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Cardova 96

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R E P O R T

on

LUCKY STRIKE SYNDICATE

# Appin memo  
on October 22, 1951 and  
copy sent to  
Gaspaw at Amarillo, Tex.  
J.C.

Copy sent to Howard Park  
January 22, 1962  
J.C.

Amarillo, Texas

September 7, 1926

R E P O R T

on

LUCKY STRIKE SYNDICATE

September 7, 1926

By

William E. Hubbard

MR  
96-1

INTRODUCTION.

The following report is the result of a five day examination of the holdings of the Lucky Strike Syndicate during the early part of August, 1926.

Three days were spent in active field work and two days in consultation with Dr. W. H. Chase of Cordova.

Such surveying as was attempted was done with a Brunton compass, aneroid, and a telescopic hand level. With the latter, mounted on a jacob staff, a fair grade of stadia work was accomplished.

All of the open cuts and tunnels were examined and surveyed and dips and strikes taken where possible.

Due to lack of time a detailed study of the geology of the region and even an exhaustive study of the property itself was impossible and consequently the writer has attempted to be conservative in his conclusions but whether he is right or wrong in his minor contentions the general conclusion that the proposition is one of considerable merit is scarcely debatable.

SUMMARY AND CONCLUSIONS.

1. The Lucky Strike property embraces three large lodes or mineralized zones carrying free gold and has great promise of becoming a valuable producer.

2. Based on assays from vein material at and near the surface the Stringer Lode carries an average of over \$7.00, the Lucky Strike about \$2.60

and the Tip Top up to \$6.00 in gold per ton. The thicknesses of the mineralized zones are as follows:

Lucky Strike Lode	- - - - -	8-24 feet.
Stringer	"	8-16 feet.
Tip Top	"	10-20 feet.

3. The mineralized zones are associated with graywackes interbedded with slates and hence follow the bedding, which dips at an angle of about 60 degrees.

4. The conditions and costs of mining and transportation are exceptionally favorable.

5. To date over \$20,000.00 has been expended on development but the work has been done so unjudiciously that only a few thousand tons have been blocked out.

6. The present development is being done in a commendable manner.

7. An expenditure of \$20,000.00 in carrying out the present plans should open up several thousand tons of ore in the Stringer vein.

#### LOCATION AND ACCESSIBILITY.

The property covered by this report consists of a group of ten claims in the McKinley Lake District about 22 miles southeast of Cordova, Alaska. Map #1 accompanying this report shows the general location of the area and map #2 the names and relative position of the claims.

Cordova, 1300 miles by boat from Seattle is one of the chief ports of call in the Prince William Sound District and the shipping point from the Kennicott Copper Company's famous copper mines in the Chitina District.

The area is readily accessible from Cordova. Alaganik, a station 22 miles from Cordova on the Copper River and Northwestern Railroad, is but four miles by a good trail from the property. During high tide, moreover, supplies

can be taken by small boat from Alaganik through Alaganik Slough to the head of McKinley Lake from which point the distance by trail to the property is but 1-1/2 miles.

The Alaska Forestry Service is at present widening and grading the trail and when this work is completed supplies and machinery can be moved from Alaganik to the property by means of a small caterpillar tractor.

I am informed by Dr. Chase of Cordova that the trail will be widened by the Government to a wagon road within a year and also that an automobile road from Cordova to McKinley Lake is contemplated. In short, transportation difficulties should be at a minimum.

#### HISTORY OF AREA.

The mining possibilities of the area were first noted about the year 1900. In a special publication of the United States Geological Survey, "The Geology and Mineral Resources of a Portion of the Copper River District, Alaska," 1901, p. 90, F. C. Schrader and A. C. Spencer mentioned the occurrence of gold bearing veins near Alaganik. Their conclusions, as stated, were that the Alaganik region seemed worthy of the further attention of mining men.

Shortly after 1900 there was some placer prospecting along Bear Creek in the same district by a man named Storey, superintendent for the Northwest Fisheries but the district was not brought to the attention of the general public until 1907 when E. S. Malone, Heney, and Simpson, the last two being connected with the M. J. Heney Construction Company, located the McKinley Lake group of claims, organized the McKinley Lake Mining Company, sold stock, and drove a 600 foot tunnel which, unfortunately, paralleled the strike and opened up little of value.

