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A. D. STEWART

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101 *Archie McKee*  
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THE FUTURE OF THE PLACER MINING INDUSTRY IN SEWARD  
PENINSULA AND THE INTERIOR OF ALASKA

The Fairbanks District

After the exhaustion of the bonanza placers which for twenty years had sustained the Fairbanks mining community, five dredging companies acquired holdings on Goldstream, Cleary, Fairbanks, Nome, Fish and Chatham Creeks and began active dredging operations.

Because of the exhaustion of the bonanzas, individual mining by small operators is practically dead, tho a few outfits are still working sporadically in favorable localities. Some of the more successful or wealthier of the old timer operators, as Zimmerman on Pedro and Sourdough Creeks and the Martin Creek Mining Company on Kokomo Creek, are mining or planning to mine hydraulic propositions which, due to high costs of transportation or lack of capital, had been left by the old bonanza operators. These operations, however, are few and will not employ many men nor materially raise the gold output. No increase in hydraulic operations in the Fairbanks District is expected.

The future of the placer mining industry in the Fairbanks District at present lies in dredging. The success of dredging, again, is entirely dependent on the Alaska Railroad and the system of public highways radiating from Fairbanks. These two together have cut the cost of transportation so low as to make very attractive the Fairbanks District as a dredging field. Large areas of low grade ground can now be dredged at a profit where they could not have been considered before 1923.

The profits in dredging lie in the side pay or that part of the paystreak on a creek too lean to work by hand but which with cheapened transportation can be dredged. The much ground first worked by hand has been and is being dredged, yet it may be stated as more or less axiomatic that hand-mined ground will not pay to dredge no matter how rich originally.

About fifteen years is the maximum life ahead of any dredging operation maintained at the present time. The F.E. Company with 5 dredges on Cleary and Goldstream Creeks have 10 to 15 years of dredging ahead.

The Nome Creek dredge, if successful in operation, has probably 10 Years ahead.

The Fairbanks Creek Dredging Co., if they dredge that creek to its confluence with Fish Creek, have probably 10 years digging left for their two dredges.

The Fish Creek dredge, which has not heretofore been successfully operated, has, if operations are continued, from 6 to 8 years digging down to the mouth of Last Chance Creek.

The Chatham Creek dredge will probably finish digging in 2 or 3 more seasons.

There will probably be a small dredge built next season on Wolf Creek by some of the employees of the F. E. Co., which will have 8 to 10 years digging ahead of it.

Of the possible dredging areas left in the Fairbanks District, Ester Creek and vicinity stand out as the best. This will be a two-dredge proposition comparable with the F.E. Company operations on Cleary Creek. If the F. E. Company does not take up this proposition and extend the Davidson Ditch to Ester Creek, the operating company will probably have to pump water from the

Tanana River (Chena Slough), or build a ditch from the Chena River. Any method on Ester Creek whereby local water is to be used or the ground to be handled on a small scale, would probably lead to failure and should be discouraged. There is probably 10 to 15 years dredging for 2 dredges on Ester Creek.

Engineer Creek is a potential area for one large dredge. The muck overburden is here very deep (100 ft.) and would require ~~an~~ extensive hydraulicking for its removal. The proposition is not large ~~extensive~~ enough to warrant the installation of a pumping plant to lift water 500 ft. over the divide from the Chena River. As the ground is owned by the Whitworth interests (Whitworth Finance Corporation of London, England) and as the only other available water is from the Davidson ditch of the F. E. Company (who are the logical people to work the ground), it may be some time before a dredge is built. The life of this proposition is from 10 to 15 years for a large dredge.

Upper Cleary Creek above the mouth of Chatham Creek represents an area of dredgeable ground which will take from six to eight years to work with a small dredge. After the Chatham dredge is thru with Chatham Creek, it may be moved to this section of Cleary Creek tho in my opinion this dredge is too light for such ground.

Both upper Eldorado Creek and Upper Dome Creek contain areas which may be dredged. However these areas have much overburden which can only be removed by the water from the Davidson ditch. The F. E. Company is the logical operator on both these creeks. There is about 10 years work on these areas for 2 small dredges.

