

# Blue Nose Limestone Property

Lincoln County, Nevada

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Contract Geologist

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## Introduction

The Blue Nose property lies within the Viola district (Pittsburg and Wells Cargo areas), which is located west of the Tule Desert along the south edge of the Clover Mountains. The claim group is 6 to 10 miles east of the Union Pacific rail line in meadow valley wash and lies within T. 8 S. – R. 68 E. and T. 8 S. – R. 69 E. Access is via the graded Carp and Bunker Peak roads.

Argentiferous lead-zinc-copper deposits in the Pittsburg area occur in the Mississippian limestone, usually near the base of the overlying altered volcanic rocks. Some contain appreciable amounts of cadmium, antimony, and molybdenum (Tschanz, C.M. and Pampeyan, E.H. 1970). The Wells Cargo area contains fluorospar deposits, with fluorite occurring as replacement bodies in dark carboniferous limestone. 11,500 tons of 70%  $\text{CaF}_2$  was produced in 1958 (Tschanz, C.M. and Pampeyan, E.H. 1970).

The Mississippian and Pennsylvanian sediments of the Pittsburg area strike northeast and dip around  $35^\circ$  northwest. There is approximately 7,500 feet of the section exposed with 1,700 feet of the Monte Cristo Limestone (Mm) favorable for further exploration and 5,200 feet of undivided limestone and sandstone (PIPI) which could contain favorable intervals. The Monte Cristo Limestone is exposed for roughly a mile in length and the PIPI for a mile and a half. Orientations of the limestones and dolomites of the Wells Cargo area are highly variable but seem to represent the apex of an anticline. The dolomite bounded limestone is a northeast striking wedge three quarters of a mile wide and five quarters of a mile long.

It is found that there is roughly 450 million tones of favorable rock, which needs to be sampled tightly in order to determine its viability.

## Geologic Mapping

Geologic mapping was completed at a scale of  $1''=1,000'$  (1:12,000) during the time period of November 3 to November 13, 2008.

Volcanic rocks undifferentiated, TKvu

The volcanic rocks of the blue nose claims bound the limestones and dolomites of both the Pittsburg and Wells Cargo areas. The unit consists of altered flows, mud flows, breccias, and tuffs, which are andesitic in appearance. Outcrops are rough, iron oxide stained, and form smooth rounded grass-covered slopes (Tschanz, C.M. and Pampeyan, E.H. 1970). The large masses of jasperoid, which cap many of the hills, are believed to have formed beneath the altered volcanic rocks (Tschanz, C.M. and Pampeyan, E.H. 1970).

#### Limestone and sandstone undivided, PIP1

There is approximately 5,200 feet of the undivided limestone and sandstone section making up the majority of the Pittsburg area. The lower contact is said to be conformable for most of the county but is not in this area. An uneven contact and the absence of the Scotty Wash Formation suggests pre-Pennsylvanian erosion. The unit consists of alternating massive dark-gray cherty limestone layers, thin-bedded yellow brown silty limestone, and dark non continuous chert. The unit weathers to form step like slopes. It would be difficult to obtain a representative bulk sampling of this unit without drilling as a bias towards resistant units would be inherent. There is potential in locating a few zones of more massive limestone and sampling along their strike.

#### Monte Cristo Limestone, Mm

I have divided what was mapped as the Monte Cristo Limestone into six subunits. Four of these, the Dawn Limestone, the Bullion Dolomite, the Arrowhead Limestone, and the Yellowpine Limestone, are members of the Monte Cristo as defined in the Goodsprings district. The other two subunits, the Joanna limestone, and an unnamed limestone which overlies it, are also present and described herein. The Anchor limestone of the Monte Cristo did not fit into the section as seen on the property but it could be concealed in the colluvium of a wash. The Yellowpine, Joanna, and unnamed limestones are mapped as one unit where they were not distinguished.

#### Unnamed Limestone, Mmul

The unnamed limestone overlying the cliff-forming Joana is 300 feet thick and is thin to medium bedded with cherty beds becoming more prominent towards the top. The unit forms two resistant limestone packages which pinch out to the north under the PIP1.

