basis.



GEOLOGIC REPORT ON THE HOBBY, WATTS, JES  
SHORTY AND WINONA MINING CLAIMS

By  
Hale C. Tognoni, Registered  
Professional Engineer #2048

1157

GEOGRAPHIC LOCATION

The claims in question are located in Southeastern Arizona about 7 miles South of the copper mining town of Ray, Arizona, 18 miles Northwest of Hayden, Arizona and 25 miles East of Florence Junction. The Southern Pacific Railroad from Hayden to Florence Junction and the Gila River pass just North of the claims. A gravel road leaves the Ray-Hayden highway at Kelvin and traverses the claims as it goes to Florence, Arizona.

The claims lie South of Mogollon Rim about 100 miles. The topography generally slopes to the South from the Rim and the small mountain ranges gradually disappear into the plains which surround Phoenix and Florence. The claims are located in the low rolling foothills just North of the plains area. Specifically they are located in the foothills on the Southwest slope of the Tortilla Range, from which the Ripsey and Zelleweger Washes run into the Gila River to the North.

The Hobby claims lie in the Eastern half of Section 14, the Watts claims in the Northeast quarter of Section 15, the Justem and Winona claims in the East half of Section 16, and the Shorty claims in the West half of Section 15, all in Township 4 South, Range 13 East, G&SRB&M, in the Riverside Mining District, Pinal County, Arizona.

The entire area is described by Ransome as composed of Pre-Cambrian granite and coarse diorite with a few diabase dikes crossing them. Remnants of Gila conglomerate occur on some of the hills and can be seen in the Ripsey and Zelleweger Washes. At least two parallel faults (shear zones) traverse the claims from East to West.

PURPOSE OF REPORT:

Upon my first visit to the ground on a "quick look" basis, I found no developed commercial mineral. I felt that the large shear zones crossing the claims, however, would merit further investigation because of the presence of mineralization in the surface outcrops. These outcrops contain considerable iron oxide, some iron sulphide, small amounts of manganese, copper oxides, copper sulphides, gold and silver.

PROCEDURE, SAMPLES TAKEN, AND PREVIOUS REPORTS:

On my latest visits I spent four days on the property and made a Brunton and Tape survey of some of the claims in each group in order to locate the groups with relation to one another and in order to establish some relationship between the mineralized zones on each group. In addition 20 samples were taken and as much geology studied as time would permit.

U.S.G.S. Professional Paper No. 115 (Copper Deposits of Ray and Miami, Arizona, by Frederick Ransome) was studied.

In 1910, Smith and Lewis made a report on the A.B.C. and Comstock groups lying approximately where the Winona, Justem, and Shorty claims lie today. A correlation of that report with this one should add some facts to the knowledge of the area.

A visit with Mr. Flagg of the Department of Mineral Resources, who covered this area in his younger days, provided information on the now inaccessible workings.

The following samples were taken during the four days that it took mapping the claims. The locations from which these samples were taken are indicated on the map submitted as a part of this report.

LIST OF SAMPLES TAKEN ON THE WALL-SPLETZER  
PROPERTY, BETWEEN JANUARY 30 and FEBRUARY 14, 1957

Assays on samples are by Rare Metals Corporation of America, & were completed on March 12, 1957.

Sample No. 1 was taken on February 4, 1957, across a 3' wide vein in shear zone Mn & Fe on Justem #6; No. 2, taken same date on Justem Nos. 6 & 7.

<u>No.</u>	<u>Rare Metals No.</u>	<u>Locale</u>	<u>Cu</u>	<u>Au</u>	<u>Ag</u>	<u>Mn</u>	<u>U308</u>
1.	54-22	Across vein 3' wide		0.003	0.20	3.79	
2.	54-23	Across face 4' wide	0.36	0.04	0.15	1.05	

Samples Nos. 3 through 10 were taken Feb. 6, 1957, on Hobby Nos. 6 & 7.

3.	54-24	19' cut across altered zone	0.03	0.003	Trace		
4.	54-25	17' cut across altered zone	0.01	Trace	0.10		
5.	54-26	15' cut across altered zone	0.04	0.003	0.20		
6.	54-27	4' cut across shear zone	0.05				
7.	54-28	16" Fe stained vein	0.07				
8.	54-31	Grab sample rock pile near shaft	2.79	0.025	3.00		
9.	54-29	Grab sample, rock pile near shaft	1.34				
10.	54-30	27' cut across shear zone	0.10	Trace	0.20		

Samples Nos. 102, 103, 104 and 105 were taken on Hobby Nos. 5 & 6 mining claims 10 Feb. 1957.

102.	54-12	4' cut across shear zone	0.26	0.003	0.40		
103.	54-13	5' cut across face	0.09	0.005	0.30	1.68	0.003
104.	54-14	6" across Mn veinlet	0.03	0.005	0.30	2.17	0.005
105.	54-15	4" across Mn veinlet	0.11	0.19	Trace	8.27	0.045
106.	54-16	3' cut across qtz. vein	0.09	0.003	Trace		
107.	54-17	8' cut across face	0.02	Trace	0.040		

Samples Nos. 108, 109, 110 & 111 were all taken on Feb. 14, 1957, on Watts Nos. 1 & 3 mining claims.