Fish Creek from its confluence with Last Chance Creek to

near its mouth, is the largest dredging area as yet undeveloped in the Fairbanks District. This area will probably not be as large as appears on the map as the known dredging section below the mouth of Fairbanks Creek is rather narrow. The pay, so far as known, is poorer than on the other creeks now being dredged. However no extensive ditch system need be built as Fish Creek and its tributaries carry enough local water for stripping purposes. Only careful drilling and scientific management such as carried out by the F. E. Company would show the true values of this area. Fish Creek will probably not be touched until the other creeks are nearly dredged out. There would be about 15 years work in this area for 2 large dredges.

Between Little Queenie and Sheep Creeks on Goldstream Creek is another large area of possible dredging ground. Only careful drilling will prove the potentiality of this area. The F. E. Company is the logical operator here as the ground could be stripped from an extension of the Davidson ditch. However, so little is known about this area that it is hard to say how much, if any of it, has dredging possibilities. It's maximum extent is greater than that part of Goldstream now being dredged.

Big Eldorado and Upper Smallwood Creeks also hold possible dredging areas.

South of Fairbanks, Caribou Creek on the Salcha River should be drilled for a possible dredging area. The overburden here could be stripped by local water from Caribou Creek without any extensive ditch lines. Great difficulty however would be experienced in transporting material and supplies to this creek. There would be ten years work on the creek for a small dredge.

Tenderfoot Creek south of Richardson should also be in-

investigated for a possible dredging area tho the problem of obtaining water for stripping this creek is very great and should be carefully looked into before drilling operations are started.

During the next five years we may look for an increase of from three to five dredges in the Fairbanks District. About twenty years should see the end of mining in this district if no new methods are developed.

At present the hope for a general revival of mining is centered in the perfecting of underground hydraulicking. Altho this method is theoretically possible, yet so far no practical and economic procedure has been worked out. Another season of experimenting, however, may see its perfection.

Underground hydraulicking would open up a vast area of ground on Vault, Dome and Eldorado Creeks and the Chatanika Flats, besides Lower Smallwood Creek, Steel Creek, Tenderfoot Creek and many other creeks known to have values and yet which are not quite rich enough to pay by the old hand methods and are too deep for dredging. The importance of this method if it can be worked out, cannot be too greatly emphasized. It would mean the revival of mining for atleast the life of this generation, if not indefinitely, in the Fairbanks District, where there are great areas of low-grade ground.

#### Fortymile District

At the present time most of the mining in the Fortymile District is confined to small hydraulick plants on Jack Wade Creek, Walker's Fork, Chicken Creek, Napoleon Creek, Lost Chicken Creek and Dome Creek. Besides these a few small open out outfits are running in the summer on Franklin Creek, Ingle Creek, Chicken

Creek, Flat Creek and Canyon Creek. Also in the winter time there is a little underground work on Jack Wade Creek, Walker's Fork, Maiden Bar on the Fortymile River and Ingle Creek and Illiwig Creek. The largest outfit is on Walker's Fork where H. G. Cowden strips his ground with hydraulic giants, then uses a dragline excavator to put the dirt in the boxes. He employs about 20 men.

The high cost of transportation in the Fortymile District has delayed mining development. All the bonanza ground has been worked out years ago and, with the exception of one or two hydraulic outfits, present mining is carried on at so narrow a margin of profit that most of the miners are leaving the district for Fairbanks or some other field where they can get steady employment. If present conditions continue, five years should see the end of mining and hydraulicking by small operators in the Fortymile District.

On the Seventymile River at Crooked Creek, Ottenscheele, Frolic and Krumer employ about 20 men in a hydraulic proposition. On Rock Creek there is another small hydraulic proposition employing 2 men. On Alder Creek is a small open-cut mine, employing about 6 men. On American Creek near Eagle is a small open cut mine employing about 5 men.

There seems to be no possible chance for more mines of this small character to be opened up in this part of the Fortymile District. The next five years should see the end of mining on American Creek and the Seventymile River also.

The future of the mining industry in this country lies in dredging. On Chicken Creek, if present indicated values hold up, there is enough ground to keep a small boat digging for ten years. On Jack Wade Creek, if after proper drilling enough values are shown, there is enough ground to keep a small boat digging

for fifteen years. It is said that there are many miles of the South Fork of the Fortymile River which are available for dredging ground and would keep three or four boats digging for ten to fifteen years if, after thoro drilling, proper values are shown.

