

CHAPTER V

CONCLUSION AND RECOMMENDATION

The unique landform manifest on aerial photographs as a ring shape depression surrounding a mound can be found in places in the NE Thailand where underlain by the sedimentary stratas of Maha Sarakham Formation in which thick layers of rock salt are interbedded. They are suggested by this study to be a surface expression of shallow salt dome. There is as yet no specified term used for this particular landform and it is created for this study.

"ADL - Annular Depression Landform". This is the landform of natural origin having its shape manifested on aerial photograph somewhat of circular feature, including a ring shape depression area surrounding a mound. They are explained as a surface expression of shallow salt dome, and the annular depression is formed superimposed on the rim syncline, followed by the effect of underground water dissolving out the salt body.

ADL can be identified by interpretation through topographic maps and remote sensing images, however, the use of aerial photographs to be viewed 3-dimensions is the best method. The total of 142 locations in the study area are identified as ADL and be plotted onto the map. They are classified according to the nature of depression landform, mound, and minor depression associated with mound. The 5 types of ADL were classified as;

Type 1, Annular depression of a single level surrounding a mound.

Type 2, Annular depression of different levels surrounding a mound.

Type 3, Annular depression with several minor depressions adjacent to a mound.

Type 4, Annular depression with minor depression developed on top of a mound.

Type 5, Annular depression with coalescing mounds.

Each nature of these types might indicate stages of development of salt dome however, further studies are necessary before any conclusion can be made.

The spatial distribution of the locations of ADL is considered to widely distributed, however they are concentrating in some places. The spatial relationship between the ADL locations and geological features is observed in this study. Although their relationships can not lead to a definite conclusion, however, it can be mentioned in this study as the followings. To regional geology, the ADL location are found only in some areas underlain by Maha Sarakham Formation, particularly the underlying thick salt layers have been proved. They are not found in the area covered by younger deposits, except the area being mapped as high terrace where thin alluvium might be expected. To lineaments, some of the ADL locations are found on lineaments or on the extension of the lineaments. Some of the ADL are aligned in places but there are no lineaments being traced on the images. To circular and anticlinal features, the ADL locations are found on the rim of the circular features, and concentrating in the areas delineated to be anticlinal features when

they are regionally viewed.

Gravity survey was carried out on four selected sites of ADL in order to obtain the related underlain geological structures. Except Ban Phri Khla area where the profile do not pass over the center of the mound, quantitative interpretation are attempted. Satisfactorily match between observed and calculated gravity values are obtained. The general shape of models are that of shallow salt dome : diapiric salt and extrusive salt (Jackson and Talbot, 1986). Ban Nam Om and Ban Khi Lek Models are diapiric salt structures while Ban Sra Hong is the extrusive salt model. The depths to the top of salt diapir are found to be 61 meters at Ban Nam Om and 50 meters at Ban Khi Lek. And the depth to the top of salt at Ban Sra Hong is found to be 30 meters. The results of gravity interpretation suggested that shallow salt dome model can be used to satisfactorily explain gravity survey.

Although the result of this study has suggested the ADL to be a surface expression of shallow salt dome, a systematic study and drilling of the selected ADL is recommended. If the ADL as suggested by this study is possible, it shall be benefits to both academical and economical approaches. The remote sensing image interpretation, especially aerial photographs to be viewed stereoscopically, shall be an efficient tool to be used in surveying of shallow salt domes by using ADL as an indicator.