108.	54-18	20' cut across dump	0.04	0.003	0.40		
109.	54-19	12' cut across dump	0.03	0.003	0.40		
110.	54-20	14" cut across vein	0.04	0.003	0.30		
111.	54-21	8' cut across shear zone	0.08	0.003	0.30		

GEOLOGY MAP:

On a print of the accompanying map, the geology was drawn in and interpretation made in order to show what is believed to be the structure pattern of the area and general location of the shear zones. The interpretations are based on reconnaissance type study. To establish the exact location and extent of these mineralized zones at least a month of surface geological study would be necessary.

IRON OUTCROPS:

Generally throughout the immediate area surrounding the claims and on the mining claims, the large shear zones are filled with a siliceous material with an iron content. This material being

more resistant to erosion protrudes above the surrounding area. The mineralized veins or shear zones have been the subject of most of the prospecting in the area. It is entirely possible that at one time these shear zones, sometimes called "iron dikes" or Gossans, contained greater amounts of copper sulphide which has leached out and been redeposited at the water table. This possible secondary enrichment at depth of primary mineralization lying within the dikes merits more study and drilling.

OLD SHAFT REPORTEDLY WITH GOOD GOLD ASSAYS:

Mr. Flagg of the Department of Mineral Resources tells me that in an old shaft along the East side of Section 16, near Justem #4, there were some very good gold showings. This shaft has been filled by floods. Directly West of the approximate location of this old shaft is a 25-foot wide shear zone outcrop, which merits investigation for higher gold values.

COPPER SILICA POSSIBILITY NORTH OF THE JUSTEM CLAIMS:

Mr. Flagg told me that during the period following the first World War in which there was a shortage of flux material for the copper smelters, there existed in Section 9 a deposit of low-grade copper ore, with a high silica content. He stated this could have been sold to the smelter at Hayden for flux, but title to the claims was not then clear. I would recommend that the claim owners search the surface of the ground in that section for old claims and for the deposit Mr. Flagg referred to.

URANIUM INDICATIONS:

Scintillometer readings over the ground seldom had higher than a background count. The best counts were near and in the location hole on Hobby No. 5. This was along manganese veins in the granitic felsite. I took samples Nos. 103, 104 and 105 at these points in order to obtain a chemical analysis. None of the samples indicated commercial grade uranium.

COPPER SHOWING BEST IN GRAB SAMPLES TAKEN FROM HOBBY NO. 6 SHAFT DUMPS:

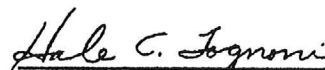
The assay returns show that the best copper assay was the grab sample from the Hobby Shaft No. 2. On the Hobby No. 6 claim, there are two shafts the dumps of which indicate they might be as deep as 100 feet. Through these two shafts runs one of the shear zones with iron and copper mineralization. On these dumps I sampled the smaller piles of sorted material. This material was probably mined from the shear zone at depth. One of these samples ran 2.78% copper and is some indication a better grade of copper may exist at depth. Perhaps drill holes crossing the shear zones at different elevations near this shaft would reveal better grades.

RECOMMENDATIONS:

In order to establish the copper potential of the deposit, I recommend a detailed surface geology mapping program and aerial photographing followed by a preliminary drilling program.

The surface mapping should precede the preliminary drilling program in order to have as much information as possible available for deciding upon drill sites. This drilling program should at least cross the shear zones at the 100' and 200' depths and perhaps continue until it is determined that the level reached is equivalent to that of the water table at the time of the secondary enrichment.

Respectfully submitted,

  
Hale C. Tognoni

Arizona Registered Professional Engineer  
#2048, Proficiency Mining Engineering.



*Old Report*

REPORT OF EXAMINATION AND SURVEY OF THE A.B.C. GROUP

OF MINING CLAIMS

NEAR

KELVIN, PINAL COUNTY, ARIZONA

\* \* \* \* \*

In accordance with our proposal, we have made an examination and survey of the Argonaut, Bi-metallic and Comstock group of mining claims, locally known as the A.B.C. group, near Kelvin, Pinal County, Arizona and report as follows:

PROPERTY:

This property, consisting of twenty-eight full mining claims and two fractions (or thirty in all), is in the three groups known as the Argonaut, Bi-metallic and Comstock.

✓ The Argonaut is composed of the Legal Tender Nos. 1 & 2; Gold Standard Nos. 1 & 2, Contest, Argonaut, St. Lawrence, Daisy, Savage, Tomboy, Liberty, Columbia, Clipper, Teddy, Best and Belcher and Ratler, sixteen full claims.

✓ The Bi-metallic group is composed of the Gold Dollar, Bi-metallic, Gilded Age fraction, three full claims and one fraction.

The Comstock group is composed of the Comstock, Hindu, Ophir Nos. 1 & 2 Monitor, Monitor Fraction, Golden Eagle Nos. 1 & 2, American Boy Nos. 1 & 2, nine full claims and a fraction.

The Argonaut and Bi-metallic groups join on their end lines and have the same mineralogical formation as to lodes and veins. The Comstock group, lying parallel to the Argonaut on the south, has a separate and distinct system of lodes and veins characteristic of itself alone. The combined area of these three groups is about 580 acres.

