

Mineral Resource



Tags

Mine sites, Mineral deposit areas, Economic geology, Mineral resources

Metadata:

Identification_Information:

Citation:

Citation_Information:

Originator: U.S. Geological Survey

Publication_Date: 2005

Title: Mineral Resources Data System

Edition: 20100723

Geospatial_Data_Presentation_Form: map

Publication_Information:

Publication_Place: Reston, Virginia

Publisher: U.S. Geological Survey

Online_Linkage: <http://tin.er.usgs.gov/mrds/>

Online_Linkage: [http://mrdata.usgs.gov/cgi-](http://mrdata.usgs.gov/cgi-bin/mapserv?map=mrds.map&request=getcapabilities&service=WMS&version=1.1.1&)

[bin/mapserv?map=mrds.map&request=getcapabilities&service=WMS&version=1.1.1&](http://mrdata.usgs.gov/cgi-bin/mapserv?map=mrds.map&request=getcapabilities&service=WMS&version=1.1.1&)

Online_Linkage: [http://mrdata.usgs.gov/cgi-](http://mrdata.usgs.gov/cgi-bin/mapserv?map=mrds.map&request=getcapabilities&service=WFS&version=1.0.0&)

[bin/mapserv?map=mrds.map&request=getcapabilities&service=WFS&version=1.0.0&](http://mrdata.usgs.gov/cgi-bin/mapserv?map=mrds.map&request=getcapabilities&service=WFS&version=1.0.0&)

Description:

Abstract:

Mineral resource occurrence data covering the world, most thoroughly within the U.S. This database contains the records previously provided in the Mineral Resource Data System (MRDS) of USGS and the Mineral Availability System/Mineral Industry Locator System (MAS/MILS) originated in the U.S. Bureau of Mines, which is now part of USGS.

The MRDS is a large and complex relational database developed over several decades by hundreds of researchers and reporters. This product is a digest in which the fields chosen are those most likely to contain valid information.

Purpose:

This digest of the complex mineral resources database is intended for use as reference material supporting mineral resource and environmental assessments on local to regional scale worldwide.

Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 20100723

Currentness_Reference: Date when information was extracted from the main database for this digest.

Status:

Progress: Complete

Maintenance_and_Update_Frequency: As needed

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: 179.54917

East_Bounding_Coordinate: -178.8167

North_Bounding_Coordinate: 80.0

South_Bounding_Coordinate: -76.6667

Keywords:

Theme:

Theme_Keyword_Thesaurus: Alexandria Digital Library Feature Type Thesaurus

Theme_Keyword: mine sites

Theme_Keyword: mineral deposit areas

Place:

Place_Keyword_Thesaurus: Augmented FIPS 10-4 and FIPS 6-4

Place_Keyword: fLD10 = North America

Place_Keyword: fLD20 = Central America

Place_Keyword: fLD30 = South America

Place_Keyword: fLD40 = Europe

Place_Keyword: fLD50 = Africa

Place_Keyword: fLD60 = Australia and New Zealand

Place_Keyword: fLD70 = Asia

Place_Keyword: fLD80 = Asia Minor and Middle East

Place_Keyword: fLD90 = Southeast Asia

Theme:

Theme_Keyword_Thesaurus: USGS Thesaurus

Theme_Keyword: economic geology

Theme_Keyword: mineral resources

Theme:

Theme_Keyword_Thesaurus: none

Theme_Keyword: MRDS

Theme:

Theme_Keyword_Thesaurus: ISO 19115 Topic Categories

Theme_Keyword: geoscientificInformation

Access_Constraints: none

Use_Constraints: none

Point_of_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Paul G Schruben

Contact_Organization: USGS ER GD

Contact_Address:

Address_Type: mailing address

Address: 12201 Sunrise Valley Drive

City: Reston

State_or_Province: VA

Postal_Code: 20192-0002

Country: USA

Contact_Voice_Telephone: 703-648-6142

Contact_Facsimile_Telephone: 703-648-6383

Contact_Electronic_Mail_Address: pschrube@usgs.gov

Data_Set_Credit:

Hundreds of people have contributed to the development of MRDS and MAS/MILS over several decades. The present digest owes much of its coherence to Bill Ferguson, Bruce Lipin, and Paul Schruben of USGS.

Native_Data_Set_Environment:

The originating database is now stored in Oracle RDBMS. The present product is provided through MySQL using PHP.

Data_Quality_Information:

Attribute_Accuracy:

Attribute_Accuracy_Report:

Collected over many decades, this information is highly variable in quality. Currency of individual records is variable as well, so it is likely that some information will be found to be out of date. This is a subject of continuing refinement by the USGS and its cooperators.

Logical_Consistency_Report:

Collected and reported by numerous diverse people, the descriptions provided are not highly consistent in structure or terminology.

Recent revision of the MRDS database has begun to address this issue, and the present database digest contains fields chosen for their general consistency, though much work remains to be done.

Completeness_Report:

The database is generally sparse; many records have no information for a given field. A few fields required for proper processing are complete throughout. The number of records lacking data in each field is shown in the list below with the percent of records lacking data for that field:

>Field	Missing values	
>Label	Number	Percent
>-----		
>DEP_ID	0	0.0
>MRDS_ID	149235	49.0
>MAS_ID	110652	36.4
>SITE_NAME	0	0.0
>LATITUDE	4033	1.3
>LONGITUDE	4033	1.3
>REGION	58555	19.2
>COUNTRY	58555	19.2
>STATE	58762	19.3
>COUNTY	65215	21.4
>DISTRICT	254769	83.7
>ADMIN	299777	98.5
>LAND_STAT	114367	37.6
>COM_TYPE	34	0.0
>COM_MAJOR	22335	7.3
>COM_MINOR	285184	93.7
>COM_TRACE	239278	78.6
>OPER_TYPE	0	0.0
>DEP_TYPE	269516	88.6
>PROD_SIZE	194976	64.1
>DEV_STAT	0	0.0
>ORE	236479	77.7
>GANGUE	272740	89.6
>OTHER_MATL	294207	96.7
>OREBODY_FM	264927	87.1
>WORK_TYPE	238249	78.3
>MODEL	292387	96.1
>ALTERATION	289757	95.2
>CONC_PROC	293637	96.5
>PREV_NAME	241287	79.3
>ORE_CTRL	279810	91.9
>REPORTER	36	0.0
>HROCK_UNIT	268180	88.1
>HROCK_CODE	236050	77.6
>AROCK_UNIT	291593	95.8
>AROCK_CODE	278263	91.4
>STRUCTURE	280348	92.1
>TECTONIC	285058	93.7
>REF	25211	8.3

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

Positional information is highly variable. In the best cases this information was provided by plotting the location on a 7.5 minute topographic map, however many records were located on the basis of published reports containing imprecise or scant information on the specific geographic location. Approximately 4000 records have no reliable geographic coordinates, although about 114 of those have other locational information systematic enough to warrant placement within the controlled vocabulary used to select data for analysis on the web.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: George T. Mason, Jr.
Originator: Raymond E. Arndt
Title: Mineral Resources Data System (MRDS)
Publication_Date: 1996
Edition: 1

Series_Information:

Series_Name: U.S. Geological Survey Digital Data Series
Issue_Identification: DDS-20

Publication_Information:

Publication_Place: Reston, VA
Publisher: U.S. Geological Survey

Type_of_Source_Media: CD-ROM

Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:
Beginning_Date: 1968
Ending_Date: 1998

Source_Currentness_Reference: Period in which information was added to the MRDS.

Source_Citation_Abbreviation: DDS-20

Source_Contribution: Previous publication of the MRDS data

Source_Information:

Source_Citation:

Citation_Information:

Originator: McFaul, Edward J.
Originator: Mason, George T.
Originator: Ferguson, William B.
Originator: Lipin, Bruce R.
Publication_Date: 2000
Title: U.S. Geological Survey mineral databases; MRDS and MAS/MILS

Series_Information:

Series_Name: U.S. Geological Survey Digital Data Series
Issue_Identification: DDS-52

Publication_Information:

Publication_Place: Reston, Virginia
Publisher: U.S. Geological Survey
Other_Citation_Details: ISBN: 0607940212

Online_Linkage:

http://store.usgs.gov/scripts/wgate/ZWW20/?~theme=gp&OSTORE=USGSGP&~OKCODE=STARTMATL&g_matnr=18584

Type_of_Source_Media: CD-ROM

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:
Calendar_Date: 2000

Source_Currentness_Reference: publication date

Source_Citation_Abbreviation: DDS-52

Source_Contribution: Previously published versions of MRDS and MAS/MILS

Source_Information:

Source_Citation:

Citation_Information:

Originator: U.S. Geological Survey
Publication_Date: 2005
Title: Mineral Resource Data System
Other_Citation_Details: relational database for internal development and refinement

Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:
Beginning_Date: 1996
Ending_Date: 2005

Source_Currentness_Reference:

Period during which the data were migrated from the original databases to the Oracle RDBMS.