About this same time the Lucky Strike area was prospected and claims staked by Malone et al but no real development was prosecuted until 1912.

In the summer of 1912 a group of experts representing the Treadwell, London Exploration, United States Smelters, and Guggenheim interests spent about three weeks in the district and I am informed that \$300,000.00 was offered for the two groups of claims but that some of the owners, Thisted and others, held out for an exorbitant price.

In the fall of the year the owners raised about \$60,000.00 by stock sales in Cordova, a man named Nichols was placed in charge and the Blacksmith or Lucky Strike and the Stringer tunnels driven. (see Map #2). Most of the money was misused, wasted, or stolen and the discovery of the famous Cliff Mine at Valdez, 80 miles to the northeast of Cordova, caused interest to drop.

In October, 1912, the McKinley Lake District was visited by Theodore Chapin and J. B. Mertie of the United States Geological Survey following which Mr. Chapin made a short report which appeared in Bulletin 542, 1912, page 78 et seq.

In the report he described the 20 foot Lucky Strike ledge, the 20 foot Tip Top Ledge and the Stringer vein in some detail. Though he took no assay samples he mentioned being advised that the Lucky Strike vein averaged \$8 and \$10 per ton and that a mill test on quartz stringers from the Stringer vein yielded as high as \$100.00 in gold per ton. In conclusion he reported the mining conditions as being exceptionally favorable.

In 1913 the control passed from the Thisted group to Maline, Erickson, et al. Sometime during that year Birch of the Kennicott and Wernecke, Kennicott engineer, visited the property remaining seven days. At that time, according to Mr. Malone, whose work I have no reason to doubt, an offer was made to lease and bond the Lucky Strike property for a consideration of \$215,000.00 final payment to be made within two years and active development to start at once.

In 1915 Dr. W. H. Chase of Cordova became interested in the area and employed Mr. James Henley, a mining engineer, to make a thorough study of the

properties,. Mr. Henley spent six weeks in the area, collected samples for several hundred assays and rendered a favorable report. Dr. Chase immediately bonded the properties and shortly afterward transferred the same to Mr. B. F. Millard, an engineer who had previously developed the well known Cliff Mine at Valdez. After checking Mr. Henley's work Mr. Millard proceeded at once to New York to secure the capital necessary to develop the properties but due to conditions incident to the late World War his mission was a failure.

Following this the property remained idle save for the prosecuting and recording of assessment work until the summer of 1925 when Dr. Chase again took over the property and started the development that is now in progress.

#### TITLES TO AND RELOCATION OF CLAIMS.

The titles to all save the Sykes claim are clear, fully covered, and recorded in the Commissioner's office. Dr. W. H. Chase of Cordova has power of attorney and full authority to negotiate any deal covering the entire group of claims.

Map #2 shows the amended locations of the various claims. This relocating was done to take full advantage of extralateral rights under the Apex law. Based on the strike and dip of the formations and the angle of slope of the hillside the writer estimates that the average direction of the trace of the mineralized zones at the surface should be about 80 degrees east of north but to conform with the original locations it was necessary that the side lines strike N 65.

#### LAWS AND TAXES.

The Alaskan Law provides that in addition to surface discovery rights all veins and ore bodies cut by any tunnel for a distance of 3000 feet from its portal may be located and patented the same as though they were discovered at the surface.

The law also provides for a mining tax varying from 1% of net incomes

in excess of \$10,000.00 and less than \$500,000.00 up to 1.75% of net incomes of more than \$1,000,000.00 per year.

#### TOPOGRAPHY.

The area is very rugged with slopes averaging over 30 degrees. Many of the hills surrounding Lake McKinley, the water of which is backed up by high tide, rise to elevations of over 3000 feet within a distance of a mile from the Lake. Glaciation has modified the topography by widening and rounding the valleys up to an elevation of about 2000 feet and while there are a few small glaciers and snow fields above this level the upper portions of the mountains are typical of water erosion.

Dangerous slides of rock are common due to the steep slopes but on the other hand the high degree of slope is very desirable from a mining standpoint.

Map #2 shows the approximate location of the 500, 1000, and 1500 foot contours.