LOCATION:

These combined three groups are located on the Gila River in the eastern part of Pinal County, Arizona in what is known locally as the Riverside Mining District. The Phoenix and Arizona Eastern Railway running from Phoenix to Winkelman along the Gila River passes through the Rattler claim, "Wooley siding", a station on said railway being located about three hundred yards east of said claim. Kelvin is about two and a half miles east of the property. The mines of the Ray Consolidated Copper Co. are four miles north of it. The Kelvin Sultana Copper Co., and the Kelvin Tunnel Co., with other mining properties, adjoin it on the north and east.

TOPOGRAPHY:

This mining district lies in the heart of the mountain district of Arizona. The A.B.C. group is located in one of the low-lying, parallel ranges of the main Pinal range, extending in a north-westerly and southeasterly direction. This range is about 5 miles long and is more or less mineralized throughout its entire length. From close observation and examination, the group covers the most promising mineral outcrops on the range. The Gila River, at one time in past geologic history, flowed at a much higher elevation than at present as indicated by the great banks of heavy gravel overlying the eastern end of the Argonaut group. Over the entire group, all evidences of the Paleozoic formations have been removed by erosive agencies exposing the Cambrian and Pre-cambrian schists, quartzites, porphyries and granites.

The eastern portion of the Argonaut group is more or less concealed beneath these aforementioned gravels and a blanket formation of calcareous conglomerate, similar in character to the Gila Conglomerate so common to the formations around Kelvin and Globe. Indications, however, point to the extension of the Argonaut, Bi-metallic lodes or veins underneath this formation. In elevation the property ranges from nineteen hundred feet to twenty-three hundred feet and is very much cut up by ravines and washes. These run parallel in a general way with the lodes and dikes which, being more resistant, form the ridges and prominent physical features of the property.

GEOLOGY:

The country rock of the A.B.C. group is pegmatite and granite. These rocks are ruptured and shattered on the A.B.C. group in two directions principally; the first having a general east-west trend; the other obliquely across the first in a direction of about North sixty-degrees West, and are intruded with dikes of Diorite, diabase, dacite and porphyry.

The main mineral lodes occur in the east-west series of veins while cross fissures seem to have derived their mineralization from the main faults. The entire Argonaut Bi-metallic group consists of an intensively shattered or crushed mass of schistose porphyries, dacite and altered country rock showing abundant evidences of mineral contest in all parts of the property.

Two prominent fault planes are in evidence with pronounced shattering and fissuring indicating extensive and long continued movement. The northerly one, herein designated as the Gold Bug fault, passes through the north side of the Argonaut Bi-metallic group along the boundary line to the Legal Tenders and Gold Standards.

The southerly fault, which will here be designated as the Clipper, passes through the center of Columbia, Clipper and Gilded Age claims. These two faults, about one-half-mile apart, embrace the major part of the Argonaut Bi-metallic groups.

The Northeasterly-southeasterly cross fissures occur mainly between these two great faults, and are no doubt due to lateral movement of the faulted blocks at different points.

The shifting of these blocks, with the resultant pressure and intrusion of dikes of diorite and porphyry, has so shattered the country rock between these faults as to form a zone covering the entire Argonaut, Bi-metallic groups, particularly susceptible to mineralization from the mineralizing solutions.

This entire zone between the Legal Tender and the Columbia-Clipper fault is fissured and covered with iron croppings containing gold, silver, and copper. The copper at the surface is in the carbonate form, the sulphide beginning to show at moderate depth.

Numerous drifts, crosscuts, tunnels, shafts and assessment holes have been dug all over the property on the numerous lodes and fissures showing values at all points.

Through the Legal Tender claim runs the wide quartz-porphry dike schistose in character, which is bounded on both its north and south contacts by granite. On both contacts are mineral lodes carrying values in gold, silver and copper. The northerly lode is very pronounced through the two above named claims and dips south seventy degrees; very little development work has been done on this lode.

The southerly lode shows pronounced iron croppings throughout the entire length of the Legal Tender. It widens to a width of over one hundred feet of very much shattered and altered country rock filled with mineralized vein matter showing characteristic green carbonate stains. This lode dips north. A Vertical shaft about 115 feet deep, well timbered and equipped with double Cornish whim, has been sunk in a quartz-porphry dike at a point about 700 feet from the east end and 100 feet from the south side line of the Legal Tender No. 1. This shaft was partly filled with water and the bottom could not be reached. At a point about 40 feet from the surface, a small stringer vein about 12 inches wide was encountered with assayed \$24 in gold and \$1.25 in silver. This shaft is designated as the Gold Bug. Between the quartz-porphry in which the shaft is located and the granite on the south occurs, another lode dipping north 53 degrees having a width from ten to thirty feet. This lode shows heavy iron cropping for over 500 feet containing free gold which gives good colors in panning.

This lode is but an offshot of immense iron cappings on the Gold Standard Nos. 1 & 2. That on No. 1 is over 600 feet long by from 100 to 200 feet wide while on the Gold Standard No. 2 shows prominently for a length of over 800 feet by a width of from 200 to 250 feet. The connection between these two croppings is covered with wash and decomposed rock, yet indications point to their being one and the same body of ore-bearing rock.

Through the Argonaut, St. Lawrence, Gilded Age and Bi-metallic claims run two large fissure veins parallel to the Gold Bug and Clipper veins; these veins are separated by about 130 feet of dacite and have a width of from forty to forty-two feet. They carry a high percentage of iron with gold, silver and copper; the copper showing at the surface as green carbonate, changing to sulphide with depth.

