

MINING IN BAKER COUNTY

Mining operations in Baker County were more numerous and more diversified during the first sixty years of the county's history (1860 to 1920) than is commonly recognized today. For example, tuff was quarried and shaped into dimension stone over a period of several years at quarry sites located at Pleasant Valley and in the vicinity of Baker City. Limestone was mined and burned for an even longer period of time in at least a half dozen batch kilns located at various places in the county. Bricks were made for awhile from clay produced from a pit in Baker and another near Sumpter. The important gypsum deposits on the ridge above the Snake River below Huntington were mined to the point of being depleted during the opening decades of the present century and the Northwest Granite company at Haines, originally established in 1890 was a small, but soundly entrenched producer of cut and polished cemetery markers that operated from its own quarry until as recently as 1960. In short, the downtown business districts in most communities and many of the important public buildings and schools, etc., in the county, and in part, even homes, were built of brick and stone and mortar and plaster produced substantially by thriving local industry.

To this must be added intensive, though generally unproductive efforts spent on the investigation of what were then regarded as hopefully important prospects of other minerals. A partial list includes exploration work done on copper prospects in the vicinity of Homestead and elsewhere around the turn of the century and attempts to produce manganese, tungsten, antimony and even chrome ores during the industrial emergency occasioned by World War I.

During all this period, however, gold and silver mining is what commanded the most attention and generated the most noteriety. Operations were active on both lode and placer mines at one place or another at all times, although a tapering-off in the tempo of activity became apparent towards the end of the period as the placers and the near surface lode occurrences were depleted and most of the old milling facilities became obsolescent. Considered overall, this period was characterized by a higher level of interest in mineral resources and mineral resource development on the part of the average citizen, with a far greater percent of the populace directly and indirectly concerned with mining, than has been the case since.

Between 1920 and now, some significant changes took place. Dimension stone as a building material lost popularity and the quarries shut down. With improved transportation facilities it became possible to import better quality bricks from outside sources. However, it also became possible to export. Thus the quarrying of limestone went big-time with the installation in the twenties of the cement plant at Lime -- an operation that has maintained continuous and expanding activities ever since, supplying limestone for their kiln at Lime and for another company-owned cement facility at Lake Oswego and also, much of the time, for the sugar refinery at Nyssa. In addition, with the availability of natural gas in the area, and because of a newly developed demand for high purity burned lime for the manufacture of carbide and increasing demands by the paper industry in the northwest, the Chemical Lime Company began operation at Wingville in 19 . Incidentally, as is inevitable with all mineral resource operations, both companies exhausted their original sources of limestone and were forced to open new quarries. The ability to export has sparked a revival of interest in stone for building purposes also, although now the demand is for decorative

material rather than for structural dimension stone. Thus Dooley Mountain rhyolite breccia has been shipped to distant points in considerable quantities during recent years.

With respect to the exploration and development of the fringe minerals since 1920, it can be said that a sizable amount of copper was produced from the Iron Dike property at Homestead during the twenties and earnest, but unsuccessful efforts were made to establish operations on the copper showings in the Mother Lode area near Keating during the late twenties and early thirties. Also, and for the second time, the shortages of critically important minerals attending World War II and the Korean emergency resulted in temporary re-activation of the antimony and manganese properties. In addition, exploration work was done on the diatomite occurrences near Keating in sufficient amounts to demonstrate they are extensive enough to be mineable if, and when, marketing conditions offer the opportunity to establish an operation. A similar situation exists in the instance of a newly opened talc prospect on Dooley Mountain. Likewise, the perlite occurrences on Dooley Mountain have been tested for expansibility by several different interested parties during the past twenty years and found to have good commercial properties. In fact, truck load lots have been tested at a plant in Portland during each of the past two years and a tentative contract has been let for commercial delivery beginning next year.

Gold and silver mining subsequent to 1920, and up until operations were closed down by legal edict at the beginning of World War II, carried on with fewer operations than previously, but they were bigger and better organized and more thoroughly mechanized. For example, the Rainbow Lode in the Morman Basin was the biggest single producing lode mine in the state for several years during the late twenties. Cornucopia took over the lead during the thirties, maintaining a payroll of around 250 employees

much of the time until its closure just prior to the War. A substantial tonnage of silver ore was shipped from the Bay Horse mine near Huntington and a high level of mechanization prevailed at most placer operations with bucketline dredge installations on Clarks Creek and at Sumpter and several doodle-bug type washing plants active from time to time elsewhere.