#### Joanna Limestone, Mmj

The Joanna Limestone is approximately 250 feet thick and is a massive bluish-gray, dense to coarsely crystalline cliff-forming limestone. The steep slope around the NAD 27 UTM point 737100 and 4123820 is the best location to sample the Joanna and the unnamed limestone above. Note: areas where The Yellowpine, Joanna, and unnamed limestones are mapped as one unit are colored the same as Mmj, but are labeled with Mm.

### Yellowpine Limestone, Mmyp

The Yellowpine Limestone has been variably recrystallized and bleached to be coarse crystalline white to light gray with pods of banded calcite. It is massive and medium- to thick bedded and is about 250 feet thick.

### Arrowhead Limestone, Mmah

The approximately 50 foot thick Arrowhead Limestone is a thin-bedded micritic black limestone with clay partings and local fossil hash. It generally grades from the marballed Bullion below into the limestone and finally into a 3-20% chert rich horizon. This unit is closely associated with and can be hard to distinguish from the jasperoids which cap the same ridge lines.

### Bullion Dolomite, Mmb

The Bullion Dolomite is a massive white recrystallized slope and valley forming limestone/marble which is approximately 350 feet thick.

### Dawn Limestone, Mmd

The Dawn Limestone is a chert-free dark or very light dolomite which is both thin and thick bedded. It is in both the Pittsburg and Wells Cargo area and is of unknown thickness.

### Limestone, MI

The Limestone MI of Tschanz, C.M. and Pampeyan, E.H. 1970 is much like the Limestone and sandstone undivided (PIPI), but is apparently lower in the section. This is the host unit of the Wells Cargo Mine.

### Structure

The Pittsburg area is bounded on the west by a north-northeast striking laramide fault and to the south by a west-northwest striking post laramide fault. The latter of which causes a bend in the dominant strike of northwest towards the north east. To the north the Pittsburg area is marked by an abrupt change in strike from the dominant northwest to the north east. The change is probably due to east west faulting which also offsets the units to the west as one moves farther south in the area.

The Wells Cargo area has a predominant north-northeast strike but is west dipping on the western edge and east dipping on the eastern edge. The middle is marked by highly variable dip directions suggesting a north south structure or fold axis. At the south end of the area the Wells Cargo deposit is bounded on the west by a north south structure.

Geochemical Sampling

A total of 36 rock samples were collected from the Pittsburg and Wells Cargo area in all of the above units. Approximately 3-5 pound samples were taken by chopping chunks of limestone off the outcrop being careful to remove all caliche and weathered surfaces.

Most samples contained minor amounts of free calcite in the form of veining or fossil fragments and/or traces of iron oxides. Rock sample locations and descriptions are found in table 1.

Table 1

Rock Chip Saple Data For Blue Nose Limestone Property

Name	UTM_East	UTM_North	Rock Type	Calcite %	FeOx %
KBN1	738127	4124707	cls	0	tr
KBN2	738126	4124708	mbf	0	tr
KBN3	737988	4124937	mbf	tr	tr
KBN4	737190	4125141	mls	1	0
KBN5	737372	4124905	cls	1	5
KBN6	737103	4124892	mls	tr	0
KBN7	737060	4123860	no data		
KBN8	736890	4123856	cls	1	tr
KBN9	738047	4123324	xls	20	0
KBN10	736864	4123096	mls	5	tr
KBN11	736377	4122454	cmfs	3	1
KBN12	735017	4123516	mdf	tr	2
KBN13	735124	4122929	xfs	3	tr
KBN14	735441	4123090	xfs	5	tr
KBN15	735614	4123285	xfs	1	tr
KBN16	735882	4123438	sls	5	tr
KBN17	736373	4123901	mls	1	tr
KBN18	736234	4123755	xfs	1	0
KBN19	734635	4122926	xfs	15	5
KBN20	738492	4123985	mdl	0	0
KBN21	739496	4122822	mls	3	0
KBN22	740099	4123663	xdl	3	tr
KBN23	740118	4123485	xfs	3	1
KBN24	740338	4123467	xfs	5	tr
KBN25	740482	4123499	cls	3	tr
KBN26	740358	4120945	mls	5	5
KBN27	740635	4122179	mls	20	1
KBN28	741327	4124228	xdl	3	tr
KBN29	740480	4123704	sls	5	3
KBN30	740734	4123731	cls	3	tr
KBN31	740825	4123081	mls	tr	tr
KBN32	740469	4122348	xfs	15	1
KBN33	740299	4122554	mls	tr	1
KBN34	740030	4122693	cls	tr	tr
KBN35	737146	4123601	mbf	1	tr
KBN36	740815	4121531	mls	5	1

cls-cherty limestone. mbl-marble. mls-micritic limestone. xls-crystalline limestone. cmfs-cherty micritic limestone. mdl-micritic dolomite. sls-silty limestone. xdl-crystalline dolomite.