#### CLIMATE.

Contrary to the belief of many this part of Alaska has a very equable climate and mining and milling operations can be carried on throughout the entire year. Temperatures of below zero have not been recorded at Cordova during the past 20 years. The normal winter temperature is 20-30 degrees Fahrenheit and the snow fall is seldom heavy. In the winter of 1925-1926 there was snow on the property from November 15th to June 1st only and the first snow in the Cordova area during the winter of 1924-1925 fell on Christmas Eve. The rainfall for the area is quite heavy averaging about 70 inches per annum.

#### TIMBER AND VEGETATION.

The timber on the property and the surrounding area is of good size and quality and admirable for mining purposes. Hemlock, spruce, and tamarack

are abundant with the larger trunks well over 3 feet in diameter. Vegetation, due to the mild climate and abundant rain is of an almost tropical rankness. All manner of edible berries grow in abundance and it is claimed that there is not a poisonous berry, fruit, or fungus, nor a poisonous snake in the entire country.

#### ECONOMIC GEOLOGY.

The country rock of the area comprises highly folded and partly metamorphosed sediments of the Orca Group, which, with the Valdez Group lying unconformably below it, forms the chief mineral bearing series of the Prince William Sound District. Although not definitely established, the age of the Orca Group is probably Jurassic and of the Valdez Group, Devonian.

The rocks under discussion consist mainly of interbedded dark gray slates and graywackes. (The term graywacke is used to indicate a rather large group of rocks of sedimentary origin containing grains of quartz, mica, hornblends, etc. and which have been altered by heat and pressure. Those in the Lucky Strike District are sufficiently altered as to have the appearance of quartz diorites than of a sedimentary rock.)

The prevailing strike of the rocks is N 75 degrees W and the average dip about 55 degrees to the northeast.

Time did not permit the mapping of the geologic structure in the general area surrounding the group of claims and this information would have been undoubtedly of value, but for the purpose of the report the dips and strikes recorded may be considered sufficient.

The complete series of rocks on the property is apparently a part of the west limb of an overturned fold as shown by drag folds in the relatively non-resistant slate beds. Many small faults were noted but as they all apparently follow the bedding they probably have little effect in limiting the ore zones.



Due to the folding of the series the harder graywacke beds were much fractured and brecciated while the softer slates adjusted themselves by slippage along the bedding planes.

Subsequently some of the fractured graywackes were extensively mineralized by the injection of vein quartz carrying gold, silver, pyrite, arsenopyrite, and galena. The quartz veins range in thickness from microscopic veinlets to stringers locally a few feet in width but so thorough was the impregnation that the graywacke itself is extensively mineralized and carries gold values as well as the quartz.

In some specimens the ratio of sulphides to ore is as high as 1:50. (The average ratio in the ore being milled at the Alaska-Juneau would be about the same, or possibly slightly more).

Three important and well defined mineralized zones have been opened up on the property as follows:- (cf. map #2)

LUCKY STRIKE LODE:-

This was the discovery vein of the area and varies from 8-24 feet in width.

STRINGER VEIN:-

The discovery point of this lode is about 900 feet northeast of the Lucky Strike Open Cut. It was opened up by the Stringer Tunnel and Stringer Open Cut and will average probably ten feet in width.

TIP TOP LODE:-

This was opened up by an open cut about 750 feet northeast of the Stringer Vein and is about 16 feet in width,

In addition to the above there are other less important mineralized beds one of which out-crops directly above the present face of the working tunnel and which should be cut within the next 100 feet provided the direction of the

tunnel is changed to slightly west of north.

As far as observed the mineralized zones follow the bedding and this assumption has been made in all computations. There is no reason to believe that values should not persist in these zones to well below sea level and the nature of the ore as well as the physical history of the area would lead one to believe that there is no enriched zone at the present surface and hence that the values at depth should be comparable to those near and at the surface.

#### PAST DEVELOPMENT.

A greater part of the development has not been applied in minerlike manner; therefore, has not disclosed the merits of the property, no considerable tonnage of ore has been opened up. The Lucky Strike tunnel practically paralleled the Lucky Strike vein for 118 feet before a crosscut was driven across the vein.