Source_Citation_Abbreviation: Internal RDBMS

Source_Contribution: This version of the database is the source for the current digest.

Process_Step:

Process_Description:

Conversion of MRDS and MAS/MILS for use as a combined minerals database within the Oracle relational database management system proceeded under the general supervision of Bruce Lipin of USGS.

Review of many database fields resulted in significant simplification, harmonization among records within these databases and between the databases, and elimination of duplicate records.

The resulting relational database is currently maintained by William Ferguson under the supervision of Paul Schruben.

Source_Used_Citation_Abbreviation: DDS-52

Process_Date: 1996 - 2004

Source_Produced_Citation_Abbreviation: Internal RDBMS

Process_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Paul G Schruben

Contact_Organization: USGS ER GD

Contact_Address:

Address_Type: mailing address

Address: 12201 Sunrise Valley Drive

City: Reston

State_or_Province: VA

Postal_Code: 20192-0002

Country: USA

Contact_Voice_Telephone: 703-648-6142

Contact_Facsimile_Telephone: 703-648-6383

Contact_Electronic_Mail_Address: pschrube@usgs.gov

Process_Step:

Process_Description:

This description refers to PHP scripts that are downloadable as part of <http://tin.er.usgs.gov/mrds/metadata/scripts.zip>

Select fields and tables from the Oracle RDBMS are extracted using the script pull.php to produce local copies of the tables containing only those fields needed to produce the current digest.

The script combine.php draws data from these local tables to create a single monolithic table with one row per mineral resource record.

At this writing a number of corrections are made to the data given for the form of orebodies. These changes include the elimination of the useless value "SEE DEPOSIT DESCRIPTION COMMENTS", the elimination of empty parentheses from most records, replacement of the abbreviation 'IRREG' with the more common complete value 'IRREGULAR', and especially a complex analysis of most values originating in the MAS/MILS database. These changes are described by the script orebody-fix.php.

Additional modifications are made to the geographic locations of about 4300 records whose coordinates are given in the source database as the South Pole. These coordinates are replaced with NULL values in the current database. The data selection software in the current distribution web site allows some of these records to be retrieved because some of the records contained additional information linking them to specific geographic areas. These changes are carried out by the script place-fix.php.

Information about host rocks and associated rocks was subject to additional correction using the SQL statements in fix-rock.php.

This table is used to create the GIS shapefiles and other formats available for download.

Source_Used_Citation_Abbreviation: Internal RDBMS

Process_Date: 2005

Process_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Peter N Schweitzer

Contact_Organization: U.S. Geological Survey, ER

Contact_Position: Geologist

Contact_Address:

Address_Type: mailing address

Address:

Mail Stop 954

12201 Sunrise Valley Drive

City: Reston

State_or_Province: VA

Postal_Code: 20192

Country: USA

Contact_Voice_Telephone: 703-648-6533

Contact_Facsimile_Telephone: 703-648-6252

Contact_Electronic_Mail_Address: pschweitzer@usgs.gov

Spatial_Data_Organization_Information:

Direct_Spatial_Reference_Method: Point

Point_and_Vector_Object_Information:

SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Entity point

Point_and_Vector_Object_Count: 304328

Spatial_Reference_Information:

Horizontal_Coordinate_System_Definition:

Geographic:

Latitude_Resolution: 0.0001

Longitude_Resolution: 0.0001

Geographic_Coordinate_Units: decimal degrees

Geodetic_Model:

Horizontal_Datum_Name: World Geodetic System 1984

Ellipsoid_Name: WGS 84

Semi-major_Axis: 6378137

Denominator_of_Flattening_Ratio: 298.257

Entity_and_Attribute_Information:

Detailed_Description:

Entity_Type:

Entity_Type_Label: mrds.dbf

Entity_Type_Definition: Mineral resource records

Entity_Type_Definition_Source: USGS

Attribute:

Attribute_Label: DEP_ID

Attribute_Definition:

Deposit identification number.

A unique 12-digit system generated sequence number which references records of information pertaining to a mineral property.

Textual values of no more than 12 characters.

Attribute:

Attribute_Label: MRDS_ID

Attribute_Definition:

MRDS identification number.

Identification number used to refer to this entry in the Mineral Resources Data System, if the record appeared in that database.

Textual values of no more than 7 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.
149235 records have no value for MRDS_ID.

Attribute:

Attribute_Label: MAS_ID

Attribute_Definition:

MAS/MILS identification number.

Identification number for this site as it appeared in the Mineral Availability System/Mineral Industry Locator System database,.
Textual values of no more than 10 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

110652 records have no value for MAS_ID.

Attribute:

Attribute_Label: SITE_NAME

Attribute_Definition:

Name of the site, deposit, or operation.

Current (preferred) form of the name of the site, deposit, or operation to which the record refers.

Textual values of no more than 70 characters.

Attribute:

Attribute_Label: LATITUDE

Attribute_Definition:

Latitude.

Geographic latitude of the site, WGS84 (if needed).

Real numbers stored in double precision.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

4033 records have no value for LATITUDE.

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: -76.6667

Range_Domain_Maximum: 80

Attribute_Units_of_Measure:

Attribute:

Attribute_Label: LONGITUDE

Attribute_Definition:

Longitude.

Geographic longitude of the site, WGS84 (if needed).

Real numbers stored in double precision.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

4033 records have no value for LONGITUDE.

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: -178.8167

Range_Domain_Maximum: 179.54917

Attribute_Units_of_Measure:

Attribute:

Attribute_Label: REGION

Attribute_Definition:

Geographic region.

Code indicating the geographic region.
Textual values of no more than 2 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

58555 records have no value for REGION.

Attribute:

Attribute_Label: COUNTRY

Attribute_Definition:

Country name.

Name of the country in which the site is located.
Textual values of no more than 20 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

58555 records have no value for COUNTRY.

Attribute:

Attribute_Label: STATE

Attribute_Definition:

State name.

Name of the state or province in which the site is located.
Textual values of no more than 32 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

58762 records have no value for STATE.

Attribute:

Attribute_Label: COUNTY

Attribute_Definition:

County name.

Name of the county in which the site is located.
Textual values of no more than 96 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

65215 records have no value for COUNTY.

Attribute:

Attribute_Label: DISTRICT

Attribute_Definition:

Mining district.

The most recent name of the mining district, subdistrict, or area.
Textual values of no more than 96 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

254769 records have no value for DISTRICT.

Attribute:

Attribute_Label: ADMIN

Attribute_Definition:

Administrative area.

Administrative unit area name. The area type is given in the LAND_STAT field.

Textual values of no more than 160 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

299777 records have no value for ADMIN.

Attribute:

Attribute_Label: LAND_STAT

Attribute_Definition:

Administrative area type.

Type of geographic area named in ADMIN.

Textual values of no more than 35 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

114367 records have no value for LAND_STAT.

Attribute:

Attribute_Label: COM_TYPE

Attribute_Definition:

Commodity type.

Type of commodities present: metallic (M), non-metallic (N), or both (B).

Textual values of no more than 1 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

34 records have no value for COM_TYPE.

Attribute:

Attribute_Label: COM_MAJOR

Attribute_Definition:

Major commodities.

Major commodities present, a comma-separated list. Commodity qualifiers follow each commodity, delimited by a hyphen.

Textual values of no more than 128 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

22335 records have no value for COM_MAJOR.

Attribute:

Attribute_Label: COM_MINOR

Attribute_Definition:

Minor commodities.

Minor commodities present, a comma-separated list. Commodity qualifiers follow each commodity, delimited by a hyphen.

Textual values of no more than 128 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

285184 records have no value for COM_MINOR.

Attribute:

Attribute_Label: COM_TRACE

Attribute_Definition:

Trace commodities.

Trace commodities present, a comma-separated list. Commodity qualifiers follow each commodity, delimited by a hyphen.

Textual values of no more than 128 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

239278 records have no value for COM_TRACE.

Attribute:

Attribute_Label: OPER_TYPE

Attribute_Definition:

Operation type.

Type of operation existing or proposed at the site.

Textual values of no more than 30 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Surface

Enumerated_Domain_Value_Definition: Open-pit or open-cast mine in which the overburden is completely removed and the sides of the mine are typically terraced away from the center. The overburden and ore are usually transported out of the pit in trucks. Includes quarry operations which are often open at the front as well, and strip mines which are open at both ends.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Underground

Enumerated_Domain_Value_Definition: The opening to the mine is small relative to the size of the workings. The opening is usually called a shaft or adit. The ore is transported out of the mine in cars, buckets, on conveyor belts, etc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Surface-Underground

Enumerated_Domain_Value_Definition: Both surface and underground operations are present

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Placer

Enumerated_Domain_Value_Definition: A stream-sediment or beach-sand mine.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Offshore

Enumerated_Domain_Value_Definition: Underwater mining operation such as for Mn nodules.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Well

Enumerated_Domain_Value_Definition: The product is extracted through a borehole. Water, oil, and gas are the most common products, but includes solution-mining or in-situ leaching in which liquid solvent is circulated underground to extract the material.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Processing Plant

Enumerated_Domain_Value_Definition: No ore extraction at the site, only a mill, smelter, etc.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Leach

Enumerated_Domain_Value_Definition: Ore or concentrate is placed on an impervious pad, and a solvent is percolated or forced through the heap. The desired mineral or solute is dissolved into the leachate, from which it is more easily refined.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Brine Operation

Enumerated_Domain_Value_Definition: The product, usually a type of salt, produced from a well or open pan.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Geothermal

Enumerated_Domain_Value_Definition: Energy extracted from heat stored in the earth.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Unknown

Enumerated_Domain_Value_Definition: Unknown or undetermined by evaluator

Attribute:

Attribute_Label: DEP_TYPE

Attribute_Definition:

Deposit type.

