



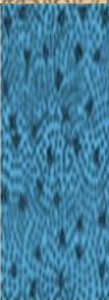


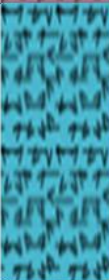
























Lithology Name	Lithology Material Type	Lithology Formation Type	Lithology Description	Abbreviation	Symbol
Aeolianite	Consolidated	Sedimentary	Cemented, wind-blown sediment. The clasts may be grains of quartz, calcium carbonate, gypsum, etc. and the cement commonly calcium carbonate, although other water soluble minerals such as gypsum have been described.	AOLN	
Agate	Consolidated	Igneous	Agate is characterized by multiple, thin laminations of chalcedony (micro-crystalline quartz) that define distinct banding.	AGAT	
Agglomerate	Consolidated	Igneous	Agglomerates (from the Latin 'agglomerare' meaning 'to form into a ball') are coarse accumulations of large blocks of volcanic material that contain at least 75% bombs	AGLM	
Alluvium	Unconsolidated	Sedimentary	Alluvium is loose, unconsolidated (not cemented together into a solid rock) soil or sediments, which may again be eroded, deposited, and reshaped by water in some form in a non-marine setting.	ALVM	
Amphibolite	Consolidated	Metamorphic	Amphibolite is a black metamorphic rock composed almost entirely of amphibole minerals, usually hornblende, produced by the regional metamorphism of mafic and ultra-mafic rocks.	APBL	
Andesite	Consolidated	Igneous	A dark coloured, fine grained extrusive rock that, when porphyritic, contains phenocrysts composed primarily of zoned sodic plagioclase and one or more of the mafic minerals (biotite, hornblende, pyroxene), with a groundmass composed generally of the same minerals as the phenocrysts.	ADST	
Anhydrite	Consolidated	Sedimentary	Anhydrite is the dehydrated form of gypsum. The crystals are typically colourless and flat, platy or tabular. Anhydrite can also occur either as a secondary mineral or as an evaporite mineral.	ANDR	
Anorthosite	Consolidated	Igneous	Is a phaneritic, intrusive igneous rock characterized by a predominance of plagioclase feldspar (90-100%), and a minimal mafic component (0-10%). Pyroxene, ilmenite, magnetite, and olivine are the mafic minerals most commonly present.	ANRS	
Apatite	Consolidated	MINERAL	A group of variously colored hexagonal minerals consisting of calcium phosphate together with fluorine, chlorine, hydroxyl or carbonate in varying amounts. Apatite occurs as an accessory mineral in almost all igneous rocks, in metamorphic rocks and in veins and other ore deposits.	APTT	
Arenite	Consolidated	Sedimentary	Arenite (Latin Arena, sand) is a sedimentary clastic rock with sand grain size between 0.0625 mm (0.00246 in) and 2 mm (0.08 in) and contain less than 15% matrix.[1] The related adjective is arenaceous.	QZAR	
Argillite	Consolidated	Sedimentary	A hard, slightly metamorphosed, detrital sedimentary rock with particles ranging from 0.01 to 0.05mm.	ARGL	
Arkose	Consolidated	Sedimentary	Arkose is a detrital sedimentary rock, specifically a type of sandstone containing at least 25% feldspar.	ARKS	
Basalt	Consolidated	Igneous	Basalt is an extrusive igneous rock. It is the bedrock of the ocean floor and also occurs on land in extensive lava flows	BSLT	
Bauxite	Consolidated	Sedimentary	An earthy rock composed almost wholly of aluminium hydroxide, often formed by the intense chemical weathering of existing rocks in the tropics under high rainfall.	BAUX	
Bentonite	Consolidated	Sedimentary	A soft, plastic, porous, light colored rock composed essentially of clay minerals of the montmorillonite group plus colloidal silica and produced by devitrification and accompanying chemical alteration of a glassy igneous material usually tuff or volcanic ash.	BNTN	
Biotite	Consolidated	MINERAL	Biotite is an iron-magnesium bearing member of the mica group of minerals. It is characteristically black, dark brown to red-brown and the crystals form very thin paper like layers that are stacked one on top of the other.	BTE	
Blastomylonite	Consolidated	Metamorphic	A mylonitic rock in which some recrystallization and / or neomineralization has taken place.	BLAS	
Boulder Clay	Unconsolidated	Sedimentary	In geology, is a deposit of clay, often full of boulders, which is formed in and beneath glaciers and ice-sheets wherever they are found, and was the typical deposit of the Glacial Period in northern Europe and North America	BLCL	