The occurrence of coal on Chicken Creek should simplify the production of power and reduce its cost. A central power plant located here could distribute electric power all over the Fortymile District. It has been demonstrated in the past year by the use of tractors that transportation rates from the mouth of the Fortymile River can be cut in half. It might be possible to put a good road in to the Fortymile Country from the Yukon River on the American side of the boundary which would reduce these transportation rates still more. If the drilling, which is now being done by Frank Knowles, Trustee, and other parties in the Fortymile, shows dredging values, we may look for three or four dredges to be built in this district in the next five to ten years.

#### CIRCLE DISTRICT

The building of the Steese Highway has greatly stimulated prospecting in the Circle District. The old individual bonanza mining has long since been discontinued and future work must lie in large scale hydraulic and dredging operations. The present Mastodon Creek dredge is to be moved to Deadwood Creek. If this last creek is all dredged, there is about 15 years work on it for this dredge. There is also a hydraulic proposition on the verge of being opened up on Deadwood Creek.

On Upper Birch Creek there has been a mining company sporadically drilling for the last 3 or 4 years with the idea of eventually dredging this creek. If values are as hoped for, there

is digging ~~here~~ for three dredges on this area for about 15 years. The left limit benches of the North Fork of Twelvemile Creek are being investigated for hydraulicking. If favorable, there is enough yardage here to last about 10 years with the available water supply. For several years Coal Creek has been under investigation as a dredging area. Though apparently favorable results were obtained, yet there always seems some obstacle in the way of getting active work started. This is a large area and would probably provide dredging for 2 boats for atleast 10 years.

#### TOLOVANA DISTRICT

Drift mining on Livengood Creek and its tributaries is at a very low ebb. About 2 or 3 more years will see the end of this kind of mining operation. Hydraulick operations on Lillian and Ruth Creeks cannot last over 2 or 3 years. On Gertrude Creek at the present rate of progress, there is probably 5 to 8 years work left. At the present rate of progress hydraulicking on Olive Creek will last another 10 to 15 years. Amy Creek and Livengood Creek are 2 areas of potential hydraulicking ground which undoubtedly will be developed in the future.

Lower Livengood Creek from near the mouth of Myrtle Creek to the mouth of Amy Creek represents a potential dredging area which would give a large-sized boat about 10 years digging. The ground would have to be carefully investigated regarding the bringing of water through a tunnel from Goldstream Creek at the mouth of Alabam Creek.

From a little below the mouth of Olive Creek to Wilbur Creek on the Tolovana River is a potential area of dredging ground which, if some scheme can be worked out for a water supply and if drilling results show high enough values, will give atleast 15 years digging to 2 large dredges.



All future development in the Tolovana District is dependent on a road connecting it to the railroad by way of Olmes. Present transportation costs are so high that no one can afford to start large operations in the district. With the possible exception of the Fortymile country, the Tolovana country appears to be the next area of large scale operation which will come into production in the central part of Alaska.

#### HOT SPRINGS-RAMPART DISTRICT

The American Creek dredge has been idle for some time but is expected to resume operations in the season of 1931. There is about 10 years work ahead of this dredge.

The ground on Sullivan Creek which formerly belonged to the Alaska Gold Dredging Company was taken over by Tillotson and LaHeureux, who are attempting to hydraulic it. At the present rate of progress if the operation is profitable, there is 20 years work ahead of this outfit.

On Woodchopper Creek, Book and Hansen have probably 5 years and Alameda Creeks drifting ahead of them. Farmer and Jones between Eureka and Tuftaker at Glen Gulch have probably 5 years hydraulicking ahead of them. *J.R.* Frankson and Company have probably 10 years work hydraulicking on Pioneer Creek. There is probably 5 years hydraulicking left on Omega Creek.

In the Hot Springs District there is a possibility for a large dredging operation on the Baker Creek flats. If with careful drilling this ground should show values there is about 15 years work for 2 or 3 dredges.

In the Rampart Section there are still a few <sup>small</sup> ground sluicing and shovelling <sup>in</sup> operations going on but it will only be a question of a year or two before they are worked out. On Little

Minook 3 men are prospecting for a hydraulic proposition on the Duncan ground. There is probably 5 years work here with a medium-sized hydraulic outfit. On Big Minook from a little above the mouth of Little Minook to the Yukon there is a possible dredging proposition. If this ground is thoroughly drilled and shows values, there is about 10 years work here for a medium-sized dredge.

