

LITHIUM BRINE ANALYTICAL DATABASE OF UTAH

by

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BACKGROUND AND PURPOSE

The accompanying database is a compilation of analytical data that includes lithium concentrations from brine samples collected in Utah. The purpose of this database is to catalog the potential lithium resources in Utah and the database is available at https://ugspub.nr.utah.gov/publications/open_file_reports/ofr-730/ofr-730.zip. The data were collected from published and unpublished sources. The intent is to add additional analyses as time allows and more data become available. Users of this database should be aware that the quality of the analyses from source to source is likely to be variable and the data are presented “as is”; potential low-quality data were not removed. 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. Each field is not necessarily applicable to every sample record. Data from Great Salt Lake are not included in this database but can be found in the Utah Geological Survey’s Great Salt Lake brine chemistry database: https://geology.utah.gov/docs/xls/GSL_brine_chem_db.xlsx.

EXPLANATION OF DATABASE FIELDS

Database ID (li_db_id) – unique identification number assigned by the UGS to each sample.

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

Bed No. (bed_no) – if the sample is linked to a specific bed or stratigraphic horizon, that information was included in this field.

Well Depth (well_dpth) – total depth of well, in feet.

Water Level (wat_lev) – depth to water level from surface, in feet.

From (from) – sample starting location in well, in feet.

To (to) – sample ending location in well, in feet.

Density or Specific Gravity (den_sg) – density or specific gravity of water or brine.

Den./Sp. Grav. Note (d_sg_note) – this field indicates whether the value in the previous field is density or specific gravity and provides units; this field also provides temperature information if available; an “sg” in the field indicates specific gravity.

Li (li_mg_l) – concentration of lithium in mg/L.

Na (na_g_l) – concentration of sodium in g/L.

Mg (mg_g_l) – concentration of magnesium in g/L.

K (k_g_l) – concentration of potassium in g/L.

Ca (ca_g_l) – concentration of calcium in g/L.

HCO₃ (hco3_mg_l) – concentration of bicarbonate in mg/L.

Cl (cl_g_l) – concentration of chloride in g/L.

SO₄ (so4_g_l) – concentration of sulfate in g/L.

B (b_mg_l) – concentration of boron in mg/L.

Br (br_mg_l) – concentration of bromine in mg/L.

Si (si_mg_l) – concentration of silicon in mg/L.

Sr (sr_mg_l) – concentration of strontium in mg/L.

TDS (tds_g_l) – total dissolved solids concentration in g/L.

pH (ph) – measured pH of water or brine.

Drilling/Sample Date (samp_date) – date of drilling or sample collection.

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

Easting (utm_e_83) – easting coordinate in meters; coordinate system is UTM Zone 12 NAD83.

Northing (utm_n_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.

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