



ZEOLITE PRESENTATION  
Prairie Wind Casino SD

21 SEP 2018

Presentation Notes, QA questions

Dust mitigation of zeolite dust - Spraying down with water

Additional Thought: - Is there a way to take advantage of their negative charge to force/guide the dust into a filtration system?

QA

Is dust mitigation going to use up our water?

Depending on deposit, probably not much water is needed and usage could be kept to a minimum.

Do you have a more detailed map of zeolite in this area specifically?      Not Yet

Comment: The mine we visited didn't show much dust. Will we really have that big of a problem?

Zeolite has an advantage of retaining water, therefore dust might be minimal. However, dust mitigation should still be addressed, just in case.

How much zeolite comes out of a given land area? How big of an area do we need to mine?

Investigation 1982 estimated up to 70% zeolite (clinoptilolite) at certain areas. Most Zeolite associated with the Sharps formation (Paleogene age: Early Arikareean 30.8–20.6 million years ago). A newer survey with 2018 methods is recommended to assess mineable zeolite deposits.

Side note: Possible side benefit of significant fossil extraction (sale / display) if miners are sufficiently trained to recognize / recover fossil remains.

How much zeolite is a ton?

Zeolites have a fairly low density. Thus 1 ton is approx. 1.5 cu.yards.

OSHA regulations - Miner Health.

Noted: Err on the side of protection for mine personnel to avoid possible legal implications.

Oil Spill Mitigation - Foremost need for extracted zeolites

If you don't mine it, you have to buy it. By extracting zeolite, you could actually be helping the environment. Useful for petroleum clean-up. Also useful to clean well water.

What is the difference between bentonite clay and zeolite?

In Layman's terms: Clay is more like a magnet, whereas zeolite is like a filter. Bentonite and zeolites are often found together and assessment is needed. There is a bentonite market as well.

Possible future venture capital risks: If artificial zeolite can be produced cheaper in the future than mined natural zeolite.

How hard will it be to get an updated map?

I can do an updated map search and compilation. Additional mapping needs could be completed by MSU Denver students under the direction of a geologist.

How accurate will the map be created by students?

Map will be checked by geologist, of course. Reconnaissance map should be compiled first before final mapping project is undertaken. With such a first draft map you will get a good idea where to start.

How soon can we get the map?

If proposal can be compiled by January, student (and other) mapping can commence in May 2019.

Zeolite assessment?

Mineralogical assessment of zeolites can be done free of charge during my Spring 2019 Semester Mineralogy course, if samples can be secured and mailed to MSU Denver by mid January. Reports should be completed by Mid-May. Details and paperwork for this free service can be found here: <http://college.earthscienceeducation.net/MIN/MINID.pdf>