Then, beginning with World War II, there was the close-down order which brought all operations to a stand still. Ever since, gold and silver mining has been virtually non-existent except for one of the Sumpter dredges which was maintained intact during the war and reactivated for a period of several years afterwards. This failure to resume operation of gold and silver mines after the war is nationwide in scope and not novel to Baker county or eastern Oregon. It is due solely to an adverse economic situation resulting from the fact that by Congressional edict the price of gold is today the same as it was in 1935 ----- just as, by the same token, there would be no cattle and logging industries in the county if the prices for cattle and timber were held by law at the same levels that prevailed in 1935.

Abbreviated though it is, this outline of mining history in the county points up trends from which certain generalizations can be made concerning future developments. One such generalization is that just as the expansion of transportation and marketing situations enabled the county's limestone industry to grow, in the space of a few decades, from a half dozen little batch-fed kilns serving a local construction market to a major industry presently supplying raw materials to other manufacturing industries throughout the northwest at large, so also is the current industrial growth in the northwest generating demands for an ever greater and more diversified variety of mineral products. The impact has already been great with respect to mining in the northwest and it can be expected to grow. Accordingly, mining activity in the county can be expected to expand and diversify in

the long run, also. For example, the already established limestone industry can be expected to continue active for years to come even though the newly inaugurated practice of barging raw limestone from British Columbia sources to Portland by sea may put a crimp in local operations from time to time. Furthermore, a potential already exists for an increase in the production of building stone over and beyond that now being made. More significantly, markets can be expected to develop eventually for the perlite and even, in the long run, for the local diatomite and talc. In addition, investigations currently underway indicate that certain rock occurrences in the county may have good pozzolanic properties, hence these too can be regarded as possible candidates for eventual development.

A second generalization can be made with respect to metal mining and in this connection it should be evident that it is the county's now dormant gold and silver properties that rate as its principle metalliferous assets. The generalization here is that our national monetary situation and the increase in world-wide demand for silver for industrial purposes can be expected to force changes with respect to the artificial and arbitrary controls by which the production of these metals is presently governed. After all, it is an admitted fact that our Treasury stocks of both metals are virtually exhausted, yet gold still rates as an essential commodity in international monetary transactions and our silver shortage is even now so acute that the Treasury has been forced to start issuing coins made from substitute metals. In fact, the industrial uses for silver have multiplied so extensively during recent years that the world-wide production of new silver is no longer equal to the industrial demands; hence the Treasury's calling in of silver coins can not amount to more than a stop-gap tactic in their fight to maintain the arbitrary and artificial price structure they are attempting to maintain. Thus, eventual revitalization of gold and silver mining in both the nation and the county seems inevitable.

What these trends indicate with respect to future demands by the mining industry for water in the county can be appraised as follows. First, all processes for converting limestone into industrially marketable forms entail drying, burning and calcining. Water use at the existent operations is nominal and limited mostly to laboratory, shop, sanitary, personnel and emergency fire-fighting needs. Continued operation can be anticipated to require no great excesses. With respect to perlite, processing consists of expansion at high temperatures. However, the economics of marketing is such that this would be done in plants located in the market areas and that crushing and dry screening is all that would take place at the mine site; hence water requirements would be negligible.

Production of sawed dimensions stone would entail some use of water if market demands ever arise to warrant such an operation. However, the production of building stone in the un-sawed, rubble form now required by the construction trade involves no use of water except in purely incidental amounts. Even a major expansion of this production would thus create no foreseeable significant demands. With respect to the possibility that market conditions might someday materialize to warrant the establishment of an operation on the diatomite, water requirements would parallel those prevailing at the lime plants because the processing techniques are similar, that is, drying and calcining. Finally, the talc available in the county is a type that will be marketable for only commonplace industrial uses such as fillers and as an insecticide carrier, etc.; hence for any operation that might eventually materialize, the foreseeable practice would be to ship the quarry product in lump form to custom grinding plants in the market areas. Water requirements at any such quarry would be negligible, accordingly.

Metal mining is what is left and this is the most difficult to analyze. Water would be required for washing and milling operations but the amount that might be needed, and the places where the need might occur, are virtually impossible to predict. The reason is that before any washing or milling operations can be started, a vast amount of costly exploration work will have to be done in order to determine which properties have sufficient potential to be minable, and on what scale. How much of such work might take place will depend in turn on the nature of the incentive that may develop for undertaking to re-activate the mines and the extent to which it counter balances the tremendous expenses that would be incurred in re-opening caved and flooded workings and re-equipping properties with mining and milling facilities. In short, there are too many variables to warrant making even a rough estimate of the activity that might prevail if the prices of gold and silver are ever raised or subsidies are ever offered to offset the increases in mining costs that have taken place since the war.