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Boulders	Unconsolidated	Sedimentary	A rounded rock fragment with a diameter > 256mm.	BLDR	
Boulders & Sand	Unconsolidated	Sedimentary	A boulder is a rounded rock fragment with a diameter > 256mm. Sand is a naturally occurring granular material composed of finely divided loose rock and mineral particles and has a grain size which ranges in between 2.00 - 0.0625mm.	BLSD	
Boulders, Silt & Clay	Unconsolidated	Sedimentary	A boulder is rounded rock fragment with a diameter > 256mm. Silt is a sediment with particles in size range of 0.0625 - 0.0039mm .Clay is a sediment with particles less than 0.0039mm in size.	BLSC	
Breccia	Unconsolidated	Sedimentary	Is a coarse-grained clastic rock, composed of angular broken rock fragments held together by a mineral cement or in a fine-grained matrix,which differs from conglomerate in that the fragments have sharp edges and unworn corners.	BRCC	
Bronzite	Consolidated	Igneous	An igneous rock containing bronzite and lesser augite and calcic plagioclase, found in layered intrusions.	BNZT	
Calclutite	Consolidated	Sedimentary	Calclutite is a type of limestone that is composed of predominately, more than 50 percent, of either clay-size or both silt-size and clay-size detrital (transported) carbonate grains	CALU	



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Calcirudite	Consolidated	Sedimentary	Calcirudite is a type of limestone that is composed predominately, more than 50 percent, of carbonate grains that are larger in size than sand (2 mm in diameter).	CARU	
Calcite	Consolidated	MINERAL	The most common carbonate mineral, principle component of limestone and marbles. It is common in numerous ore deposits and caves as vug and vein fillings in lavas and dolerites.	CLCT	
Calcrete	Consolidated	Sedimentary	A powdery, nodular to highly indurated, near surface terrestrial material mainly composed of calcium carbonate, resulting from cementation and the introduction of calcite into the soil, sediment and rock by groundwater in arid to semi-arid regions.	CLCR	
Carbonatite	Consolidated	Igneous	An igneous rock containing >50% carbonate minerals. Occurs as lava flows, dykes and sills and commonly associated with alkaline igneous rocks within rift systems. Formed by the derivation of carbonate rich fluids from ascending magmas.	CBNT	
Cataclasite	Consolidated	Metamorphic	Cataclasite is a type of cataclastic rock that is formed by fracturing and comminution during faulting. It is normally cohesive and non-foliated, consisting of angular clasts in a finer-grained matrix.	CATL	
Chalk	Consolidated	Sedimentary	A very fine-grained, white, porous limestone containing coccoliths(carbonate micro-organisms).	CHLK	







Lithology Name	Lithology Material Type	Lithology Formation Type	Lithology Description	Abbreviation	Symbol
Charnockite	Consolidated	Igneous	An orthopyroxene bearing quartz feldspar rock formed at high temperature and pressure, commonly found in granulite facies metamorphic terrians.	CHKT	
Chert	Consolidated	Sedimentary	Chert is extremely fine-grained (crypto-crystalline) silica, typically grey to grey-white, or dark grey to black. It is hard and has a conchoidal fracture pattern.If chert contains a large amount of iron, it forms red jasper.Chert can form inorganically from the deposition of silica rich fluids or from siliceous oozes.	CHRT	
China-Clay	Consolidated	Sedimentary	China clay is kaolinised feldspar - they are highly valued for their whiteness, hence their use in bone china.	CHCL	
Chromitite	Consolidated	Igneous	Chromitite is an igneous cumulate rock composed mostly of the mineral chromite. It is found in layered intrusions such as the Bushveld Igneous Complex in South Africa and the Stillwater igneous complex in Montana.	CHRM	
Clay	Unconsolidated	Sedimentary	A sediment with particles less than 0.0039mm in size	CLAY	
Clay & Sand	Unconsolidated	Sedimentary	A sediment with particles less than 0.0039mm in size and particles which range in between 0.0625mm and 2 mm.	CLSD	