General type of deposit or resource present at the site.

Textual values of no more than 40 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

269516 records have no value for DEP_TYPE.

Attribute:

Attribute_Label: PROD_SIZE

Attribute_Definition:

Production size.

A broad characterization of the magnitude of production at the site.

Textual values of no more than 12 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

194976 records have no value for PROD_SIZE.

Attribute:

Attribute_Label: DEV_STAT

Attribute_Definition:

Development status.

Status of development of the resource or operation.

Textual values of no more than 25 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Occurrence

Enumerated_Domain_Value_Definition: Ore mineralization in outcrop, shallow pit or pits, or isolated drill hole. Grade, tonnage, and extent of mineralization essentially unknown. No production has taken place and there has been no or little activity since discovery with the possible exception of routine claim maintenance.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Prospect

Enumerated_Domain_Value_Definition: A deposit that has gone beyond the occurrence stage. That is subsequent work such as surface trenching, adits, or shafts, drill holes, extensive geophysics, geochemistry, and/or geologic mapping has been carried out. Enough work has been done to at least estimate grade and tonnage. The deposits may or may not have undergone feasibility studies that would lead to a decision on going into production.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Producer

Enumerated_Domain_Value_Definition: A mine in production at the time the data was entered. An intermittent producer that produces on demand or seasonally with variable lengths of inactivity is considered a producer.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Past Producer

Enumerated_Domain_Value_Definition: A mine formerly operating that has closed, where the equipment or structures may have been removed or abandoned.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Plant

Enumerated_Domain_Value_Definition: A processing plant (smelter, refiner, beneficiation, etc.) that may or may not be currently producing at the time of data entry. A plant will have no geological information associated with it.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Unknown

Enumerated_Domain_Value_Definition: At the time of data entry, either the development status was unknown or the data source this record came from did not specify this value.

Attribute:

Attribute_Label: ORE

Attribute_Definition:

Ore minerals or materials.

Name of the ore mineral or material found in this deposit.

Textual values of no more than 255 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

236479 records have no value for ORE.

Attribute:

Attribute_Label: GANGUE

Attribute_Definition:

Gangue minerals or materials.

Name of the gangue mineral or material found in this deposit.

Textual values of no more than 255 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

272740 records have no value for GANGUE.

Attribute:

Attribute_Label: OTHER_MATL

Attribute_Definition:

Other minerals or materials.

Name of other minerals or materials found in this deposit.

Textual values of no more than 255 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

294207 records have no value for OTHER_MATL.

Attribute:

Attribute_Label: OREBODY_FM

Attribute_Definition:

Ore body form.

Form and shape of the ore body.

Textual values of no more than 255 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

264927 records have no value for OREBODY_FM.

Attribute:

Attribute_Label: WORK_TYPE

Attribute_Definition:

Workings type.

General type of workings at the site.

Textual values of no more than 64 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

238249 records have no value for WORK_TYPE.

Attribute:

Attribute_Label: MODEL

Attribute_Definition:

Mineral deposit model.

Mineral deposit models that characterize the site. Multiple models are delimited by braces, with a model number for each.

Textual values of no more than 80 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

292387 records have no value for MODEL.

Attribute:

Attribute_Label: ALTERATION

Attribute_Definition:

Alteration processes.

Geochemical alteration, if any, believed to have been important in forming or modifying the ore materials of a deposit.

Textual values of no more than 255 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

289757 records have no value for ALTERATION.

Attribute:

Attribute_Label: CONC_PROC

Attribute_Definition:

Concentration processes.

Geological processes that are believed to have occurred to concentrate ore materials in the deposit.

Textual values of no more than 255 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

293637 records have no value for CONC_PROC.

Attribute:

Attribute_Label: PREV_NAME

Attribute_Definition:

Previous names.

Names by which the site or operation has been known in the past.

Textual values of no more than 255 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

241287 records have no value for PREV_NAME.

Attribute:

Attribute_Label: ORE_CTRL

Attribute_Definition:

Ore controls.

Geologic features, typically structural, that exert control over the form, extent, or character of the deposit.

Textual values of no more than 255 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

279810 records have no value for ORE_CTRL.

Attribute:

Attribute_Label: REPORTER

Attribute_Definition:

Reporter.

Names of the persons primarily responsible for entering information about the site.

Textual values of no more than 224 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

36 records have no value for REPORTER.

Attribute:

Attribute_Label: HROCK_UNIT

Attribute_Definition:

Host rock unit name.

Lithologic and stratigraphic information regarding the host rocks for the ore deposit.

Textual values of no more than 255 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

268180 records have no value for HROCK_UNIT.

Attribute:

Attribute_Label: HROCK_CODE

Attribute_Definition:

Host rock type code.

Integer number(s) indicating the type of host rocks.

Textual values of no more than 40 characters.

Attribute_Definition_Source:

Rock names, their hierarchical relationships, and definitions appear to be derived from Bruce Johnson's simplified classification of lithology for geologic map units, "LithClass 6". However the numerical codes given here are not part of that work.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

236050 records have no value for HROCK_CODE.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 1

Enumerated_Domain_Value_Definition:

Unconsolidated Deposit

Dominantly unsorted and unstratified drift, generally unconsolidated, deposited directly by and underneath a glacier without subsequent reworking by meltwater

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 2

Enumerated_Domain_Value_Definition:

Unconsolidated Deposit > Alluvium

A general term for clay, silt, sand, gravel or similar unconsolidated detrital material, deposited during comparatively recent geologic time by a stream or other body of running water, as a sorted or semi-sorted sediment.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 3

Enumerated_Domain_Value_Definition:

Unconsolidated Deposit > Beach Sand

A loose aggregate of unlithified mineral or rock particles of sand size forming a beach (the relatively thick and temporary accumulation of loose water-borne material that is in active transit along, or deposited on, the shore zone between the limits of low water and high water)

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 4

Enumerated_Domain_Value_Definition:

Unconsolidated Deposit > Dune Sand

A type of blown sand that has been piled up by the wind into a sand dune, usually consisting of rounded mineral grains, commonly quartz, having diameters ranging from 0.1 to 1 mm

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 5

Enumerated_Domain_Value_Definition:

Unconsolidated Deposit > Loess

A widespread, homogeneous, commonly nonstratified, porous, friable, slightly coherent, usually highly calcareous, fine-grained blanket deposit, consisting predominantly of silt with subordinate grain sizes ranging from clay to fine sand.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 6

Enumerated_Domain_Value_Definition:

Unconsolidated Deposit > Volcanic Ash

A fine pyroclastic material (under 2.0 mm in diameter). The term usually refers to the unconsolidated material

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 7

Enumerated_Domain_Value_Definition:

Unconsolidated Deposit > Colluvium

A general term applied to any loose, heterogeneous, and incoherent mass of soil material and/or rock fragments

deposited by rainwash, sheetwash, or slow, continuous downslope creep, usually collecting at the base of gentle slopes or hillsides.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 8

Enumerated_Domain_Value_Definition:

Unconsolidated Deposit > Till

Dominantly unsorted and unstratified drift, generally unconsolidated, deposited directly by and underneath a glacier without subsequent reworking by meltwater

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 9

Enumerated_Domain_Value_Definition:

Unconsolidated Deposit > Glacial Sediment

Stratified glacial drift deposited by, or reworked by running water, or deposited in standing water

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 10

Enumerated_Domain_Value_Definition:

Unconsolidated Deposit > Peat

An unconsolidated deposit of semicarbonized plant remains in a water saturated environment, such as a bog or fen, and of persistently high moisture content (at least 75 percent).

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 11

Enumerated_Domain_Value_Definition:

Unconsolidated Deposit > Coral

A hard calcareous substance consisting of the continuous skeleton secreted by coral polyps for their support and habitation and found in single specimens growing plant-like on the sea bottom or in extensive, solidified accumulations (coral reefs).

