

To the Continental Tunnel Company,
Denver, Colorado.

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Gentlemen:-

In regard to the taking water through the Moffat Tunnel I beg to present the following information. In the first place the commercial opportunity here presented rests primarily on the simple fact that there is a deficiency of water on the eastern slope and an excess on the western slope.

On all sides of Denver stretch some of the most fertile, the most level and the most tillable lands in the west. Only a small part of these land are now irrigated.

The western slope abounds in streams that waste their waters into the Colorado River and thence into the Gulf of California. It will be entirely practical to gather the waters of a number of streams on the western slope, by means of wing ditches, and conduct the waters through the Moffat Tunnel.

The amount of water available for this purpose has been measured and it is estimated that over 600 sec. ft. of water can be diverted through the tunnel during the irrigation season. During the fall and winter months the volume of the flows in the streams decrease and a gradually decreasing amount, down to a minimum of 100 sec. ft., can be diverted. If proper storage facilities are provided for the fall and winter flows a total of 225,000 acre feet may be added to the water supply of the lands adjoining Denver. If water is judiciously applied an acre foot of water will irrigate an acre of land, but, as ideal conditions are seldom obtained, let us figure two acre feet of water to an acre of land, then it will be possible to irrigate 112,500 acres of land with this water.

There are over 200,000 acres of dry land under the ditches already built or projected from the South Boulder. These lands are all within 30 miles of Denver and are already crossed by one electric line and two railway systems. An adequate water supply would add

\$100.00 per acre to the value of these lands or 112,500 acres would receive an increase of value of \$11,250,000. Figuring a family of four to every ~~60~~⁷⁵⁰⁰ acres it would mean a rural population of ~~5,625~~³⁰⁰⁰⁰ people and as the census shows that the rural population is to the ~~total~~^{total} population as ~~one~~^{one} is to ~~one~~^{four} it would add ~~33,750~~³⁰⁰⁰⁰ people to the population of Denver. This does not take into account the increase of real estate values and of population that the railroad facilities would bring, this is simply the irrigation increment.

WATER POWER.

Now if we take 600 sec. ft. of water through the Moffat Tunnel and add this flow to the natural flow of South Boulder Creek we make of South Boulder one of the finest water power propositions in the state. The amount of power that may be developed depends so much on the particular ^{plan} that may be adopted that it is impossible to give an accurate estimate, but it is probable that 5,000 to 10,000 horsepower may be developed. Cheap power is a great attraction for manufacturing enterprises and it is safe to say that the water power made available by the Moffat Tunnel would material increase the yearly product of Colorado manufactured goods.

MINERALS.

There is one belt of veins which crosses the Moffat Tunnel. These veins have been explored to some extent in Mammoth Gulch and in the head of South Boulder canon. They have been found to be large strong veins carrying considerable iron pyrites and some gold. With the exceptional facilities of operation afforded by a long railroad tunnel, driven at a low altitude, it is entirely possible that this belt of veins can be worked at a handsome profit.

GEOLOGICAL.

The entire length of the Moffat Tunnel will lie in the archaic schist and gneiss which forms the back-bone of the continent. There are no faults or areas of soft, cavy ground observable on the surface, with the exception of the belt of veins mentioned above. It is not probable that these veins will be wide enough or soft to cause any material expense in the way of timbering. Judging

from surface indications, practically the entire tunnel will stand without timbering and the most serious obstacle to cheap work will be a couple of belts of very hard crystalline gneiss which occur as shown in the geological section. In a large tunnel, such as this one, hard rock is not a serious matter.