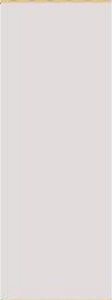




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Claystone	Consolidated	Sedimentary	A clastic sedimentary rock with the composition of shale but without its characteristic lamination and fissility.	CLSN	
Clinopyroxenite	Consolidated	Igneous	Pyroxenite is an ultramafic igneous rock consisting essentially of minerals of the pyroxene group, such as augite and diopside, hypersthene, bronzite or enstatite	CLPX	
Coal	Consolidated	Sedimentary	Is a combustible black or brownish-black sedimentary rock usually occurring in rock strata in layers or veins called coal beds or coal seams and formed from compaction and induration of variously altered plant remains similar to those in peat.	COAL	
Cobbles	Unconsolidated	Sedimentary	A cobble is a clast of rock with a particle size of 64 mm to 256 mm.	COBB	
Cobbles & Sand	Unconsolidated	Sedimentary	Cobble and Sand is clasts of rock with a particle sizes of 256 mm to 64 mm and not smaller than 0.0625mm.	COSD	
Cobbles, Silt & Clay	Unconsolidated	Sedimentary	A cobble, silt and clay is clasts of rock with a particle size of 256 mm to 64 mm through to a particle size of silt which is less than 0.0625mm and through to clay which is less than 0.0039mm in size.	COSC	






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Colluvium	Unconsolidated	Sedimentary	Colluvium is sediment that has moved downhill to the bottom of the slope without the help of running water in streams. Gravity, in the form of soil creep, and sheetwash during rain storms are the predominant agents. These yield an unsorted sediment of mixed composition.	CLVM	
Conglomerate	Unconsolidated	Sedimentary	A conglomerate is a rock consisting of individual clasts that have become cemented together within a finer-grained matrix. Conglomerates are sedimentary rocks consisting of rounded fragments and are thus differentiated from breccias, which consist of angular fragments.	CLGM	
Coquina	Unconsolidated	Sedimentary	Coquina is a sedimentary rock that is composed either wholly or almost entirely of the transported, abraded, and mechanically sorted fragments of the shells of either molluscs, trilobites, brachiopods, or other invertebrates.	CQMA	
Dacite	Consolidated	Igneous	Dacite is an igneous, volcanic rock. It has an aphanitic to porphyritic texture and is intermediate in composition between andesite and rhyolite.	DACT	
Diabase	Consolidated	Igneous	Diabase is a synonym for dolerite. Dolerite is the intrusive equivalent of gabbro with the same chemical and mineral composition. Diabase is typically dark grey and hard.	DIBS	
Diamictite	Consolidated	Sedimentary	Diamictite is a classification of sedimentary rock distinguished by a high consistency of stones, gravel size or larger, up to 25%, so thoroughly mixed and various in form that they can only be classified into the unsorted group. Diamictites are typically deposited in glacial environments.	DMCT	






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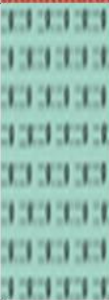




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Diatomaceous-Ooze	Unconsolidated	Sedimentary	A pelagic, siliceous sediment composed of more than 30% diatom tests, up to 40% calcium carbonate, and up to 25% mineral grains.	DIAT	
Diatomite	Consolidated	Sedimentary	Diatomite, also known as diatomaceous earth, is the naturally occurring fossilized remains of diatoms. Diatoms are single-celled aquatic algae. They belong to the class of golden brown algae known as Bacillariophyceae.	DIAT	
Diorite	Consolidated	Igneous	Is a plutonic rock that is something between a granite and a gabbro. It consists mostly of white plagioclase feldspar and black hornblende.	DORT	
Dolerite	Consolidated	Igneous	Is the preferred term used for diabase.	DLRT	
Dolomite	Consolidated	Sedimentary	Dolomite is composed of a calcium-magnesium carbonate mineral species. Dolomite can be formed by evaporation of saline water, many limestones become dolomitised by magnesium rich saline solution that percolate through the limestone and chemically replace the limestone.	DLMT RSDM WAD	
Dolostone	Consolidated	Sedimentary	A rock made up of dolomite.	DOLO	