The Clipper fault plane covers practically all the Liberty, Columbia and Clipper claims. On these three claims, together with the Tomboy and Savage, the crushed, fissured and shattered rock reaches its highest development. On the Liberty claim, the Clipper Ledge measures from 80 to 120 feet in width. The same ledge on the Columbia is largely covered but at a point about 450 feet from the east end line, it has a width of 82 feet. It shows up prominently on the surface for over 4000 feet and can be traced for over a mile beyond the eastern end line of the property.

The cross fissuring above mentioned shows to the greatest extent on the Tomboy and Savage claims running S 60 W into the St. Lawrence.

The Comstock is almost entirely in granite from the south line of the Argonaut group to the south line of the Golden Eagle claim. The most prominent mineralogical features are found on the Comstock and Hindu claim and on the American Boy Nos. 1 & 2.

A huge gossan capping on the American Boy No. 1 for a distance of 900 feet from its western end line width, a width of from 60 to 80 feet. No development to speak of has been made here. There are plain indications of former copper content which has been leached out and carried on.

The same condition occurs on the Comstock and Hindu claims where a gossan capping indicated true fissure vein having a width from 95 to 100 feet. Some development has been done here; a shaft having been sunk on the east end of the Comstock to a depth of 95 feet. This ledge shows throughout its entire length copper carbonates. Small silver and gold values were obtained in the shaft. This ledge has aporphry hanging wall with the dip being to the north at an angle of 65 degrees.

On the Orphir No. 2 are shown some fine iron croppings containing copper. An assay taken from a 20 feet shaft near the west end line of this claim gives copper content of 7.2%. About 50 feet north of this ledge is a large gossan capping about 200 feet long by 30 feet in width.

This group of claims will probably require quite extensive outlay for exploration and development and should be held for some future consideration.

#### DEVELOPMENT:

This property has been held by its present owners for a period of 12 years during which time a vast amount of work has been done and money spent which is of little permanent value in any comprehensive plan of development beyond maintaining a title to the property.

On the Legal Tender, very little work has been done beyond the sinking of the Gold Bug shaft. On the No. 2 claim, a 10 foot assessment hole has been sunk having a dip of 85 degrees south in a shattered ledge of a width varying from 40 to 100 feet. This has fine copper indications.

The Gold Standards 1 & 2, with the St. Lawrence and Bi-metallic, have been quite extensively prospected and give good assay values at all points. Besides the inclined shaft heretofore mentioned on Gold Standard No. 1, a shaft 48 feet deep has been sunk on the great iron cropping immediately south of Legal Tender No. 1. This shaft dips 75 degrees under Legal Tender No. 1 and has about 150-200 tons of iron ore on the dump showing evidence of former copper content. An assay taken from here gave silver 4 oz., gold \$7.20, copper 2%, metallic iron 30%. The Gold Bug shaft will probably strike this lode at a depth of 300 feet.

The development on the St. Lawrence consists of a tunnel on the main St. Lawrence ledge about 175 feet long on a vein of oxidized iron ore. A Winze was sunk in this tunnel to a depth of 35 feet which was full of water at the time of examination. Above this tunnel and to the west of it, a shaft 40 feet deep with a dip of 73 degrees south was sunk from which some rich ore has been ob-

tained. A tunnel assay 46 feet from the portal gave silver 6.6%, gold 40, copper 1.6%; while an assay taken from a sample at the shaft gave 6.6 oz. silver, 10 gold, and 8% copper.

An assay taken from the 46 foot shaft on the Bi-metallic claims gave 4.6% copper. This shaft is sunk in an extension of the St. Lawrence ledge to a depth of 46 feet.

The development of the Liberty, Columbia and Clipper claims, on the great ledge or shattered zone running through them, show the most promising for the comparatively shallow depth attained for any part of the property. This great zone of crushed ledge matter is almost vertical and has three shafts sunk on it all showing gold, silver and copper values and practically the same formation throughout its entire length. On the Liberty claim is a shaft 40 feet in depth in the center of the ledge which is here 48 feet wide.

On the Columbia a vertical shaft to a depth of 76 feet has been sunk in a ledge 82 feet wide, while on the Clipper claim a vertical shaft, having reached a depth of 76 feet, is now being sunk in a ledge showing on the surface with a width of 52 feet. This shaft was started at a width of 40 feet in the soft ledge matter which at depth of about 40 feet has slabbed off until from there to the bottom the shaft is now 8½ feet wide in a finely crushed and altered vein matter carrying good values in gold, silver and copper. The entire eight and one-half feet is stained with salts of copper. A sample entirely across the ledge as exposed was taken, gold \$6.40, silver 14.56 oz., copper 4.17%, having a total value of \$25.97. This shaft has already reached the water level, the water coming up through the bottom and standing permanently about 30 feet from the surface. This water is bitter from salts of sulphur, iron and copper in solution.

