GRUM PCMINE G8705 SURFACE ELEVATION GRIDS

1.) SURFACE TOPOGRAPHY

The topographic surface for the Grum G8705 area was digitized from the 1:2000 scale 1979 Anvil District orthophoto topographic map. Surface contours at elevation intervals of 2.5 metres were digitized as open and closed polygons. The margins of Doal Lake and the sewage lagoon were digitized as closed polygons. These polygons were extracted from PCMINE to the formatted ASCII file GRUMTOPO.DAT.

In addition the west and east margins of the model (model directions) and each of the streams were digitized as a series of points. These digitized points were extracted to an ASCII file and manually edited to correspond to open polygons with each model margin and each stream representing a separate polygon. These polygons were then appended to the GRUMTOPO.DAT file.

The program POLYSECT.FOR was then run using GRUMTOPO.DAT as the input file. POLYSECT generated east-west (model coordinate) cross-sectional profiles for each model row from the digitized contours, lakes, model margins, and streams. The cross-sections were used to linearly interpolate a surface elevation grid consisting of the elevation of the centre point of each block in the model. The surface grid was written to the formatted ASCII file GRUMTOPO.SUR. GRUMTOPO.SUR was then imported into PCMINE using module 8.

2.) OVERBURDEN/BEDROCK INTERFACE

Diamond drill holes in the Grum area triconed through the overburden and only began coring once bedrock had been reached. The Grum ledge surface therefore corresponds approximately to drill hole depths where coring was initiated. Elevations of the bedrock surface were digitized from diamond drill hole data and plotted at 1:2000 scale.

The ledge surface was then manually contoured using a 5 metre contour interval. Three drill holes (FAGA 218, FAGA 208, FAGA 085) recorded anomalously thick overburden from the drill hole records. These drill holes were ignored during contouring. The northwest corner of the model contains moderate amounts of outcrop and bulldozer scruffings with abundant phyllite chips. Obviously overburden is extremely thin in this area. A southwest-northeast trending line was drawn through the model area outlining the area containing outcrops. Northwest of this line the ledge surface was considered equivalent to the surface topography.

The resulting contour map was then digitized as open and closed polygons. As with the surface topographic map, the west and east margins of the model were digitized as points and manually edited to correspond to individual open polyons. These polygons were all extracted to the formatted ASCII file GRUMOVBD.DAT.

The Grum ledge surface grid was then generated from file

GRUMOVBD.DAT using program POLYSECT.FOR. The resulting surface grid was written to ASCII file GRUMOVBD.SUR. The Surface was then imported to the G8705 model using module 8.

3.) PIT SURFACES

Five separate pit surfaces were transferred from the G8606 to the G8705 model. This transfer was completed using a variant of the program CONMOD.FOR written by Kevin Atherton. A background elevation of 1336.0 was used for all G8705 blocks which were outside the area of the G8606 model and therefore not previously defined.

After the pit surfaces were transferred to the G8705 model, they were each merged with the G8705 surface topography grid. This union resulted in all blocks with a 1336.0 elevation being assigned the elevation corresponding to the surface topography. The surface grids containing the 1336 elevation blocks were then deleted from the G8705 model.