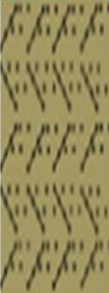




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Dune Sand	Unconsolidated	Sedimentary	A sand dune is a mound, hill or ridge of sand that lies behind the part of the beach affected by tides.	DNSD	
Dunite	Consolidated	Igneous	Dunite is a granular, green igneous rock composed of coarse grains of olivine, and often hosts the world's supply of chromium minerals.	DNTE	
Duricrust	Consolidated	Sedimentary	A general term for a hard crust on the surface of, or layer in, the upper horizons of a soil in a semi-arid climate.	DURI	
Eclogite	Consolidated	Metamorphic	A coarse grained metamorphic rock comprising pink, pyrope rich garnet, green omphacite-kyanite, of deep seated origin.	ECGT	
Eluvium	Unconsolidated	Sedimentary	In geology, eluvium or eluvial deposits are those geological deposits and soils that are derived by in situ weathering or weathering plus gravitational movement or accumulation.	ELVM	
Evaporite	Consolidated	Sedimentary	Evaporite is a rock made up of minerals formed by precipitation from concentrated brines.	EVPR	






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Fault Breccia	Consolidated	Metamorphic	Fault breccia, or tectonic breccia, is a breccia (a rock type consisting of angular clasts) that was formed by tectonic forces.	FBRC	
Fault Gouge	Unconsolidated	Metamorphic	Fault gouge is an unconsolidated tectonite (a rock formed by tectonic forces) with a very small grain size. Fault gouge has no cohesion, it is normally an unconsolidated rock type, unless cementation took place at a later stage	FGOU	
Feldspathic Arenite	Consolidated	Sedimentary	Feldspathic Arenites are sandstones that contain less than 90% quartz, and more feldspar than unstable lithic fragments, and minor accessory minerals	FLDA	
Felsite	Consolidated	Igneous	A dense igneous rock consisting almost entirely of feldspar and quartz	FLST	
Fenite	Consolidated	Metamorphic	Is a country rock which has been subject to metasomatism by the emplacement of alkaline or carbonatite intrusive rocks.	FNTE	
Ferricrete	Consolidated	Sedimentary	a conglomerate consisting of surficial sand and gravel cemented into a hard mass by iron oxide derived from the oxidation of percolating solutions of iron salts.	FRCT	







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Flagstone	Consolidated	Sedimentary	A sandstone containing mica, which enhances its fissility.	FGSN	
Flint	Consolidated	Sedimentary	A term used for microcrystalline silica found in the chalk, equivalent to chert in other rocks.	FLNT	
Foyaite	Consolidated	Igneous	A variety of nepheline syenite with equal amounts of nepheline and potash feldspar and a subordinate mafic mineral, e.g. aegirine.	FYTE	
Fuller's Earth	Consolidated	Sedimentary	An absorbent clay composed of calcium montmorillonite used in decolourizing oils.	FULE	
Gabbro	Consolidated	Igneous	Gabbro is an intrusive igneous rock that is black in color and has a composition similar to basalt.	GBBR	
Gabbro-Norite	Consolidated	Igneous	Gabbro is a plutonic, mafic igneous rock. Norite is similar to gabbro but contains a different orthopyroxene, namely hypersthene. Both gabbro and norite are dark rocks, usually black with some white flecks of plagioclase feldspar.	GBNR	