#### KOBUK DISTRICT

At present mining in the Kobuk District is confined to shoveling-in and small hydraulic operations on Lynx Creek, California Creek, Dahl Creek, Aggie Creek, Klery Creek and Central Creek. The N.W. Alaska Mines in the summer of 1930 started hydraulic operations on the Shungnak River below the Canyon. Below this again clear to the mouth of the Shungnak is a potential dredging area which they are at the present time investigating. So far the hydraulic operations have proved very successful. What drilling results have been obtained have been very encouraging and it is very likely that 2 or 3 and possibly 4, large dredges will be installed on the lower part of this river in the next 3 years. This area should contain 15 to 20 years dredging.

So little is known of the Kobuk District that it is hard to tell what other potential dredging areas may be developed. However the future of the district lies in large scale dredging. Although freight rates are fairly cheap, still the season of freighting is so short that supplies will have to be shipped in for any operation a year ahead of time. The transportation of men and of perishables can be accomplished from Fairbanks by aeroplane. It is planned to have communication with Fairbanks by radio phone. Altogether the Kobuk District is a very favorable as far as transportation facilities are concerned if properly planned for large dredging operations. It should be more thoroughly investigated with these in view.

SEWARD PENINSULA

Mining on Seward Peninsula is practically confined at present to hydraulicking and dredging. Both are greatly on the wane. The main dredging outfit, the Hammond Consolidated Gold Fields, on the tundra back of Nome, will be through in 7 or 8 years if their present plans hold out. Besides the 12 dredges operating, one small dredge has just been started on Spruce Creek. There should be about 10 years digging ahead of this boat. It can be well said that without any new developments, the present properties now being worked on Seward Peninsula will be finished in the next 10 years.

The possibility of <sup>much</sup> new ground being opened up ~~by dredging~~ <sup>under present</sup> conditions ~~is~~ is remote as the Bangor Dredging Company with a 2½ cu. foot bucket dredge has been looking for new ground for the last two years.

There is a possibility for a small company to place a dredge on Humbolt Creek. One or two dredges might be operated on the middle part of the Immachuck River. However, both of these propositions would require careful drilling and consideration and would not make large operations.

In case the Hammond people took over that part of the third beach line extending eastward from Holyoke Creek, the life of their dredging operations in Seward Peninsula would be more than doubled. However this is not within their present plans. If transportation were cheapened by the extension of the tram-line to Taylor Creek, parts of the lower Kougarok River ~~would~~ would probably be dredged. Two dredges could be operated here. It is doubtful whether Henry Creek in the Kougarok District will prove a dredging proposition although it has been partially drilled for that purpose. The lower part of Iron Creek in the Kougarok might possibly hold a small dredging proposition also.

Outside of the above, it is doubtful whether any other creeks on Seward Peninsula will be opened up for dredging. All hydraulic propositions that were capable of being worked under present condition of transportation and costs have been developed. Unless some new and cheaper method of mining placer ground comes in, as before said, 10 years will probably see the end of placer mining in Seward Peninsula.

#### MARSHALL DISTRICT

Placer mining is practically ended in the Marshall District. From information available there is some hydraulic mining in a part of this district (Stuyohok River) going on but it cannot last for more than 4 or 5 years.

#### TULUKSAK-GOODNEWS BAY DISTRICT

Dredging on Bear Creek was discontinued on 1930 but will be resumed in 1931. There is a large area of low-grade ground below Bear Creek on the Tuluksak which will pay to dredge if transportation costs are slightly reduced. If a method of dredging this ground is devised, there is 20 years work ahead of the Bear Creek dredge (N.Y.-Alaska Dredging Co.)

there is

On Marvel Creek, tributary of the Aniak River, a small hydraulic plant, which at the present scale of operation, has about 20 years work ahead. This creek appears very favorable for dredging and there has been some talk of drilling it with that in mind. If it should prove up, there is about 10 years work for a small boat on the creek.

On the Arolic River there is said to be ground which might prove after proper drilling to be dredgeable. If this ground is not proven, there cannot be over 5 years work left in the other placer mines of the Goodnews Bay Section.

#### THE RUBY DISTRICT

At present mining in the Ruby Poorman District is confined with few exceptions to drift mining. This district is noted for the "spotted" character of its paystreaks. In the future small "spots" of pay may be found on creeks not at present prospected. However, with the passing of the old time prospector the chances for new finds grow fewer every year.

