

MARY M. BOUCEK
 WILDLIFE & RECLAMATION BIOLOGIST
 7001 EMIGRATION CANYON ROAD
 SALT LAKE CITY, UTAH 84108

File INA/043/001
 CC: Lynn

August 27, 1986

Mr. Lynn Kunzler
 Reclamation Biologist
 Utah Division of Oil, Gas & Mining
 355 West North Temple
 #3 Triad Center, Suite 350
 Salt Lake City, Utah 84180-1203

RECEIVED
 AUG 28 1986

RE: Summit Minerals, Inc.
 Blackhawk Mine
 INA/043/001
 Summit County, Utah

FILE COPY
 DIVISION OF
 OIL, GAS & MINING

Dear Lynn:

This letter will briefly summarize the sampling methodology for use in the collection of quantitative vegetation data at the above referenced mine. These methods are detailed in the Division's Vegetation Information Guidelines pursuant to UMC 783.19 requirements.

COVER

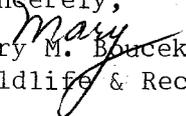
Total vegetative cover will be estimated to the nearest 1% utilizing a 1M² square quadrat. Cover of rock, litter, bare ground and cryptogams will also be estimated, the sum of which, including vegetation cover, will total 100%. Major vegetation life form cover (shrub, forb, grass) and major species cover will also be estimated within each quadrat.

DENSITY

Tree and/or shrub density, as appropriate, will be determined by use of the point-center-quarter method (Cottam & Curtis 1956). The center of each quadrat utilized to estimate cover will be used as the center for determining density by this methodology.

Each sample point will be randomly located within the appropriate reference area, the latter to be selected and marked on August 28, 1986 with the Division's approval. Sample adequacy for the above parameters will be determined utilizing the formula $t^2 s^2 / (d\bar{x})^2$ as contained in the Division's guidelines. Productivity will not be quantitatively sampled as this is a pre-existing and therefore previously disturbed mine site. However, an approximation of productivity will be obtained from the Soil Conservation Service and will be included as a statement of productivity in the submittal by Summit Minerals, Inc. pursuant to UMC 783.19.

I look forward to coordinating with you and the Division on this project and will meet with you at the mine site on the date indicated above to select the appropriate reference area(s).

Sincerely,

 Mary M. Boucek
 Wildlife & Reclamation Biologist

cc Summit Minerals, Inc.