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Glacial	Unconsolidated	Sedimentary	An adjective referring to a glacier. A period of glaciation.	GLCL	
Gneiss	Consolidated	Metamorphic	Gneiss is a common and widely distributed type of rock formed by high-grade regional metamorphic processes from pre-existing formations that were originally either igneous, volcanic or sedimentary rocks.	GNSS	
Goethite	Consolidated	Mineral	A rust-coloured hydrated oxide of iron produced by the weathering of iron minerals.	GEOT	
Granite	Consolidated	Igneous	Granite is a common and widely occurring type of intrusive, felsic, igneous rock composed of feldspar, quartz and a mafic mineral.	GRNT	
Granodiorite	Consolidated	Igneous	Is an intrusive igneous rock similar to granite, but containing more plagioclase than orthoclase-type feldspar. Officially, it is defined as a phaneritic igneous rock with greater than 20% quartz by volume where at least 65% of the feldspar is plagioclase.	GRDR	
Granofels	Consolidated	Metamorphic	A medium-to coarse-grained metamorphic rock possessing a granoblastic fabric and either lacking foliation or lineation entirely or exhibiting such characteristics only indistinctly.	GRNF	





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Granophyre	Consolidated	Igneous	A fine to medium grained commonly porphyritic, acidic, felsic rock characterised by a groundmass containing intergrown quartz and alkali feldspar	GNPR	
Granulite	Consolidated	Metamorphic	A metamorphic rock formed in the high temperature, high pressure granulite facies, characterised by a mineral assemblage of plagioclase and pyroxene-garnet, quartz, anhydrous aluminosilicates, alkali feldspar, calcite and forsterite rich olivine, commonly with a crystalloblastic fabric.	GRNL	
Graphite	Consolidated	Sedimentary	A soft, grey-black, low pressure form of carbon	GRPT	
Gravel	Unconsolidated	Sedimentary	A sediment of variable composition with a grainsize larger than sand i.e. 2mm	GRVL	
Gravel & Clay	Unconsolidated	Sedimentary	A gravel and clay is a sediment of variable composition with a grainsize larger than sand i.e. 2mm to 0.0039mm in size	GRCL	
Gravel, Sand & Silt	Unconsolidated	Sedimentary	A gravel and sand & silt is a sediment of variable composition with a grainsize larger than sand i.e. 2mm and includes particles sizes smaller than 2mm to 0.0039mm	GRDS	







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Gravel, Silt & Clay	Unconsolidated	Sedimentary	A gravel, silt and clay is a sediment of variable composition with a grainsize larger than sand i.e. 2mm to 0.0039mm and smaller.	GRSC	
Graywacke	Consolidated	Sedimentary	A term used to describe an immature sandstone with >15% clay minerals	GRCK QZWK	
Greenstone	Consolidated	Metamorphic	A general term for a dark green, altered, low to medium grade, metamorphosed basic igneous rock such as spilite or dolerite, the green colour reflecting the greenschist facies mineral assemblage.	GNST	
Greissen	Consolidated	Metamorphic	A light-coloured metamorphic rock consisting mainly of quartz, white mica, and topaz formed by the pneumatolysis of granite.	GRSN	
Grit	Unconsolidated	Sedimentary	A coarse-grained siliceous rock, usually with sharp, angular grains.	GRIT	
Guano	Consolidated	Sedimentary	A substance composed chiefly of the dung of sea birds or bats, accumulated along certain coastal areas or in caves and used as fertilizer.	GANO	

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Gypsum	Consolidated	Sedimentary	Gypsum is a common, soft, colourless to white mineral that cleaves very easily. Its composed of calcium sulphate and has a hardness of 2.	GPSM	
Hard Pan	Consolidated	Metamorphic	A layer of iron oxyhydroxides above the water table formed by the reprecipitation of minerals leached from the overlying vadose zone.	HRDP	
Harzburgite	Consolidated	Igneous	A rock of the peridotite group consisting essentially of olivine and orthopyroxene.	HZBG	
Hematite	Consolidated	Mineral	Hematite is a relatively common mineral that can occur as very finely disseminated grains, forming banded iron formation rocks. It is composed of iron oxide, has a hexagonal crystal system, red to brownish red streak and a metallic to sub metallic lustre.	HEMA	
Hornblendite	Consolidated	Igneous	Hornblendite is a plutonic rock consisting mainly of the amphibole hornblende.	HRNB	
Hornfels	Consolidated	Metamorphic	Hornfels is a fine-textured metamorphic rock formed by contact metamorphism. Contact metamorphism occurs when a mass of hot magma intrudes into pre-existing rock, whether by injecting itself into a crack or by ascending in a large body (e.g., pluton).	HNFL	







