# CARBONATE (LIMESTONE AND DOLOMITE) ANALYTICAL DATABASE OF UTAH

*by*

*Andrew Rupke*

## Disclaimer

# BACKGROUND AND PURPOSE

The accompanying database is a compilation of analytical data from carbonate (limestone and dolomite) samples collected in Utah and available at https://ugspub.nr.utah.gov/publications/open_file_reports/ofr-715/ofr-715.zip. A primary purpose of this database is identification of potential high-calcium limestone and high-magnesium dolomite resources in Utah, but data from chemically lower-quality limestone and dolomite are also included. The data come from numerous published and unpublished sources. The database is largely built upon Tripp's (2005) extensive limestone publication, but expands upon that compilation by adding dolomite analyses, new limestone analyses, and adding additional information to sample records from Tripp's (2005) publication. Users of this database should be aware that the quality of the analyses from source to source is likely to be quite variable and is presented "as is"; potential low-quality data were not filtered out. The database is in spreadsheet (Microsoft Excel) and geodatabase formats. A description of the database fields is given below, and a shortened version of this explanation is attached to the spreadsheet. In the explanation below, the spreadsheet heading is shown first with the geodatabase heading in parentheses. All the fields are not necessarily applicable to every sample record.

# EXPLANATION OF DATABASE FIELDS

**Sample (sample_id)** – sample number or ID from publication, report, or assigned by UGS. In some cases, the sample number was modified from the original source to make it more unique for the purposes of this database.

**Alt. ID or Bed No. (alt_id)** – alternate sample number or ID from publication, report, or assigned by UGS. If the sample record occurs in more than one source or is linked to a specific bed, that information was included in this field.

**Transect No. (transect)** – transect or drill hole from which the sample was taken.

**Thickness (thickness)** – thickness of unit represented by the sample, in feet.

**From (from)** – sample starting location along transect or drill hole, in feet. For some sample records, this information is inferred based on information from the source.

**To (to)** – sample ending location along transect or drill hole, in feet. For some sample records, this information is inferred based on information from the source.

**Age (age)** – geologic age of sampled unit.

**Updated Geologic Unit (geol_updat)** – geologic unit sampled based on location and recent geologic mapping.

**Original Reported Geologic Unit (geol_orig)** – geologic unit sampled according to original data source.

**CaCO$_3$ (caco3)** – CaCO$_3$ content in weight percent. In some cases, this was calculated from CaO content.

**CaO (cao)** – CaO content in weight percent.

**MgCO$_3$ (mgco3)** – MgCO$_3$ content in weight percent. In some cases, this was calculated from MgO content.

**MgO (mgo)** – MgO content in weight percent.

**SiO$_2$ (sio2)** – SiO$_2$ content in weight percent.

**Na$_2$O (na2o)** – Na$_2$O content in weight percent.

**Al$_2$O$_3$ (al2o3)** – Al$_2$O$_3$ content in weight percent.

**P$_2$O$_5$ (p2o5)** – P$_2$O$_5$ content in weight percent.

**S (s)** – S content in weight percent.

**K$_2$O (k2o)** – K$_2$O content in weight percent.

**TiO$_2$ (tio2)** – TiO$_2$ content in weight percent.

**MnO (mno)** – MnO content in weight percent.

**Fe$_2$O$_3$ (fe2o3)** – Fe$_2$O$_3$ content in weight percent.

**SrO (sro)** – SrO content in weight percent.

**BaO (bao)** – BaO content in weight percent.

**R$_2$O$_3$ (r2o3)** – R$_2$O$_3$ content in weight percent; R$_2$O$_3$ is a generic category for various impurities such as Fe$_2$O$_3$, Al$_2$O$_3$, etc.

**Residue/Acid Insol. (res_insol)** – weight percent of residue from dilution; acid insoluble impurities.

**LOI (loi)** – loss on ignition; weight percent of material released when sample is heated. For carbonates this is often a measure of CO$_2$ content.

**Sample Type (samp_type)** – type of sample taken such as drilling sample, outcrop chip sample, or grab sample.

**Location Information (location)** – name of area where sample was collected.

**Easting (utme_83)** – easting coordinate in meters; coordinate system is UTM Zone 12 NAD83.

**Northing (utmn_83)** – northing coordinate in meters; coordinate system is UTM Zone 12 NAD83.

**Location Quality (loc_qual)** – qualitative estimate of the quality of coordinates for each sample. Quality is estimated as low, medium, or high.

**Reference, short (reference)** – abbreviated reference for sample data source.

**Reference, full (ref_full)** – full reference for sample data.

**Comments (comment)** – general comments for sample record.

# ACKNOWLEDGMENTS

# REFERENCES

Tripp, B.T., 2005, High-calcium limestone resources of Utah: Utah Geological Survey Special Study 116, variously paginated, 7 appendices, https://doi.org/10.34191/SS-116.