The Bohunk Tunnel was driven 215 feet in slate along the strike and a crosscut then driven 30 feet to the northeast, also in slate. The tunnel was started too far to the north to cut the vein.

The Stringer tunnel was driven on the Stringer vein for a distance of 78 feet. Six feet from the face of the tunnel an inclined winze was sunk to the southwest for a distance of 16 feet and is reported to have been in ore all the way.

Besides the above Stringer and Tip-Top Open Cuts uncover small amounts of ore at the surface but do little to establish reserves.

#### PRESENT DEVELOPMENT.

At present a 5 x 7 tunnel is being driven in a northwesterly direction. The portal is near the northeast corner of the Porcupine claim and at an elevation of 725 feet. (see Map #2)

The objective of the working tunnel is the cutting of the Stringer and Tip Top lodes. Should the present direction of the tunnel be continued, i.e.,

N 53 W, the Stringer Vein should be cut at about 850 feet and the Tip Top Vein about 2050 feet from the portal. It is recommended that the direction of the tunnel be changed to N 5 W in which case the Stringer Vein should be cut at 475 feet and the Tip Top Vein at 1050 feet from the portal with the points of intersection of the tunnel and veins respectively 175 and 375 feet below the surface. (The above figures are to be considered merely as approximations as they are based upon a few surface dips and strikes.)

At the present time the tunnel work has progressed to a distance of 150 feet from the portal. As the work is being done entirely by hand and the country rock hard and tough five feet of tunnelling takes approximately three days at a cost of about \$35.00 per foot. By the installation of a small portable gasoline driven compressor and air drills the speed could be increased to five feet per day at a cost per foot of not to exceed \$15.00. The 120-foot unit put out by either the Denver Rock Drill or the Ingersoll-Rand people is highly recommended. The cost, with a full complement of steel, sharpening dies, and drill parts, should be about \$2600.00 at Cordova. The saving effected should pay for the compressor in about a month.

#### SUPPLY AND COST OF LABOR, ETC.

##### Labor

Good, experienced hard rock miners are available at 62-1/2¢ per hour. The easy accessibility of the property from Cordova should render available an abundance of moderately priced, competent labor.

##### Water

Sufficient water for mining and milling purposes is available on the property.

##### Power and Fuel

Whenever warranted by the scale of operations hydro-electric power can be developed on Bear Creek, about two miles from the property. For the

immediate future and for a daily capacity up to 150 tons Diesel Engines would be advisable as Diesel Oil can be laid down at Alaganik for about 5¢ per gallon.

#### Transportation

As indicated under "Accessibility," the transportation of supplies, machinery, and ore concentrates presents practically no obstacles. Freight charges on mining machinery from Seattle to Cordova are \$13.00 per ton plus \$2.10 per ton wharfage with a penalty of \$2.00 per ton on single pieces weighing more than 4000 and less than 10,000 pounds.

Concentrates may be shipped from Cordova to Seattle at a flat rate of \$4.00 per ton.

#### Miscellaneous.

Powder costs about \$15.00 per box and shiplap \$38.00 per M at Cordova. Food costs are such that board for the six men now employed on the property averages about \$1.50 per day per man.

#### FUTURE MINING COSTS.

As indicated previously the cost of development work with the use of compressors should run about \$15.00 per foot or \$5.00 per ton. Stoping costs can be kept down to \$1.00 per ton and ore can probably be delivered to a mill at the rate of 150 tons per day at about \$2.00 per ton mined.

#### MILL AND MILLING COSTS.

The cost of a mill, depending upon the type necessary for a given ore varies tremendously. A conservative estimate for, say, a 150 ton mill completely equipped, with power plant, and installed on the property would be at least \$500.00 per ton daily capacity.

No particular type of equipment should be recommended or installed until thorough tests upon large samples of average ore have been made by some qualified concern, as many fortunes have been thrown away on good mining propositions simply because the wrong type of expensive machinery had been installed.

There are several concerns that test ore for a nominal charge, the size of samples required varying from 100 to 2000 lbs. The firms listed below are perfectly reliable and will not hesitate to recommend the exact type of machinery required.