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 12

Enumerated_Domain_Value_Definition:

Unconsolidated Deposit > Clay, Mud

A loose, earthy, extremely fine-grained, natural sediment composed primarily of clay-size or colloidal particles and characterized by high plasticity and by a considerable content of clay minerals.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 13

Enumerated_Domain_Value_Definition:

Unconsolidated Deposit > Silt

A loose aggregate of unlithified mineral or rock particles of silt size (1/256 to 1/16 mm); an unconsolidated deposit consisting essentially of fine-grained clastic particles.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 14

Enumerated_Domain_Value_Definition:

Unconsolidated Deposit > Sand

A loose aggregate of unlithified mineral or rock particles of sand size (1/16 to 2 mm); an unconsolidated deposit consisting essentially of medium-grained clastic particles.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 15

Enumerated_Domain_Value_Definition:

Unconsolidated Deposit > Gravel

A loose accumulation of rock fragments composed predominantly of more or less rounded pebbles and small stones.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 16

Enumerated_Domain_Value_Definition:

Unconsolidated Deposit > Sand And Gravel

A loose aggregate of unlithified mineral or rock particles of sand size (1/16 to 2 mm); an unconsolidated deposit consisting essentially of medium-grained clastic particles, plus a loose accumulation of rock fragments composed predominantly of more or less rounded pebbles and small stones.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 17

Enumerated_Domain_Value_Definition:

Unconsolidated Deposit > Brine

Saline waters containing high amounts of Na, Ca, K, Cl, and other soluble elements.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 18

Enumerated_Domain_Value_Definition:

Unconsolidated Deposit > Seafloor

The surface of the rock or sediments at the bottom of the sea.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 19

Enumerated_Domain_Value_Definition:

Sedimentary Rock

A rock resulting from the consolidation of loose sediment that has accumulated in layers

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 20

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Clastic Sedimentary Rock

A composed principally of broken fragments that are derived from

preexisting rocks or minerals and that have been transported some distance from their place of origin.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 21

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Clastic Sedimentary Rock > Mudstone

A general term that includes claystone, siltstone, shale, and argillite, and that should be used only when the amounts of clay-sized and silt-sized particles are not known or specified, or cannot be precisely identified.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 22

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Clastic Sedimentary Rock > Mudstone > Claystone

An indurated rock having more than 67 percent clay-sized minerals.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 23

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Clastic Sedimentary Rock > Mudstone > Bentonite

A soft, plastic, porous, light-colored rock composed essentially of clay minerals of the montmorillonite (smectite) group plus colloidal silica, and produced by devitrification and accompanying chemical alteration of a glassy igneous material, usually a tuff or volcanic ash

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 24

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Clastic Sedimentary Rock > Shale

A laminated, indurated rock having more than 67 percent clay-sized minerals.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 25

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Clastic Sedimentary Rock > Shale > Black Shale

A dark, thinly laminated carbonaceous shale, exceptionally rich in organic matter (5 percent or more carbon content) and sulfide (esp. iron sulfide, usually pyrite), and often containing unusual concentrations of certain trace elements (U, V, Cu, Ni).

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 26

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Clastic Sedimentary Rock > Shale > Oil Shale

A kerogen-bearing, finely laminated brown or black sedimentary rock that will yield liquid or gaseous hydrocarbon on distillation.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 27

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Clastic Sedimentary Rock > Argillite

A compact rock derived either from mudstone or shale, that has undergone a somewhat higher degree of induration than mudstone or shale but is less clearly laminated than shale and without its fissility, and that lacks the cleavage distinctive of slate.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 28

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Clastic Sedimentary Rock > Siltstone

An indurated silt having the texture and composition of shale but lacking its fine lamination or fissility; a massive mudstone in which silt-sized particles predominate over clay-sized particles.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 29

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Clastic Sedimentary Rock > Sandstone

A medium-grained clastic sedimentary rock composed of abundant sand-sized fragments, which may have a finer-grained matrix (silt or clay), and which is more or less indurated by a cementing material

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 30

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Clastic Sedimentary Rock > Orthoquartzite

A clastic sedimentary rock that is made up almost exclusively of quartz sand (with or without chert), that is relatively free of or lacks a fine-grained matrix; a quartzite of sedimentary origin, or a "pure quartz sandstone".

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 31

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Clastic Sedimentary Rock > Calcarenite

A clastic sedimentary rock that is made up predominantly of recycled carbonate particles of sand size; a consolidated calcareous sand

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 32

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Clastic Sedimentary Rock > Arkose

A feldspar-rich sandstone, commonly coarse-grained and pink or reddish, that is typically composed of angular to subangular grains that may be either poorly or moderately well sorted.

Quartz is usually the dominant mineral, with feldspars constituting at least 25 percent.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 33

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Clastic Sedimentary Rock > Wacke

A "dirty" sandstone that consists of a mixed variety of unsorted or poorly sorted mineral and rock fragments and of an abundant matrix of clay and fine silt; specif. an impure sandstone containing more than 10 percent argillaceous matrix.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 34

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Clastic Sedimentary Rock > Graywacke

a dark gray, firmly indurated, coarse-grained sandstone that consists of poorly sorted angular to subangular grains of quartz and feldspar, with a variety of dark rock and mineral fragments embedded in a compact clayey matrix having the general composition of slate and containing an abundance of very fine-grained illite, sericite, and chloritic minerals.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 35

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Clastic Sedimentary Rock > Conglomerate

A coarse-grained clastic sedimentary rock, composed of rounded to subangular fragments larger than 2 mm in diameter typically containing fine-grained particles in the interstices, and commonly cemented by calcium carbonate, iron oxide, silica, or hardened clay

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 36

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Clastic Sedimentary Rock > Sedimentary Breccia

A breccia (coarse-grained clastic rock composed of angular broken rock fragments held together by a mineral cement or a fine-grained matrix) formed by sedimentary processes

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 37

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Clastic Sedimentary Rock > Olistostrome

A sedimentary deposit consisting of a chaotic mass of intimately mixed heterogeneous materials (such as blocks and muds) that accumulated as a semi-fluid body by submarine gravity sliding or slumping of unconsolidated sediments.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 38

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Clastic Sedimentary Rock > Lake Sediments

Sediments laid on the floor of a lake, usually coarse grained near shore and rapidly changing to fine-grained clay and limestone in deeper water.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 39

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Carbonate

A sedimentary rock composed of more than 50 percent by weight carbonate minerals

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 40

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Carbonate > Limestone

A sedimentary rock consisting chiefly (more than 50 percent by weight or by areal percentages under the microscope) of calcium carbonate, primarily in the form of the mineral calcite.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 41

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Carbonate > Dolomite

A carbonate sedimentary rock of which more than 50 percent by weight or by areal percentages under the microscope consists of the mineral dolomite

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 42

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Mixed Clastic/Carbonate Rock

An undivided mixture of clastic and carbonate sedimentary rocks.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 43

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Mixed Clastic/Volcanic Rock

An undivided mixture of clastic and carbonate sedimentary rocks.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 44

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Phosphorite

A sedimentary rock with a high enough content of phosphate minerals to be of economic interest.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 45

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Chemical Sediment

A sedimentary rock composed primarily of material formed directly by precipitation from solution or colloidal suspension or by the deposition of insoluble precipitates

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 46

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Chemical Sediment > Evaporite

A nonclastic sedimentary rock composed primarily of minerals produced from a saline solution as a result of extensive or total evaporation of the solvent.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 47

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Chemical Sediment > Salt

An evaporite primarily composed of sodium chloride.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 48

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Chemical Sediment > Chert

A hard, extremely dense or compact, dull to semivitreous, microcrystalline or cryptocrystalline sedimentary rock, consisting dominantly of interlocking crystals of quartz less than 30 cm in diameter.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 49

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Chemical Sediment > Iron Formation

A chemical sedimentary rock, typically thin-bedded and/or finely laminated, containing at least 15 percent iron of sedimentary origin, and commonly but not necessarily containing layers of chert

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 50

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Chemical Sediment > Exhalite

A chemical sedimentary rock, usually containing oxide, carbonate, or sulfide as anions, and iron, magnesium, base metals, and gold as cations, formed by the issuance of volcanically derived fluids onto the sea floor or into the sea

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 51

Enumerated_Domain_Value_Definition:

Sedimentary Rock > Coal

A readily combustible rock containing more than 50 percent by weight and more than 70 percent by volume carbonaceous material, formed by compaction and induration of variously altered plant remains

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: 52
Enumerated_Domain_Value_Definition:
Sedimentary Rock > Diatomite

A light-colored, soft, friable, siliceous sedimentary rock consisting chiefly of opaline frustules of the diatom.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: 53
Enumerated_Domain_Value_Definition:
Volcanic Rock (Aphanitic)

A generally finely crystalline or glassy igneous rock resulting from volcanic action at or near the Earth's surface, either ejected explosively or extruded as a lava. The term includes near-surface intrusions that form a part of the volcanic structure.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: 54
Enumerated_Domain_Value_Definition:
Volcanic Rock (Aphanitic) > Glassy Rock

Extrusive rock having a texture which is similar to that of glass or quartz and developed as a result of rapid cooling of the lava without distinct crystallization.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: 55
Enumerated_Domain_Value_Definition:
Volcanic Rock (Aphanitic) > Glassy Rock > Obsidian