The completion of the government road to Poorman, will reduce the cost of supplies to that camp. This reduced cost may cheapen mining enough to allow some operators to work lower grade ground than heretofore, and thereby prolong for three or four years the life of the community.

Upper Long Creek and Upper Poorman Creek may with careful drilling develop into dredging possibilities provided some way can be worked out to deliver water to them at a fairly reasonable cost. Drilling may also reveal other dredging ground on little prospected creeks between Poorman and Ruby.

Outside of the above slight dredging possibilities, the mining life of the Ruby-Poorman District is probably not over 5 years, or at the very most 10 years.

#### THE GOLD HILL DISTRICT

The mining in the Gold Hill district is practically confined to prospecting Mason, Grant, Moran and Morerain Creeks. Grant Creek is being actively prospected for a hydraulic mine and at present is the most promising part of the district. If it develops, there is at least 10 years hydraulicking on the creek.

#### CHANDALAR DISTRICT

Placer mining in the Chandalar District is practically finished.

Nicholson intends to do some hydraulicking on upper Big

Creek just above the mouth of St. Mary's Gulch in the summer of 1931. Manuel Mella may drift mine out some pillars in the winter of 1931-1932 on Little Squaw Creek. ~~At~~ A little prospecting is also being done on Tobin and Dictator Creeks. There may be a chance of drift-mining ground being found on Tobin Creek and lower Big Creek. If these possibilities do not materialize, 2 years will probably see the entire abandonment of the Chandalar District.

#### KOYUKUK DISTRICT

Placer mining in the Koyukuk District is at present at a very low ebb. With the exception of the Wild River section, two years should end all present-day crude placer mining operations. On Wild River a few men working singly or in pairs may do a little shovelling-in for 2 or 3 more years. With cheapened transportation and capital, it may be possible to hydraulic Nolan Creek, Twelvemile Creek, Slate Creek, and parts of lower Hammond River. With the exception of Nolan Creek and Hammond River, each of these creeks is a separate project. All would require careful investigation to determine if each project would justify the required expenditure for ditches and equipment. However, it may be some time before transportation costs are cheapened by a road from the Yukon River. So we may look ahead for many years during which time the district will be practically abandoned from a placer mining standpoint except for a few prospectors, until transportation facilities and capital are available.

#### IDITOROD DISTRICT

The two dredges in the Iditorod District did not have a very successful season. There is probably about 10 years digging ahead of these dredges if the values in the ground persist high enough to yield a profit. There is no drift mining in the district. Hydraulic

and ground sluicing operations will probably all be finished in about 5 years or less. There is probably no hope of other projects of any size being developed in this district.

#### THE INNOKO-UPPER KUSKOKWIM DISTRICT

Placer mining in the Innoko District consists at present of dredging and hydraulicking with a few mechanical scraper operations and an occasional individual shovelling-in. The two dredges on Ganes Creek may be occasionally run in favorable seasons for the next 5 years. On Yankee Creek, the Flume Dredge Company is practically through. However if lower Yankee Creek is dredged, the life of this operation may be extended another ten years. The dredge on Little Creek should finish if the whole creek is dredged, in the next five years. None of the mechanical scraper operations nor hydraulicking operations in the Cripple Section should last over five years at the most. In the Nixon Fork section placer mining is practically finished. Except for occasional sniping and prospecting, five years should see the end of mining in the Innoko District. Even if Lower Yankee Creek is dredged and the perfecting of underground hydraulicking allows the working of the deeper parts of Candle Creek and of Ophir Creek, the above limit can only be extended to ten years.

#### KANTISHNA DISTRICT

Placer mining in the Kantishna District is practically at an end. There may be a chance for dredging operations on one creek. However, this had been partially drilled with rather unsatisfactory results so unless future drilling shows up better <sup>values</sup> ~~results~~ this district is dead from a placer mining standpoint.

#### BONNIFIELD DISTRICT

There are a few hydraulic operations still being conducted in the Bonnifield District. There is a dredging possibility which

may show up through careful drilling on a tributary of the Little Delta River and also another on the ~~Totatlanika~~ River. On the whole the future of the Bonnifield District is not very bright and it may be that the next four or five years will see the end of placer mining in this district.