- (1) General Engineering Company,  
Salt Lake City, Utah.
- (2) Mineral Separation North American Corp.  
220 Battery St.,  
San Francisco, Calif.
- (3) Hardinge Mill Company,  
Salt Lake City, Utah
- (4) W. L. Fennick,  
Salt Lake City, Utah

#### GOLD VALUES.

Values ranging from a trace to 9 ounces per ton in gold have been reported from different assays.

Samples from the Lucky Strike Vein in the Lucky Strike tunnel average a little under \$3.00 per ton and to work this ledge at a profit would probably require large scale operation.

With regard to the Stringer vein, however, the situation is most encouraging. Samples channeled from across the Stringer tunnel every 5 feet show an average value of \$7.00 per ton while samples from the Stringer open-cut and from a prospect along the strike to the east and 200 feet lower in elevation show values of from \$2.00 to \$128.00 per ton.

The writer panned surprisingly good colors from four different samples taken from the Stringer vein and has more than a score of hand samples in which free gold can readily be seen.

It will be noted that but one assay in the list below is from the Tip Top vein. Dr. Chase advises me that several assays from this vein indicated an average of about \$6.00 per ton. I have asked him to make another thorough sampling of the Tip Top cut.

16 of the assays listed below have been made since April of this year. The remainder were incorporated in Mr. Henley's report to Dr. Chase. As the latter supervised this earlier work he will guarantee the authenticity of the assays as shown.

<u>LOCATION OF SAMPLE</u>	<u>VALUES PER TON</u>	
	<u>GOLD</u>	<u>SILVER</u>
<u>Lucky Strike Vein</u>		
E. side above upper tunnel, 12 feet across vein bottom of open cut		\$2.80
Above open cut, 6 feet of white quartz	12.40	
Lucky Strike Upper tunnel, East Side across vein 24 feet		2.40
<u>Stringer Vein</u>		
40 feet west of Stringer tunnel	3.20	
Stringer tunnel, East side	3.40	
Stringer tunnel West Side, 15 ft.	2.80	
" " " " 20 ft.	3.60	
" " " " 25 ft.	8.40	
" " " " 30 ft.	14.00	
" " " " 35 ft.	3.40	
" " " " 40 ft.	36.80	
" " " " 45 ft.	2.40	
" " " " 50 ft.	10.00	
" " " " 55 ft.	3.60	
" " " " 60 ft.	2.80	
" " " " 65 ft.	2.80	
" " " " Face of drift.	4.40	

Stringer Vein cont'd.

Stringer tunnel, East Side, 40 ft. (in top)	3.40	
" " Grab sample from dump	10.80	
Open cut above Stringer tunnel	174.80	
Stringer vein open cut near foot of bluff		
Grab sample from dump	3.20	
Stringer vein, open cut, surface, across 12 ft.	2.00	
Stringer vein in gulch, hanging wall	3.60	
" " " " foot wall	8.80	
Across 24 feet Stringer tunnel	14.40	.20
240 ft. East of Stringer open cut (head of canyon)	80.64	1.10
300 ft. East of portal Stringer tunnel	108.40	
Across outcrop above Stringer lower open cut	9.20	.20
Below lower Stringer open cut	12.40	.30

Working Tunnel

30 feet from portal	Trace	Trace
35 " " "	"	"
40 " " "	"	"
45 " " "	"	"
50 " " "	"	"
55 " " "	"	"
95 " " "	"	"
127 " " "	.40	.30
125 " " "	Trace	Trace
148 " " "	"	"

RECOMMENDATIONS.

The following recommendations are respectfully made:-

1. The locations of the various claims should be amended to conform, if possible, with the boundaries as shown on Map #2 accompanying this report.
2. The direction of the working tunnel should be changed from N53W, its present course, to N 5 W.
3. An outlay of \$4000.00 should be made at once for the purchase of a small compressor and a Fordson caterpillar tractor.
4. If possible, a discovery should be made covering the "Sykes" claim as shown on the map. Also, if warranted by prospecting, claims should be located to the southwest of and adjoining the Lucky Strike Northeasterly #1 and the Tip Top claims.
5. An adequate sample of characteristic ore should be sent to one of the firms listed on Page 12 to ascertain the type of milling machinery needed.
6. The claims should be surveyed by a deputy as soon as possible.