A black or dark-colored volcanic glass, usually of rhyolite composition, characterized by conchoidal fracture

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: 56
Enumerated_Domain_Value_Definition:
Volcanic Rock (Aphanitic) > Glassy Rock > Vitrophyre

Any porphyritic igneous rock having a glassy groundmass.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: 57
Enumerated_Domain_Value_Definition:
Volcanic Rock (Aphanitic) > Glassy Rock > Pumice

A light-colored vesicular glassy rock commonly having the composition of rhyolite.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: 58
Enumerated_Domain_Value_Definition:
Volcanic Rock (Aphanitic) > Pyroclastic Rock

Clastic rock material formed by volcanic explosion or aerial

expulsion from a volcanic vent.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 59

Enumerated_Domain_Value_Definition:

Volcanic Rock (Aphanitic) > Pyroclastic Rock > Tuff

Consolidated or cemented volcanic ash.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 60

Enumerated_Domain_Value_Definition:

Volcanic Rock (Aphanitic) > Pyroclastic Rock > Tuff > Welded Tuff

A glass-rich pyroclastic rock that has been indurated by the welding together of its glass shards under the combined action of the heat retained by particles, the weight of the overlying material, and hot gasses.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 61

Enumerated_Domain_Value_Definition:

Volcanic Rock (Aphanitic) > Pyroclastic Rock > Tuff > Ash-Flow Tuff

A tuff deposited by an ash flow or gaseous cloud; a type of ignimbrite. It is a consolidated, but not necessarily welded deposit.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 62

Enumerated_Domain_Value_Definition:

Volcanic Rock (Aphanitic) > Pyroclastic Rock > Ignimbrite

The deposit of a pyroclastic flow.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 63

Enumerated_Domain_Value_Definition:

Volcanic Rock (Aphanitic) > Pyroclastic Rock > Volcanic Breccia (Agglomerate)

A pyroclastic rock that consists of angular volcanic fragments that are larger than 64 mm in diameter and that may or may not have a matrix

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 64

Enumerated_Domain_Value_Definition:

Volcanic Rock (Aphanitic) > Felsic Volcanic Rock

A light-colored, fine-grained or aphanitic extrusive or hypabyssal rock, with or without phenocrysts and composed chiefly of quartz and feldspar.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 65

Enumerated_Domain_Value_Definition:

Volcanic Rock (Aphanitic) > Felsic Volcanic Rock > Alkali Rhyolite

A volcanic rock defined in the QAPF diagram as having $Q/(Q+A+P)$ between 20 and 60 and $P/(P+A)$ less than 10.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 66

Enumerated_Domain_Value_Definition:

Volcanic Rock (Aphanitic) > Felsic Volcanic Rock > Rhyolite

A volcanic rock defined in the QAPF diagram as having $Q/(Q+A+P)$ between 20 and 60 and $P/(P+A)$ between 10 and 35.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 67

Enumerated_Domain_Value_Definition:

Volcanic Rock (Aphanitic) > Felsic Volcanic Rock > Rhyodacite

A volcanic rock defined in the QAPF diagram as having $Q/(Q+A+P)$ between 20 and 60 and $P/(P+A)$ between 35 and 65.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 68

Enumerated_Domain_Value_Definition:

Volcanic Rock (Aphanitic) > Felsic Volcanic Rock > Dacite

A volcanic rock defined in the QAPF diagram as having $Q/(Q+A+P)$ between 20 and 60 and $P/(P+A)$ greater than 65.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 69

Enumerated_Domain_Value_Definition:

Volcanic Rock (Aphanitic) > Felsic Volcanic Rock > Alkali Trachyte

A volcanic rock defined in the QAPF diagram as having $Q/(Q+A+P)$ less than 20 or $F/(F+A+P)$ less than 10, and $P/(P+A)$ less than 10.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 70

Enumerated_Domain_Value_Definition:

Volcanic Rock (Aphanitic) > Felsic Volcanic Rock > Trachyte

A volcanic rock defined in the QAPF diagram as having $Q/(Q+A+P)$ less than 20 or $F/(F+A+P)$ less than 10, and $P/(P+A)$ between 10 and 35.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 71

Enumerated_Domain_Value_Definition:

Volcanic Rock (Aphanitic) > Felsic Volcanic Rock > Quartz Latite

A volcanic rock defined in the QAPF diagram as having $Q/(Q+A+P)$ between 5 and 20 and $P/(P+A)$ between 35 and 65.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 72

Enumerated_Domain_Value_Definition:

Volcanic Rock (Aphanitic) > Felsic Volcanic Rock > Latite

A volcanic rock defined in the QAPF diagram as having $Q/(Q+A+P)$ less than 5 or $F/(F+A+P)$ less than 10, and $P/(P+A)$ between 35 and 65.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 73

Enumerated_Domain_Value_Definition:

Volcanic Rock (Aphanitic) > Intermediate Volcanic Rock

A solidified body of volcanic rock having approximately equal light- and dark-colored minerals in its mode

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 74

Enumerated_Domain_Value_Definition:

Volcanic Rock (Aphanitic) > Intermediate Volcanic Rock > Trachyandesite

A volcanic rock defined modally by $Q/(Q+A+P)$ less than 20 or $F/(F+A+P)$ less than 10, $P/(A+P)$ between 65 and 90, and M less than 35.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 75

Enumerated_Domain_Value_Definition:

Volcanic Rock (Aphanitic) > Intermediate Volcanic Rock > Andesite

A volcanic rock defined modally by $Q/(Q+A+P)$ less than 20 or $F/(F+A+P)$ less than 10, $P/(A+P)$ greater than 90, and M less than 35

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 76

Enumerated_Domain_Value_Definition:

Volcanic Rock (Aphanitic) > Mafic Volcanic Rock

A solidified body of volcanic rock having abundant dark-colored minerals in its mode

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 77

Enumerated_Domain_Value_Definition:

Volcanic Rock (Aphanitic) > Mafic Volcanic Rock > Trachybasalt

A volcanic rock defined modally by $Q/(Q+A+P)$ less than 20 or $F/(F+A+P)$ less than 10, $P/(A+P)$ between 65 and 90, and M greater than 35.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 78

Enumerated_Domain_Value_Definition:

Volcanic Rock (Aphanitic) > Mafic Volcanic Rock > Basalt

A volcanic rock defined modally by $Q/(Q+A+P)$ less than 20 or $F/(F+A+P)$ less than 10, $P/(A+P)$ greater than 90, and M greater than 35.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 79

Enumerated_Domain_Value_Definition:

Volcanic Rock (Aphanitic) > Mafic Volcanic Rock > Basalt > Tholeiite

A silica-oversaturated basalt, characterized by the presence of low-calcium pyroxenes in addition to clinopyroxene and calcic plagioclase. Olivine may be present in the mode, but neither olivine nor nepheline appear in the norm.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 80

Enumerated_Domain_Value_Definition:

Volcanic Rock (Aphanitic) > Mafic Volcanic Rock > Basalt > Hawaiiite

A basalt in which the normative and modal feldspar is andesine, and with soda:potash ratio greater than 2:1. It generally, but not always, lacks normative quartz, and commonly contains normative and modal olivine.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 81

Enumerated_Domain_Value_Definition:

Volcanic Rock (Aphanitic) > Mafic Volcanic Rock > Basalt > Alkaline Basalt

A basalt with nepheline and/or acmite in the CIPW norm.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 82

Enumerated_Domain_Value_Definition:

Volcanic Rock (Aphanitic) > Alkalic Volcanic Rock

A volcanic rock that contains more sodium and/or potassium than is required to form feldspar with the available silica.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 83

Enumerated_Domain_Value_Definition:

Volcanic Rock (Aphanitic) > Alkalic Volcanic Rock > Phonolite

A volcanic rock defined in the QAPF diagram as having $F/(F+A+P)$ between 10 and 60, and $P/(P+A)$ less than 10.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 84

Enumerated_Domain_Value_Definition:

Volcanic Rock (Aphanitic) > Alkalic Volcanic Rock > Tephrite (Basanite)

A volcanic rock defined in the QAPF diagram as having $F/(F+A+P)$ between 10 and 60, and $P/(P+A)$ greater than 90.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 85

Enumerated_Domain_Value_Definition:

Volcanic Rock (Aphanitic) > Komatiite (Ultramafite)

A volcanic rock with color index (M) greater than or equal to 90

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 86

Enumerated_Domain_Value_Definition:
Volcanic Rock (Aphanitic) > Volcanic Carbonatite

A rock of apparent volcanic origin composed of at least 50 percent carbonate minerals

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 87

Enumerated_Domain_Value_Definition:

Plutonic Rock

A rock formed at considerable depth by crystallization of magma and/or by chemical alteration. It is characteristically medium- to coarse-grained, of granitoid texture.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 88

Enumerated_Domain_Value_Definition:

Plutonic Rock > Aplite

A light-colored igneous rock characterized by a fine-grained allotriomorphic-granular (i.e. aplitic) texture.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 89

Enumerated_Domain_Value_Definition:

Plutonic Rock > Porphyry

An igneous rock of any composition that contains conspicuous phenocrysts in a fine-grained groundmass

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 90

Enumerated_Domain_Value_Definition:

Plutonic Rock > Porphyry > Lamprophyre

A group of porphyritic igneous rocks in which mafic minerals form the phenocrysts; feldspars, if present, are restricted to the groundmass

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 91

Enumerated_Domain_Value_Definition:

Plutonic Rock > Pegmatite

An exceptionally coarse-grained igneous rock, with interlocking crystals, usually found as irregular dikes, lenses, or veins, esp. at the margins of batholiths

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 92

Enumerated_Domain_Value_Definition:

Plutonic Rock > Granitoid

A general term for all phaneritic igneous rocks dominated by quartz and feldspars

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 93
Enumerated_Domain_Value_Definition:
Plutonic Rock > Granitoid > Alkali-Granite (Alaskite)

A plutonic rock defined in the QAPF diagram as having Q between 20 and 60 and $P/(A+P)$ less than 10

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:
Enumerated_Domain_Value: 94
Enumerated_Domain_Value_Definition:
Plutonic Rock > Granitoid > Granite

A plutonic rock defined in the QAPF diagram as having Q between 20 and 60 and $P/(A+P)$ between 10 and 65

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:
Enumerated_Domain_Value: 95
Enumerated_Domain_Value_Definition:
Plutonic Rock > Granitoid > Granite > Peraluminous Granite

A granite with aluminum oxide greater than sodium oxide + potassium oxide + calcium oxide; typical accessories include: muscovite, biotite, corundum, topaz, garnet

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:
Enumerated_Domain_Value: 96
Enumerated_Domain_Value_Definition:
Plutonic Rock > Granitoid > Granite > Metaluminous Granite

A granite with aluminum oxide greater than sodium oxide + potassium oxide, but with aluminum oxide less than sodium oxide + potassium oxide + calcium oxide; typical accessories include: hornblende, epidote, melilite, or biotite + pyroxene

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:
Enumerated_Domain_Value: 97
Enumerated_Domain_Value_Definition:
Plutonic Rock > Granitoid > Granite > Subaluminous Granite

A granite with aluminum oxide approximately equal to sodium oxide + potassium oxide; typical accessories include: olivine, orthopyroxene, clinopyroxene

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:
Enumerated_Domain_Value: 98
Enumerated_Domain_Value_Definition:
Plutonic Rock > Granitoid > Granite > Peralkaline Granite

A granite with aluminum oxide less than sodium oxide + potassium oxide; typical accessories include: soda pyroxene and soda amphibole]

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:
Enumerated_Domain_Value: 99
Enumerated_Domain_Value_Definition:
Plutonic Rock > Granitoid > Granodiorite

A plutonic rock defined in the QAPF diagram as having Q between 20 and 60 and $P/(A+P)$ between 65 and 90

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: 100
Enumerated_Domain_Value_Definition:
Plutonic Rock > Granitoid > Tonalite

A plutonic rock defined in the QAPF diagram as having Q between 20 and 60 and $P/(A+P)$ greater than 90

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: 101
Enumerated_Domain_Value_Definition:
Plutonic Rock > Granitoid > Tonalite > Trondhjemite

A tonalite with color index (M) less than 15; composed essentially of sodic plagioclase, quartz, sparse biotite, and little or no alkali feldspar

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: 102
Enumerated_Domain_Value_Definition:
Plutonic Rock > Granitoid > Alkali Syenite

A plutonic rock defined in the QAPF diagram as having $Q/(Q+A+P)$ less than 20 or $F/(F+A+P)$ less than 10, and $P/(P+A)$ less than 10

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: 103
Enumerated_Domain_Value_Definition:
Plutonic Rock > Granitoid > Quartz Syenite

A plutonic rock defined in the QAPF diagram as having Q between 5 and 20 and $P/(A+P)$ between 10 and 35

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: 104
Enumerated_Domain_Value_Definition:
Plutonic Rock > Granitoid > Syenite

A plutonic rock defined in the QAPF diagram as having Q between 5 and 20 and $P/(A+P)$ between 35 and 65

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: 105
Enumerated_Domain_Value_Definition:
Plutonic Rock > Granitoid > Quartz Monzonite

A plutonic rock defined in the QAPF diagram as having Q between 5 and 20 and $P/(A+P)$ between 65 and 90, and plagioclase more sodic than An50

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: 106
Enumerated_Domain_Value_Definition:
Plutonic Rock > Granitoid > Monzonite

A plutonic rock defined in the QAPF diagram as having Q less

than 5 or $F/(F+A+P)$ less than 10, and $P/(A+P)$ between 35 and 65
Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 107

Enumerated_Domain_Value_Definition:

Plutonic Rock > Mafic Intrusive Rock

An igneous rock composed chiefly of one or more dark ferromagnesian minerals. An exception is made for anorthosite, which occurs in association with mafic rocks.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 108

Enumerated_Domain_Value_Definition:

Plutonic Rock > Mafic Intrusive Rock > Quartz Monzodiorite

A plutonic rock defined in the QAPF diagram as having Q between 5 and 20 and $P/(A+P)$ between 65 and 90, and plagioclase more sodic than An50

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 109

Enumerated_Domain_Value_Definition:

Plutonic Rock > Mafic Intrusive Rock > Quartz Monzogabbro

A plutonic rock defined in the QAPF diagram as having Q between 5 and 20 and $P/(A+P)$ between 65 and 90, and plagioclase more calcic than An50

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 110

Enumerated_Domain_Value_Definition:

Plutonic Rock > Mafic Intrusive Rock > Monzodiorite

A plutonic rock defined in the QAPF diagram as having Q less than 5 or $F/(F+A+P)$ less than 10, and $P/(A+P)$ between 65 and 90, and plagioclase more sodic than An50

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 111

Enumerated_Domain_Value_Definition:

Plutonic Rock > Mafic Intrusive Rock > Monzogabbro

A plutonic rock defined in the QAPF diagram as having Q less than 5 or $F/(F+A+P)$ less than 10, and $P/(A+P)$ between 65 and 90, and plagioclase more calcic than An50

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 112

Enumerated_Domain_Value_Definition:

Plutonic Rock > Mafic Intrusive Rock > Quartz Diorite

A plutonic rock defined in the QAPF diagram as having Q between 5 and 20, $P/(A+P)$ greater than 90, and plagioclase more sodic than An50

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 113

Enumerated_Domain_Value_Definition:
Plutonic Rock > Mafic Intrusive Rock > Quartz Gabbro

A plutonic rock defined in the QAPF diagram as having Q between 5 and 20, $P/(A+P)$ greater than 90, and plagioclase more calcic than An50

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 114

Enumerated_Domain_Value_Definition:

Plutonic Rock > Mafic Intrusive Rock > Diorite

A plutonic rock defined in the QAPF diagram as having Q between 0 and 5 or $F/(F+A+P)$ less than 10, $P/(A+P)$ greater than 90 and plagioclase more sodic than An50

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 115

Enumerated_Domain_Value_Definition:

Plutonic Rock > Mafic Intrusive Rock > Diorite > Diabase

A plutonic rock whose main components are labradorite and pyroxene and which is characterized by ophitic texture

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 116

Enumerated_Domain_Value_Definition:

Plutonic Rock > Mafic Intrusive Rock > Gabbro

A plutonic rock defined in the QAPF diagram as having Q between 0 and 5 or $F/(F+A+P)$ less than 10, $P/(A+P)$ greater than 90 and plagioclase more calcic than An50

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 117

Enumerated_Domain_Value_Definition:

Plutonic Rock > Mafic Intrusive Rock > Gabbro > Norite

A plutonic rock satisfying the definition of gabbro, in which $pl/(pl+px+ol)$ is between 10 and 90 and $opx/(opx+cpx)$ is greater than 95.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 118

Enumerated_Domain_Value_Definition:

Plutonic Rock > Mafic Intrusive Rock > Gabbro > Troctolite

A plutonic rock satisfying the definition of gabbro, in which $pl/(pl+px+ol)$ is between 10 and 90 and $px/(pl+px+ol)$ is less than 5.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 119

Enumerated_Domain_Value_Definition:

Plutonic Rock > Mafic Intrusive Rock > Anorthosite

A plutonic rock defined in the QAPF diagram as having Q between 0 and 5, $P/(A+P)$ greater than 90, and M less than 10. A group of monomineralogic plutonic igneous rocks composed almost

entirely of plagioclase feldspar.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 120

Enumerated_Domain_Value_Definition:

Plutonic Rock > Alkalic Intrusive Rock

A plutonic rock that contains more sodium and/or potassium than is required to form feldspar with the available silica

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 121

Enumerated_Domain_Value_Definition:

Plutonic Rock > Alkalic Intrusive Rock > Nepheline Syenite

A plutonic rock defined in the QAPF diagram as having $F/(F+A+P)$ between 10 and 60, and $P/(P+A)$ less than 50; composed essentially of alkali feldspar and nepheline