### Summary and Recommendations

A quick estimate of the possible tonnage for the favorable marble and limestone units of the Monte Cristo Limestone is 450 million tones (assuming flat level ground and a 60° pit wall on the west side. See included scratch paper for idea of how it was figured). The 36 samples taken do not cover the included units well enough to determine the overall grade of those possible tones. It is recommended that tight sampling be undertaken along the ridges where these units are well represented in order to determine their viability. Sampling from the mines and prospects in the area should also be conducted in order to better understand the risk of contamination.

### Included information

1"=1,000' geologic mapping sheet Pittsburg Area

1"=1,000' geologic mapping sheet Wells Cargo Area

1"=1,000' geologic cross sections AA', BB', and CC'

1"=1,000' scratch paper showing figures used in tonnage calculation

### References

Tschanz, C.M., and Pampeyan, E.H., 1970, GEOLOGY AND MINERAL DEPOSITS OF LINCOLN COUNTY, NEVADA; Nevada Bureau of Mines and Geology Bulletin 73.

A = 240,000,000 ft<sup>3</sup>

B = ~~940,000~~ 150,400,000,000 ft<sup>3</sup>

C = 432,000,000,000 ft<sup>3</sup>

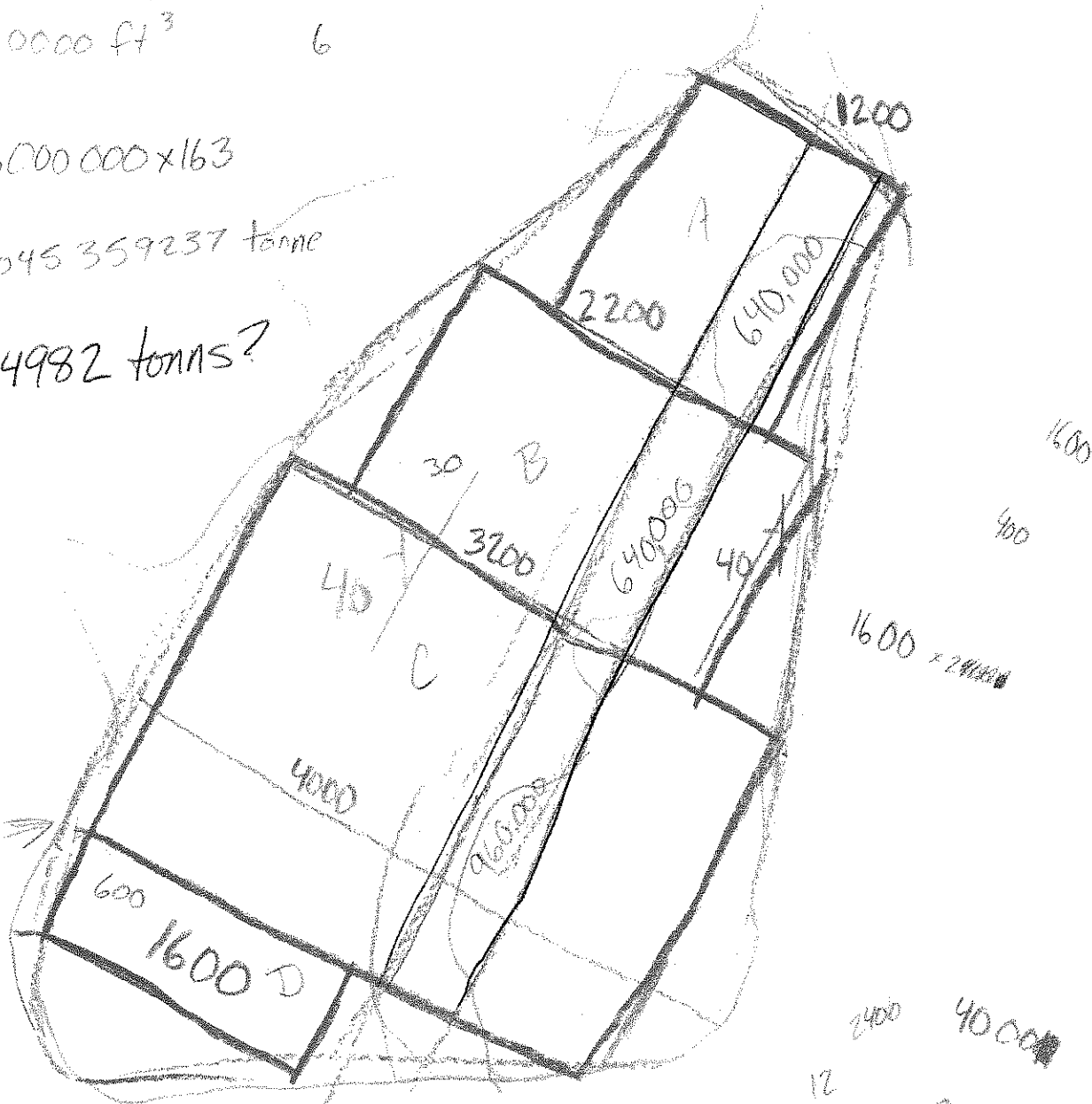
D = 432,000,000,000 ft<sup>3</sup>      6