Adjoining the Clipper and Columbia on the north are the Tomboy and Savage claims. These claims cover what is probably the most remarkable example of shattered and mineralized formation to be found in this region. This formation covers an area of about 30 acres in the shape of a parallelogram embraced within these four claims extending from the Clipper to the Columbia shaft, about 1600 feet from east to west, with a width of 800 feet north and south. This area is literally covered with a network of ledges and dikes showing croppings of homatite, copper stain and gossan from one end to the other. An assay from a surface sample of the homatite cropping on the Savage claim assayed \$1.80 gold, and .32 silver.

#### CONCLUSION:

The A.B.C. group taken as a whole has great merit and is worthy of your most serious consideration. There are spectacular formations or values in evidence on the property. The indications all point to the probable existence of ore bodies of commercial grade which should be opened up along a line of careful development under the direction of competent men. Two points present themselves for immediate consideration: viz, the Gold Standard group through the Gold Bug shaft and the Clipper group through the Clipper shaft. This shaft should at once be equipped with machinery or sufficient capacity to sink to a depth of 300 to 500 feet according to the circumstances arising during sinking. Ample provisions should be made from the start to handle the water that will be met with as this ledge is in soft material and probably make large quantities of water as depth is attained. From the bottom of the shaft, a crosscut should be run N 21 E so as to eventually meet a similar crosscut from the Gold Bug shaft S 21 W. For present exploratory purposes, provision should be made to drive this crosscut from 600 to 800 feet or through the Tomboy-Savage formation. At the same time provisions should also be made to drift both east and west on the Clipper ledge from the shaft sufficiently far to open up this ledge for examination.

The Gold Bug shaft should be next selected for the prosecution of exploration and properly equipped with machinery and sunk to a depth of at least 400 feet. From this depth cross-cutting and drifting should be done southward in conformity with the work done at the Clipper and east along the line of Gold Standard lode.

Values totalling \$25.97 per ton gold, silver and copper were obtained four feet below the surface in the Clipper shaft and that from the leached material from the southerly eight and one-half feet of ledge. We are very sorry not to have been able to have obtained a sample from the bottom of the shaft as the ledge matter there was much firmer and unleached as shown by the sulphides scattered through the material on the dump. A bottom sample taken from the dump assayed for silver ran 17.75 ounces. Every indication for the opening of a paying body of ore is present here almost from the start.

For the prosecution of this work on the Clipper, complete machinery equipment should be provided consisting of a gasoline hoist, air compressor, drills, etc. The shaft should be strongly timbered, five by seven feet in the clear with eight by eight timbers to the 600 level and the crosscutting and drifting as outlined above done. To do this work will require an initial outlay of \$20,000.00. This amount will be sufficient to equip and sink to 500 feet cutting the main 52 foot ledge at each hundred feet. This will determine the value and width of the ledge. An additional fund of \$30,000.00 should then be provided for crosscutting and drifting as hereinbefore described.

A like amount of \$50,000.00 will be required at the Gold Bug shaft if it is deemed advisable to prosecute this work at the same time the Clipper work is done.

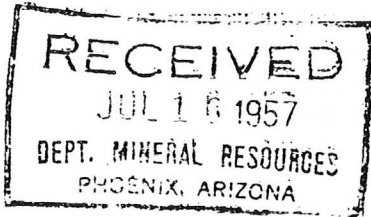
To mine, transport and smelt this ore from the Clipper shaft will cost about \$7.50 per ton.

On a basis of \$25.97 ore, this would leave a margin of \$18.47 with ore of this character this shaft would really be partially self-sustaining and would require a correspondingly less amount of initial outlay.

The great smelter of the Ray Consolidated Copper Co., the first unit of which is now nearing completion on the P & E R R at Hayden, 18 miles from here, will furnish unexcelled facilities for smelting the ores of gold, silver, and copper from this region. The heavy iron content of the ore bearing formations of the A.B.C. group make them peculiarly desirable from a smelting standpoint, even to the commanding of a premium.

Respectfully submitted, November 3, 1910, (signed) Smith and Lewis.

Report by: Smith and Lewis, Consulting Engineers and Geologists, Pittsburg, Pa.



DEPARTMENT OF MINERAL RESOURCES  
State of Arizona  
MINE OWNER'S REPORT

Date July 14, 1957

1. Mine: Hobby, Justen, Winona, Shorty, Watts, Coverage & Katherine mining ~~at~~ claims.
2. Location: Sec. 14, 15, 16 Twp 4s. Range 13 East Nearest Town Kelvin  
Distance, T. WO. miles Direction N.E. Road Condition STATE--graded--- good
3. Mining District & County: Riverside & Wooley mining dist. Pinal county
4. Former Name of Mine: Lower Wooley
5. Owner: Joseph J. Spletzer & Robert Worthington  
Address: Star Route, Box 6---Ray ARIZ.
6. Operator: Spletzer & Worthington  
Address: Same
7. Principal Minerals: Copper, gold & silver
8. Number of Claims 40 Lode  Placer  
Patented Unpatented
9. Type of Surrounding Terrain: Foothills on southwest slope of Tortilla range
10. Geology & Mineralization: Pre-cambrian age--granites, diorites, diabase quartz monzonites and granitic porphyry. At least two parallel faults (shear zones) traverse the claims from east to west. Surface outcrops contain considerable iron oxide, some iron sulphide, small amts. of manganese, copper oxides, copper sulphides gold and silver.
11. Dimension & Value of Ore Body: Unknown



REPORT OF EXAMINATION AND SURVEY OF THE A.B.C. GROUP OF

MINING CLAIMS

Near

KELVIN, PINAL COUNTY, ARIZONA

- - - -

In accordance with our proposal we have made an examination and survey of the Argonaut, Bi-metallic and Comstock group of mining claims, locally known as the A.B.C. group, near Kelvin, Pinal County, Arizona and report as follows;-

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PROPERTY.