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 122

Enumerated_Domain_Value_Definition:

Plutonic Rock > Ultramafic Intrusive Rock

A general name for plutonic rock with color index (M) greater than or equal to 90

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 123

Enumerated_Domain_Value_Definition:

Plutonic Rock > Ultramafic Intrusive Rock > Peridotite

A plutonic rock with M equal to or greater than 90 and $ol/(ol+opx+cpx)$ greater than 40

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 124

Enumerated_Domain_Value_Definition:

Plutonic Rock > Ultramafic Intrusive Rock > Peridotite > Dunite

A plutonic rock with M equal to or greater than 90 and $ol/(ol+opx+cpx)$ greater than 90

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 125

Enumerated_Domain_Value_Definition:

Plutonic Rock > Ultramafic Intrusive Rock > Peridotite > Harzburgite

A plutonic rock with M equal or greater than 90, $ol/(ol+opx+cpx)$ greater than 40, and $cpx/(ol+opx+cpx)$ less than 5.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 126

Enumerated_Domain_Value_Definition:

Plutonic Rock > Ultramafic Intrusive Rock > Peridotite > Wherlite

A plutonic rock with M equal or greater than 90, $ol/(ol+opx+cpx)$ greater than 40, and $opx/(ol+opx+cpx)$ less than 5.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 127

Enumerated_Domain_Value_Definition:

Plutonic Rock > Ultramafic Intrusive Rock > Peridotite > Lherzolite

A plutonic rock with M equal or greater than 90, $ol/(ol+opx+cpx)$ greater than 40, and opx roughly equal to cpx.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 128

Enumerated_Domain_Value_Definition:

Plutonic Rock > Ultramafic Intrusive Rock > Peridotite > Kimberlite

A porphyritic alkalic peridotite containing abundant phenocrysts of olivine and phlogopite, and possibly geikielite and chromian pyrope, in a fine-grained groundmass of calcite and second-generation olivine and phlogopite.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 129

Enumerated_Domain_Value_Definition:

Plutonic Rock > Ultramafic Intrusive Rock > Pyroxenite

A plutonic rock with M equal to or greater than 90 and $pyroxene/(ol+pyroxene)$ greater than 90.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 130

Enumerated_Domain_Value_Definition:

Plutonic Rock > Ultramafic Intrusive Rock > Pyroxenite > Clinopyroxenite

A plutonic rock with M equal to or greater than 90 and $cpx/(ol+opx+cpx)$ greater than 90.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 131

Enumerated_Domain_Value_Definition:

Plutonic Rock > Ultramafic Intrusive Rock > Pyroxenite > Orthopyroxenite

A plutonic rock with M equal to or greater than 90 and $opx/(ol+opx+cpx)$ greater than 90.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 132

Enumerated_Domain_Value_Definition:

Plutonic Rock > Ultramafic Intrusive Rock > Hornblendite

A plutonic rock with M equal to or greater than 90 and $hbl/(hbl+px+ol)$ greater than 90.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 133

Enumerated_Domain_Value_Definition:

Plutonic Rock > Intrusive Carbonatite

A plutonic rock composed of at least 50% carbonate minerals.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 134

Enumerated_Domain_Value_Definition:

Metamorphic Rock

A rock derived from pre-existing rocks by mineralogical, chemical, and/or structural changes, essentially in the solid state, in response to marked changes in temperature, pressure, shearing stress, and chemical environment, generally at depth in the earth's crust.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 135

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Hornfels

A fine-grained rock composed of a mosaic of equidimensional grains without preferred orientation and typically formed by contact metamorphism.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 136

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Metasedimentary Rock

A sedimentary rock that shows evidence of having been subjected to metamorphism

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 137

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Metasedimentary Rock > Meta-Argillite

An argillite that has been metamorphosed.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 138

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Metasedimentary Rock > Slate

A compact, fine-grained metamorphic rock that possesses slaty cleavage and hence can be split into slabs and thin plates

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 139

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Metasedimentary Rock > Quartzite

A granoblastic metamorphic rock consisting mainly of quartz and formed by recrystallization of sandstone or chert by either regional or thermal metamorphism.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 140

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Metasedimentary Rock > Marble

A metamorphic rock consisting predominantly of fine- to

coarse-grained recrystallized calcite and/or dolomite, usually with a granoblastic, saccharoidal texture

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 141

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Metavolcanic Rock

A volcanic rock that shows evidence of having been subjected to metamorphism.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 142

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Metavolcanic Rock > Felsic Metamorphic Rock

A metavolcanic rock having abundant light-colored minerals, typically quartz and feldspar

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 143

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Metavolcanic Rock > Felsic Metamorphic Rock > Meta-Rhyolite

A low-grade, felsic metavolcanic rock with preserved evidence of its original rhyolitic character

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 144

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Metavolcanic Rock > Felsic Metamorphic Rock > Keratophyre

All salic extrusive and hypabyssal rocks characterized by the presence of albite or albite-oligoclase and chlorite, epidote, and calcite, generally of secondary order.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 145

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Metavolcanic Rock > Mafic Metamorphic Rock

A metavolcanic rock having abundant dark-colored minerals, typically feldspar, amphibole, and/or pyroxene

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 146

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Metavolcanic Rock > Mafic Metamorphic Rock > Meta-Basalt

A low-grade, mafic metavolcanic rock with preserved evidence of its original basaltic character

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 147

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Metavolcanic Rock > Mafic Metamorphic Rock > Spillite

An altered basalt, characteristically amygdaloidal or vesicular,

in which the feldspar has been albitized and is typically accompanied by chlorite, calcite, epidote, chalcedony, prehnite, or other low-temperature hydrous crystallization products characteristic of a greenstone.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 148

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Metavolcanic Rock > Mafic Metamorphic Rock > Greenstone

A field term applied to any compact, dark-green, altered or metamorphosed basic igneous rock (e.g. spilite, basalt, gabbro, diabase) that owes its color to the presence of chlorite, actinolite, or epidote.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 149

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Phyllite

A metamorphosed rock, intermediate in grade between slate and mica schist. Minute crystals of graphite, sericite, or chlorite impart a silky sheen to the surfaces of cleavage (or schistosity).

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 150

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Schist

A strongly foliated crystalline rock, formed by dynamic metamorphism, that can be readily split into thin flakes or slabs due to the well developed parallelism of more than 50 percent of the minerals present, particularly those of the lamellar or elongate prismatic habit, e.g. mica and hornblende.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 151

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Schist > Greenschist

A schistose metamorphic rock whose green color is due to the presence of chlorite, epidote, or actinolite; a common product of low-grade regional metamorphism of pelitic or basic igneous rocks

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 152

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Schist > Blueschist

A schistose metamorphic rock with a blue color owing to the presence of sodic amphibole, glaucophane, or crossite, and commonly mottled bluish-gray lawsonite; characteristic of metamorphism in areas of unusually low thermal gradient, such as subduction zones

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 153

Enumerated_Domain_Value_Definition:
Metamorphic Rock > Schist > Mica Schist

A schist whose essential constituents are mica and quartz, and whose schistosity is mainly due to the parallel arrangement of mica flakes.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 154

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Schist > Pelitic Schist

A schistose metamorphic rock derived by metamorphism of an argillaceous or a fine-grained aluminous sediment.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 155

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Schist > Quartz-Feldspar Schist

A schist whose essential constituents are quartz and feldspar and having lesser amounts of mica and/or hornblende

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 156

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Schist > Calc-Silicate Schist

A metamorphosed calcareous rock, commonly derived from argillaceous limestone or calcareous mudstone, containing calcium-bearing silicates such as diopside and wollastonite, with a schistose structure produced by parallelism of platy minerals

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 157

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Schist > Amphibole Schist

A schist whose essential constituent is amphibole with lesser amounts of feldspar, quartz, and/or mica

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 158

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Granofels

A medium- to coarse-grained granoblastic metamorphic rock with little or no foliation or lineation.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 159

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Gneiss

A foliated rock formed by regional metamorphism, in which bands or lenticles of granular minerals alternate with bands or lenticles in which minerals having flaky or elongate prismatic habits predominate. Generally less than 50 percent of the

minerals show preferred orientation.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 160

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Gneiss > Felsic Gneiss

A gneissic rock dominated by light-colored minerals, commonly quartz and feldspar

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 161

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Gneiss > Felsic Gneiss > Granitic Gneiss

A gneissic rock with a general granitoid composition

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 162

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Gneiss > Felsic Gneiss > Biotite Gneiss

A granitic gneiss in which the dominant mafic mineral is biotite

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 163

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Gneiss > Mafic Gneiss

A gneissic rock dominated by dark-colored minerals, commonly biotite and hornblende

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 164

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Gneiss > Orthogneiss

A gneissic rock formed from an igneous parent

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 165

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Gneiss > Paragneiss

A gneissic rock formed from a sedimentary parent

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 166

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Gneiss > Migmatite

A composite "mixed rock" composed of igneous or igneous-appearing and metamorphic portions

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 167

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Amphibolite

A crystalloblastic rock consisting mainly of amphibole and plagioclase with little or no quartz.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 168

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Granulite

A metamorphic rock consisting of even-sized, interlocking mineral grains less than 10 percent of which have any obvious preferred orientation.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 169

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Eclogite

A granular rock composed essentially of garnet (almandine-pyrope) and sodic pyroxene (omphacite).