One point that can be made at this time is that even if a favorable incentive for re-activating the mines does materialize, the question of water requirements will not arise until the exploration phase of any re-activation program has been completed and determinations have been made concerning the size, kind and number of milling installations that will be needed. Even then there will be questions concerning the impact this will have on county water-use plans and these questions in turn will still be unanswerable until determinations have been made regarding the amount of water actually needed at each installation and the amount of water that will be returned to the creeks in clarified form after usage. After all, enough new water may be generated by the mine workings to provide part, if not all, of the needed water in some instances. Then too, it will be possible to settle and clarify the tailings and return the bulk of the used water to the drainage systems in most instances. In short, no final appraisal of water needs for this type of mining can be made until all the factors effecting the situation

are fully understood.

By way of summation, the picture is that there are several industrial, nonmetallic mineral situations in the county which can conceivably become minable in the future as demands for such mineral products expand in the west and as competitive occurrences located elsewhere become mined out and the needs materialize for developing new sources of supply. In addition, there are the metal mines which have in the past been productive and which in at least some instances may have capacity for reactivation. Both types of mining rate as industrial assets which in the long run can be important to the economy of the county; hence they are deserving of consideration in any planning dealing with future allocation of water resources. In this connection, however, the water requirements for the two types of mining can be appraised today in only a general way. This is that the foreseeable water requirements are not likely to prove great in the instance of the nonmetallic mineral resources deemed most likely to prove minable in the future because water does not play a dominant role in the processing that can be anticipated for these minerals. Conversely, however, water will be vitally essential in connection with most of the washing and/or milling operations that can be anticipated to accompany re-activation of metal mining. No estimate can be made at this time, though, concerning the amount of water that might be needed. There are simply too many unpredictable factors to justify even a guess.

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MINING

The mining of mineral resources is normally governed by so many obscure factors that it is virtually impossible to anticipate a time table by which predictions can be made to the effect that any given mineral, or any given occurrence, will be ripe for an operation. Under the circumstances, no one can calculate today with any degree of reliability what the water needs for mining will be in the future in any given locality. For this reason I don't intend to even venture a guess concerning the amount of water that may be needed for mining purposes in the County in the future.

There are a few constructive observations I can make, however. One is this. We do have two categories of mineral resources in the County neither of which is to be discounted when it comes to the possibility of eventual development. I can also state that it is a documented fact that the world-wide demand for mineral products is increasing steadily, and in some instances, rapidly, due to the population explosion, to the fact that our standard of living is expanding, and to the fact that many formerly backward countries are now expanding their standards of living; hence creating new demands on the world's limited supply of mineral resources.

At the same time, the world supply of mineral resources is being rapidly depleted, in the instances of some minerals, at an alarming rate. Therefore, since mineral resources are non-renewable, new occurrences must be found and developed into operations as fast as our old sources of supply become depleted. This is an economic reality that cannot be denied. It

is also an irreversible trend for which the pressure is great because the continued existence of our way of life depends on the continued availability of mineral products.

The net result, as I see it, is that this trend constitutes reason enough for believing that some of the County's now dormant mineral occurrences may eventually become operational --- even though this may not materialize for years to come --- and even though operations may never materialize in the instance of some of the mineral occurrences I will now describe.

Of the mineral categories having potential in the County, one consists of occurrences of non-metallic minerals such as limestone, diatomite, perlite, talc, bentonite and building stone. The other includes gold, silver and copper occurrences and to a lesser extent certain other metals.

With respect to the non-metallic occurrences, and to say what needs to be said briefly, the processes for converting the ores to industrially useful products primarily involves drying, burning and calcining, or some related measure of heat treatment. Thus it can be anticipated that future operations with respect to these minerals will likely require only nominal amounts of water such as are needed for fire protection, change rooms, sanitary facilities, shop and laboratory use, motorized equipment and other incidental applications of like nature.

On the other side of the ledger, and in the instance of our metallic minerals, the situation is the exact opposite. The milling of these ores can conceivably require large volumes of water depending on the size of the operation and the complexity of the required milling process.

Furthermore, this need for water will be in addition to that required for fire protection, change rooms, sanitary facilities, etc.

Whereas it is unfortunate that I can't see my way clear to cite figures concerning the possible amount of water that may be needed in the future, the thought that these remarks are intended to convey is this: --- whether the need for mining water that does materialize in the County for mining purposes is great or small, it is nonetheless essential that a supply should be available to meet that need when it does arise --- just as it is also a matter of critical importance to our well being --- and to the continuation of our way of life --- that a supply of mineral products is always available. In other words, in any planning that is done today--- and especially if it involves allocations today for the use of water in the future --- care should be taken to build sufficient flexibility into the program to cover mining needs if, and when, the demand should arise.

Report by N. S. Wagner
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