This property, consisting of twenty-eight full mining claims and two fractions, or thirty in all, is in three groups known as the Argonaut, Bi-metallic and Comstock.

The Argonaut is composed of the Legal Tender Nos. 1 & 2; Gold Standard Nos. 1 & 2, Contest, Argonaut, St. Lawrence, Daisy, Savage, Tomboy, Liberty, Columbia, Clipper, Teddy, Best and Belcher and Ratler, sixteen full claims.

The Bi-metallic group is composed of the Gold Dollar, Bi-metallic, Gilded Age fraction, three full claims and one fraction.

The Comstock group is composed of the Comstock, Hindu, Ophir Nos. 1 & 2, Monitor, Monitor fraction, Golden Eagle Nos. 1 & 2, American Boy Nos. 1 & 2, nine full claims and a fraction.

The Argonaut and Bi-metallic groups join on their end lines and have the same mineralogical formation as to lodes and veins. The Comstock group, lying parallel to the Argonaut on the south has a separate and distinct system of lodes or veins characteristic to itself alone. The combined area of these three groups is about 580 acres.

LOCATION.

These combined three groups are located on the Gila river in the eastern part of Pinal county, Arizona in what is known locally as the Riverside Mining District. The Phoenix and Arizona eastern railway running from Phoenix to Winkelman along the Gila river passes through the Rattler claim, "Wooley siding", a station on said railway being located about three hundred yards east of said claim. Kelvin is about two and a half miles east of the property. The mines of the Ray Consolidated Copper Co., are four miles north of it. The Kelvin Sultana Copper Co., and the Kelvin Tunnel Co., with other mining properties adjoin it on the north and east.

TOPOGRAPHY.

This mining district lies in the heart of the mountain district of Arizona. The A.B.C. group is located in one of the low lying, parallel ranges of the main Pinal range, extending in a northwesterly and southeasterly direction. This range is about 5 miles long and is more or less mineralized throughout its entire length. From close observation and examination the group covers the most promising mineral outcrops on the range. The Gila River at one time in past geologic history flowed at a much higher elevation than at present as indicated by the great banks of heavy gravel overlying the eastern end of the Argonaut group. Over the entire group all evidences of the Paleozoic formations have been removed by erosive agencies exposing the Cambrian and Pre-cambrian schists, quartzites, porphyries and granites.

The eastern portion of the argonaut group is more or less concealed beneath these aforementioned gravels and a blanket formation of calcareous conglomerate, similar in character to the Gila Conglomerate so common to the formations around Kelvin and Globe. Indications however point to the extension of the Argonaut, Bi-metallic lodes or veins underneath this formation. In elevation the property ranges from nineteen hundred feet to twenty-three hundred feet and is very much cut up by ravines and washes. These run parallel in a general way with the lodes and dikes which, being more resistant, form the ridges and prominent physical features of the property.

#### GEOLOGY.

The country rock of the A.B.C. group is pegmatite and granite. These rocks are ruptured and shattered on the A.B.C. group in two directions principally; the first having a general east-west trend, the other obliquely across the first in a direction about North sixty degrees West, and are intruded with dikes of diorite, diabase, dacite and porphyry.

The main mineral lodes occur in the east-west series of veins while cross fissures seem to have derived their mineralization from the main faults. The entire Argonaut Bi-metallic group consists of an intensively shattered or crushed mass of schistose porphyries, dacite and altered country rock showing abundant evidences of mineral content in all parts of the property.

Two prominent fault planes are in evidence with pronounced shattering and fissuring indicating extensive and long continued movement. The northerly one, herein designated as the Gold Bug fault, passes through the north side of the Argonaut Bi-metallic group along the boundary line common to the Legal Tenders and Gold Standards.

The Southerly fault which will here be designated as the Clipper passes through the centre of the Columbia, Clipper and Gilded Age claims. These two faults about one half a mile apart embrace the major part of the Argonaut Bi-metallic groups.

The Northeasterly-southeasterly cross fissures occur mainly between these two great faults and are no doubt due to lateral movement of the faulted blocks at different periods.

The shifting of these blocks with the resultant pressure and intrusion of dikes of diorite and porphyry has so shattered the country rock between these faults as to form a zone covering the entire Argonaut, Bi-metallic groups, particularly susceptible to mineralization from the mineralizing solutions.

This entire zone between the Legal Tender and the Columbia-Clipper fault is fissured and covered with iron croppings containing gold, silver, and copper. The copper at the surface is in the carbonate form, the sulphide beginning to show at moderate depth.

Numerous drifts, crosscuts, tunnels, shafts and assessment holes have been dug all over the property on the numerous lodes and fissures showing values at all points.

Through the Legal Tender claim runs a wide quartz-porphyry dike schistose in character, which is bounded on both its north and south contacts by granite. On both contacts are mineral lodes carrying values in gold, silver and copper. The northerly lode is very pronounced through the two above named claims and dips south seventy degrees; very little development work has been done on this lode.