6496000000 x 163

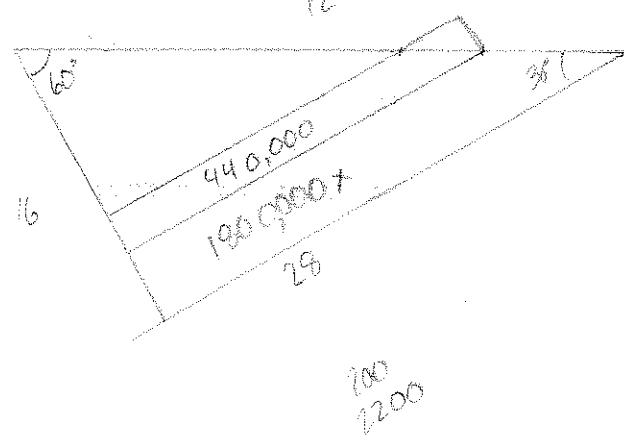
.00045359237 tonne

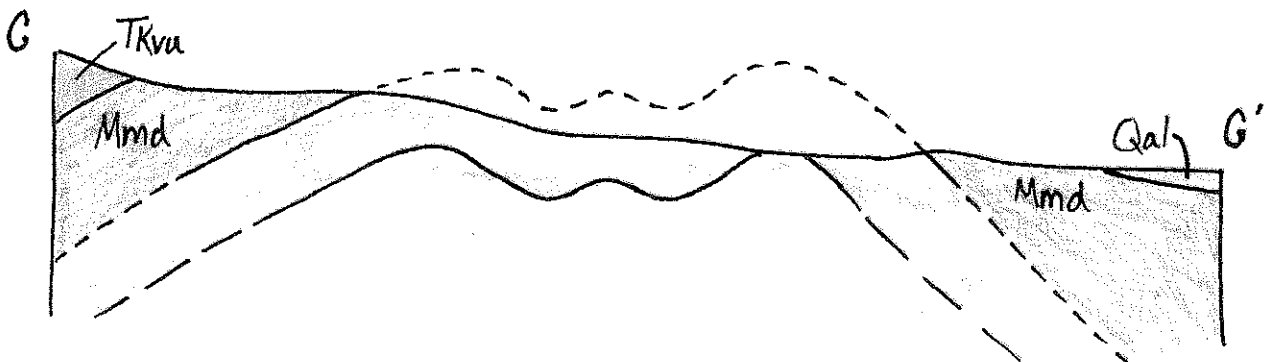
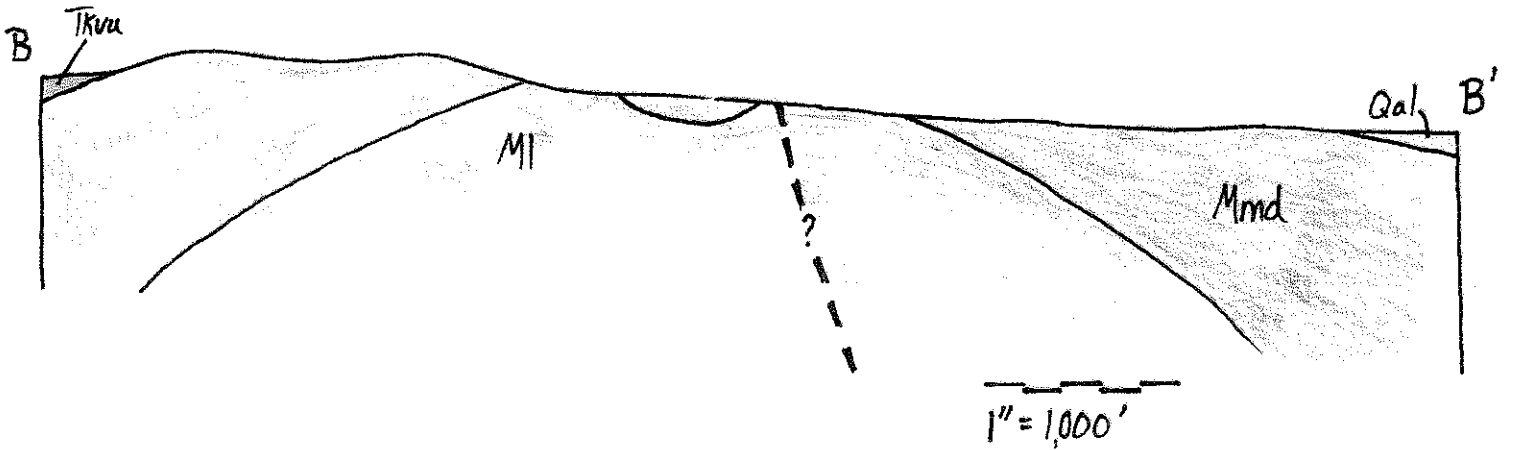
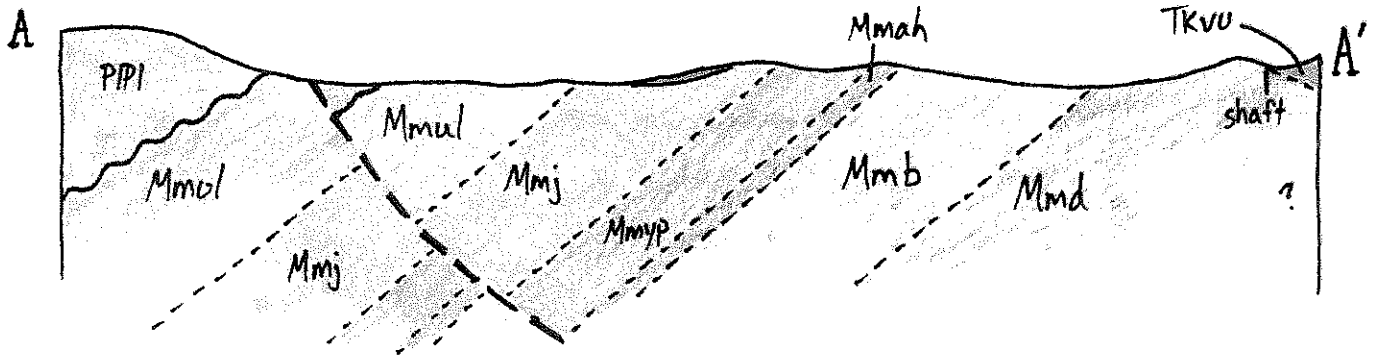
480284982 tonns?

1" = 1000'



- A = 1280,000 ft<sup>2</sup>
- B = 2,880,000 ft<sup>2</sup>
- C = 6,720,000 ft<sup>2</sup>
- D = 960,000 ft<sup>2</sup>





Cross Sections AA', BB', and CC'  
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