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 170

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Gneiss

A pneumatolytically altered granitic rock composed largely of quartz, mica, and topaz.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 171

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Skarn (Tactite)

A rock of complex mineralogic composition formed by contact metamorphism and metasomatism of carbonate rocks. It is typically coarse-grained and rich in garnet, iron-rich pyroxene, epidote, wollastonite, and scapolite.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 172

Enumerated_Domain_Value_Definition:

Metamorphic Rock > Serpentinite

A rock consisting almost wholly of serpentine-group minerals derived from the hydration of ferromagnesian silicate minerals such as olivine and pyroxene.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 173

Enumerated_Domain_Value_Definition:

Tectonite

A rock whose fabric reflects the history of its deformation.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 174

Enumerated_Domain_Value_Definition:
Tectonite > Tectonic Melange

A melange produced by tectonic processes.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 175

Enumerated_Domain_Value_Definition:
Tectonite > Cataclasite

A fine-grained, cohesive cataclastic rock, normally lacking a penetrative foliation or microfabric, formed during fault movement.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 176

Enumerated_Domain_Value_Definition:
Tectonite > Phyllonite

A rock that macroscopically resembles phyllite but that is formed by mechanical degradation (mylonitization) of initially coarser rocks.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 177

Enumerated_Domain_Value_Definition:
Tectonite > Mylonite

A compact, chert-like rock without cleavage, but with a streaky or banded structure, produced by the extreme granulation and shearing of rocks that have been pulverized and rolled during overthrusting or intense dynamic metamorphism.

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 178

Enumerated_Domain_Value_Definition:
Tectonite > Flaser Gneiss

A dynamically metamorphosed rock in which lenses or layers of original or relatively unaltered granular materials are surrounded by a matrix of highly sheared and crushed material, giving the appearance of a crude flow structure

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: 179

Enumerated_Domain_Value_Definition:
Tectonite > Augen Gneiss

Gneissic rock containing augen (large lenticular mineral grains or mineral aggregates having the shape of an eye in cross section)

Enumerated_Domain_Value_Definition_Source: Johnson, Bruce R., "LithClass 6"

Attribute:

Attribute_Label: AROCK_UNIT

Attribute_Definition:

Associated rock unit name.

Lithologic and stratigraphic information regarding the rocks for the ore deposit that are not specifically identified as host ro.

Textual values of no more than 255 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

291593 records have no value for AROCK_UNIT.

Attribute:

Attribute_Label: AROCK_CODE

Attribute_Definition:

Associated rock type code.

A comma-separated list of integer numbers indicating the types of associated rocks. Each list has no more than 40 characters.

Values are the same as HROCK_CODE

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

278263 records have no value for AROCK_CODE.

Attribute:

Attribute_Label: STRUCTURE

Attribute_Definition:

Structural characteristics.

Description of geological structures at or near the deposit. Textual values of no more than 255 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

280348 records have no value for STRUCTURE.

Attribute:

Attribute_Label: TECTONIC

Attribute_Definition:

Tectonic setting.

Description of tectonic setting within which the deposit is found, includes regional geologic structure.

Textual values of no more than 255 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

285058 records have no value for TECTONIC.

Attribute:

Attribute_Label: REF

Attribute_Definition:

References.

Bibliographic references providing information supporting the database record. Braces delimit multiple references.

Textual values of no more than 32768 characters.

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: (no value)

Enumerated_Domain_Value_Definition:

Information not available for this record.

25211 records have no value for REF.

Distribution_Information:

Distributor:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Peter N Schweitzer
Contact_Organization: U.S. Geological Survey, ER

Contact_Position: Geologist

Contact_Address:

Address_Type: mailing address

Address:

Mail Stop 954
12201 Sunrise Valley Drive
City: Reston
State_or_Province: VA
Postal_Code: 20192
Country: USA

Contact_Voice_Telephone: 703-648-6533

Contact_Facsimile_Telephone: 703-648-6252

Contact_Electronic_Mail_Address: pschweitzer@usgs.gov

Resource_Description: USGS MRDS

Distribution_Liability:

This dataset was prepared by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, make any warranty, expressed or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed in this report, or represents that its use would not infringe privately owned rights. Reference therein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. Any views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

Standard_Order_Process:

Digital_Form:

Digital_Transfer_Information:

Format_Name: Shapefile
Format_Version_Number: 1.0
Format_Information_Content: Mineral resource records (entire database digest)
File-Decompression_Technique: unzip
Transfer_Size: 27.3 megabytes

Digital_Transfer_Option:

Online_Option:

Computer_Contact_Information:

Network_Address:
Network_Resource_Name: <http://tin.er.usgs.gov/mrds/mrds.zip>

Digital_Form:

Digital_Transfer_Information:

Format_Name: Shapefile
Format_Version_Number: 1.0
Format_Information_Content: Mineral resource records (user-selectable geographic subsets)
File-Decompression_Technique: unzip

Digital_Transfer_Option:

Online_Option:

Computer_Contact_Information:

Network_Address:
Network_Resource_Name: <http://tin.er.usgs.gov/mrds/select.php>

Digital_Form:

Digital_Transfer_Information:

Format_Name: Text (tab- or comma-delimited)
Format_Version_Number: convention, not standardized
Format_Information_Content: Mineral resource records (user-selectable geographic subsets)
File-Decompression_Technique: unzip if compressed

Digital_Transfer_Option:

Online_Option:

Computer_Contact_Information:

Network_Address:

Network_Resource_Name: <http://tin.er.usgs.gov/mrds/select.php>

Digital_Form:

Digital_Transfer_Information:

Format_Name: HTML

Format_Version_Number: 4.0.1 Transitional

Format_Information_Content: Mineral resource records (user-selectable geographic subsets)

File-Decompression_Technique: unzip if compressed

Digital_Transfer_Option:

Online_Option:

Computer_Contact_Information:

Network_Address:

Network_Resource_Name: <http://tin.er.usgs.gov/mrds/select.php>

Digital_Form:

Digital_Transfer_Information:

Format_Name: DBF

Format_Version_Number: dBase III

Format_Information_Content: Mineral resource records (user-selectable geographic subsets)

File-Decompression_Technique: unzip if compressed

Digital_Transfer_Option:

Online_Option:

Computer_Contact_Information:

Network_Address:

Network_Resource_Name: <http://tin.er.usgs.gov/mrds/select.php>

Digital_Form:

Digital_Transfer_Information:

Format_Name: OGC WMS

Format_Version_Number: 1.1.1

Format_Information_Content: Mineral occurrences, processing plants, and mines

Digital_Transfer_Option:

Online_Option:

Computer_Contact_Information:

Network_Address:

Network_Resource_Name: [http://mrdata.usgs.gov/cgi-](http://mrdata.usgs.gov/cgi-bin/mapserv?map=mrds.map&request=getcapabilities&service=WMS&version=1.1.1&)

[bin/mapserv?map=mrds.map&request=getcapabilities&service=WMS&version=1.1.1&](http://mrdata.usgs.gov/cgi-bin/mapserv?map=mrds.map&request=getcapabilities&service=WMS&version=1.1.1&)

Digital_Form:

Digital_Transfer_Information:

Format_Name: OGC WFS

Format_Version_Number: 1.0.0

Format_Information_Content: Mineral occurrences, processing plants, and mines

Digital_Transfer_Option:

Online_Option:

Computer_Contact_Information:

Network_Address:

Network_Resource_Name: [http://mrdata.usgs.gov/cgi-](http://mrdata.usgs.gov/cgi-bin/mapserv?map=mrds.map&request=getcapabilities&service=WFS&version=1.0.0&)

[bin/mapserv?map=mrds.map&request=getcapabilities&service=WFS&version=1.0.0&](http://mrdata.usgs.gov/cgi-bin/mapserv?map=mrds.map&request=getcapabilities&service=WFS&version=1.0.0&)

Fees: none

Metadata_Reference_Information:

Metadata_Date: 20100723

Metadata_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Peter N Schweitzer

Contact_Organization: U.S. Geological Survey, ER

Contact_Position: Geologist

Contact_Address:

Address_Type: mailing address

Address:

Mail Stop 954

12201 Sunrise Valley Drive

City: Reston

State_or_Province: VA

Postal_Code: 20192

Country: USA

Contact_Voice_Telephone: 703-648-6533

Contact_Facsimile_Telephone: 703-648-6252

Contact_Electronic_Mail_Address: pschweitzer@usgs.gov

Metadata_Standard_Name: Content Standard for Digital Geospatial Metadata

Metadata_Standard_Version: FGDC-STD-001-1998