The southerly lode shows pronounced iron croppings throughout the entire length of the Legal Tenders. It widens to a width of over one hundred feet of very much shattered and altered country rock filled with mineralized vein matter showing characteristic green carbonate stains. This lode dips north. A vertical

shaft about 115 feet deep, well timbered and equipped with double Cornish whim has been sunk in a quartz-porphry dike at a point about 700 feet from the east end line and 100 feet from the south side line of the Legal Tender No. 1. This shaft was partly filled with water and the bottom could not be reached. At a point about 40 feet from the surface a small stringer vein about 12 inches wide was encountered which assayed \$24 in gold and \$1.25 in silver. This shaft is designated as the Gold Bug. Between the quartz-porphry in which the shaft is located and the granite on the south occurs another lode dipping north 53 degrees having a width from ten to thirty feet. This lode shows heavy iron cropping for over 400 feet containing free gold which gives good colors on panning.

This lode is but an offshoot of immense iron cappings on the Gold Standard Nos. 1 & 2. That on No. 1 is over 600 feet long by from 100 to 200 feet wide while on the Gold Standard No. 2 shows prominently for a length of over 800 feet by a width of from 200 to 250 feet. The connection between these two croppings is covered with wash and decomposed rock yet indications point to their being one and the same body of ore bearing rock.

Through the Argonaut, St. Lawrence, gilded Age and Bi-metallic claims runs two large fissure veins parallel to the Gold Bug and Clipper veins, these veins are separated by about 130 feet of dacite and have a width of from forty to forty-two feet. They carry a high percentage of iron with gold, silver and copper, the copper showing at the surface as green carbonate, changing to sulphide with depth.

The Clipper fault plane covers practically all the Liberty, Columbia and Clipper claims. On these three claims together with the Tomboy and Savage the crushed, fissured and shattered rock reaches its highest development. On the Liberty claim the Clipper ledge measures from 80 to 120 feet in width. The same ledge on the Columbia is largely covered but at a point about 450-ft from the east end line it has a width of 82-ft. It shows up prominently on the surface for over 4000-ft and can be traced for over a mile beyond the eastern end line of the property.

The cross fissuring above mentioned shows to the greatest extent on the Tomboy and Savage claims running S 60 E into the Clipper ledges and N. 60 W into the St. Lawrence.

The Comstock is almost entirely in granite from the south line of the Argonaut group to the south line of the Golden Eagle claim. The most prominent mineralogical features are found on the Comstock and Hindu claim and on the American Boy Nos. 1 & 2.

A huge gossan capping on the American boy No. 1 for a distance of 900-ft from its western end line with a width of from 60 to 80 feet. No development to speak of has been made here. There are plain indications of former copper content which has been leached out and carried on.

The same condition occurs on the Comstock and Hindu claims where a gossan capping indicated true fissure vein having a width from 95 to 100 feet. Some development has been done here; a shaft having been sunk on the east end of the Comstock to a depth of 95-ft. This ledge shows throughout its entire length copper carbonates. Small silver and gold values were obtained in the shaft. This ledge has a porphyry hanging wall the dip being to the north at an angle of 65 degrees.

On the Orphir No. 2 are shown some fine iron croppings containing copper. An assay taken from a 20-ft shaft near the west end line of this claim gives copper content of 7.2%. About 50-ft north of this ledge is a large gossan capping about 200-ft long by 30-ft in width.

This group of claims will probably require quite extensive outlay for exploration and development and should be held for some future consideration.

#### DEVELOPMENT.

This property has been held by its present owners for a period of 12 years during which time a vast amount of work has been done and money spent which is of little permanent value in any comprehensive plan of development beyond maintaining a title to the property.

On the Legal Tender very little work has been done beyond the sinking of the Gold Bug shaft. On the No. 2 claim a 10-ft assessment hole has been sunk having a dip of 85 degrees south in a shattered ledge of a width varying from 40 to 100-ft. This has fine copper indications.

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The Gold Standards 1 & 2 with the St. Lawrence and Bi-metallic have been quite extensively prospected and give good assay values at all points. Besides the inclined shaft heretofore mentioned on gold Standard No. 1 a shaft 48-ft deep has been sunk on the great iron cropping immediately south of Legal Tender No. 1. This shaft dips 75 degrees under Legal Tender No. 1 and has about 150-200 tons of iron ore on the dump showing evidence of former copper content. An assay taken from here gave silver 4 oz. gold \$7.20; copper .2%, metallic iron 30%. The Gold Bug shaft will probably strike this lode at a depth of 300-ft.

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The development on the St. Lawrence consist of a tunnel on the main St. Lawrence ledge about 175-ft long on a vein of oxidized iron ore. A winze was sunk in this tunnel to a depth of 35-ft which was full of water at the time of examination. Above this tunnel and to the west of it a shaft 40-ft deep with a dip of 73 degrees south was sunk from which some rich ore has been obtained. A tunnel assay taken 40-ft from the portal gave silver 2 oz, gold \$.40, copper 1.6% while an assay taken from a sample at the shaft gave 6.6 oz silver, \$1.00 gold and 8% copper.

An assay taken from a 46-ft shaft on the Bi-metallic claims gave 4.6% copper. This shaft is sunk in an extension of the St. Lawrence ledge to a depth of 46 feet.

Y  
The development on the Liberty, Columbia and Clipper claims, on the great ledge or shattered zone running through them show the most promising for the comparatively shallow depth attained for any part of the property. This great zone of crushed ledge matter is almost vertical and has three shafts sunk on it all showing gold, silver and copper values and practically the same formation throughout its entire length. On the Liberty claim is a shaft 40-ft in depth in the centre of the ledge which is here 48-ft wide.

On the Columbia a vertical shaft to a depth of 76-ft has been sunk in a ledge 82-ft wide, while on the Clipper claim a vertical shaft having reached a depth of 76-ft is now being sunk in a ledge showing on the surface a width of 52-ft. This shaft was started at a width of four feet in soft ledge matter which at depth of about 40-ft has slabbed off until from there to the bottom the shaft is now 8½ feet wide in a finely crushed and altered vein matter carrying good values in gold, silver and copper. The entire eight and one half feet is stained with salts in of copper. A sample entirely across the ledge as exposed was taken, crushed fine by hand and quartered down. An assay from this gave the following result:- gold \$6.40, silver 11.56 oz., copper 4.17% having a total value of \$25.97. This shaft has already reached the water level, the water coming up through the bottom and standing permanently about 30-ft from the surface. This water is bitter from the salts of sulphur, iron and copper in solution.

Adjoining the Clipper and Columbia on the north are the Tomboy and Savage claims. These claims cover what is probably the most remarkable example of shattered and mineralized formation to be found in this region. This formation covers an area of about 30 acres in the shape of a parallelogram embraced within these four claims extending from the Clipper to the Columbia shaft, about 1600-ft from east to west, with a width of 300-ft north and south. This area is literally covered with a network of ledges and dikes showings croppings of hematite, copper stain and gossan from one end to the other. An assay from a surface sample of the hematite cropping on the Savage claim assayed \$1.30 gold, and .32 oz silver.

A reference to the map accompanying this report will explain more fully the trend of these ledges.

#### CONCLUSION.

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The A.P.C. group taken as a whole has great merit and is worthy of your most serious consideration. There are no spectacular formations or values in evidence on the property. The indications all point to the probable existence of ore bodies of commercial grade which should be opened up along a line of careful development under the direction of competent men. Two points present themselves for immediate consideration; viz the Gold Standard group through the Gold Bug shaft and the Clipper group through the Clipper shaft. We would recommend that the first work be done on the Clipper shaft. This shaft should at once be equipped with machinery of sufficient capacity to sink to a depth of 300 to 500 feet according to the circumstances arising during sinking. Ample provisions should be made from the start to handle the water that will be met with as this ledge is in soft material and probably make large quantities of water as depth is attained. From the bottom of the shaft a crosscut should be run N 21 E so as to eventually meet a similar crosscut from the Gold Bug shaft S 21 W. For present exploratory purposes provision should be made to drive this crosscut from 600 to 800 feet or through the Tomboy-Savage formation. At the same time provision should also be made to drift both east and west on the Clipper ledge from the shaft sufficiently far to open up this ledge for examination.

The Gold Bug shaft should be next selected for the prosecution of exploration and property equipped with machinery and sunk to a depth of at least 400 feet. From this depth crosscutting and drifting should be done southward in conformity with the work done at the Clipper and east along the line of the Gold Standard lode.

Values totalling \$25.97 per ton gold, silver and copper were obtained forty feet below the surface in the Clipper shaft and that from the leached material from the southerly eight and one half feet of ledge. We are very sorry not to have been able to have obtained a sample from the bottom of the shaft as the ledge matter there was much firmer and unleached as shown by the sulphides scattered through the material on the dump. A bottom sample taken from the dump assayed for silver ran 17.75 ounces. Every indication for the opening of a paying body of ore is present here almost from the start.

For the prosecution of this work on the Clipper complete machinery equipment should be provided consisting of a gasoline hoist, air compressor, drills etc. The shaft should be strongly timbered, five by seven feet in the clear with eight by eight timbers to the 500 level and the crosscutting and drifting as outlined above done. To do this work will require an initial outlay of \$20,000. This amount will be sufficient to equip and sink to 500-ft, cutting the main 52-ft ledge at each hundred feet. This will determine the value and width of the ledge. An additional fund of \$30,000 should then be provided for crosscutting and drifting as hereinbefore described.

A like amount of \$50,000 will be required at the Gold Bug shaft if it is deemed advisable to prosecute this work at the same time the Clipper work is done.

To mine transport and smelt this ore from the Clipper shaft will cost about \$7.50 per ton.

On a basis of \$25.97 ore this would leave a margin of \$18.47 with ore of this character this shaft would really be partially self-sustaining and would require a correspondingly less amount of initial outlay.

The great smelter of the Ray Consolidated Copper Co., the first unit of which is now nearing completion on the P & E R.R. at Hayden 18 miles from here will furnish unexcelled facilities for smelting the ores of gold, silver and copper from this region. The heavy iron content of the ore bearing formations of the A.B.C. group make them peculiarly desirable from a smelting standpoint, even to the commanding of a premium.

November 3, 1910.

Respectfully submitted,

(signed) Smith & Lewis.

Report by:-  
Smith & Lewis  
Consulting Engineers & Geologists,  
Pittsburg, Pa.

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