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Ignimbrite	Consolidated	Igneous	A poorly sorted, pyroclastic rock, comprising mainly pumice and ash, possibly with broken phenocrysts and dismembered vent wall material, of large volume (1km²-2000km²)	IGBR	
Ijolite	Consolidated	Igneous	A plutonic rock with >90% nepheline and mafic minerals, usually pyroxene, and also amphibole, sphene, apatite and melanite. Normally has a normal igneous texture, particularly subophitic and comb structure. Forms concentric intrusions and dykes in continental areas.	IJLT	
Ironstone	Consolidated	Sedimentary	Ironstone is a sedimentary rock, either deposited directly as a ferruginous sediment or created by chemical replacement, that contains a substantial proportion of an iron compounds from which iron either can be or once was smelted commercially.	BDIS	
Jasper	Consolidated	Sedimentary	A granular, microcrystalline variety of quartz, usually coloured red by the presence of hematite.	JSPR	
Jaspilite	Consolidated	Metamorphic	An iron rich sediment with layers of chert or silica and iron minerals, 5-30mm thick and laminated at millimetric or submillimetric scale.	JPLT	
Kaolinite	Unconsolidated	Sedimentary	A common clay mineral formed by the weathering or hydrothermal alteration of feldspars and other aluminous silicate minerals.	KLNT	





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Kimberlite	Consolidated	Igneous	A serpentized, carbonated, commonly brecciated, porphyritic mica-peridotite made up of phenocrysts of olivine and phlogopite in a fine-grained groundmass of olivine, phlogopite, pyrope, iron-titanium oxide, perovskite plus serpentinite, chlorite and carbonates. The main source of diamonds.	KBLT	
Komatiite	Consolidated	Igneous	An ultramafic, volcanic rock that is primarily composed of the minerals pyroxene and olivine.	KMTE	
Lamproite	Consolidated	Igneous	Lamproites are ultrapotassic mantle-derived volcanic and subvolcanic rocks. They have low CaO, Al2O3, Na2O, high K2O/Al2O3, a relatively high MgO content and extreme enrichment in incompatible elements.	LMPT	
Lamprophyre	Consolidated	Igneous	Lamprophyre (rock), any of a group of dark gray to black alkaline intrusive igneous rocks that generally occur as dykes.	LMPH	
Lapilli	Consolidated	Igneous	Pyroclastic fragments between 2mm and 64mm in size	LPIL	
Laterite	Consolidated	Sedimentary	A highly weathered red subsoil rich in secondary oxides of iron and/or aluminium, nearly devoid of base metal compounds and primary silicates, and commonly with quartz and kaolinite. It develops in tropical and warm-temperate climates.	LTRT	







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Latite	Consolidated	Igneous	Latite is an igneous, volcanic rock, with aphanitic-aphyric to aphyric-porphyritic texture. Its mineral assemblage is usually alkali feldspar and plagioclase in approximately equal amounts.	LATT	
Lava	Consolidated	Igneous	Molten rock material at the earth's surface.	LAVA	
Leucite	Consolidated	Igneous	Leucite is a rock-forming mineral composed of potassium and aluminium tectosilicate.	LEUT	
Lherzolite	Consolidated	Igneous	Lherzolite is a type of ultramafic igneous rock. It is a coarse-grained rock consisting of 40 to 90% olivine along with significant orthopyroxene and lesser calcic chromium rich clinopyroxene	LHZZ	
Lignite	Consolidated	Sedimentary	A soft, low rank, earthy, brown-black coal, sometimes with a massive sapropelic form but more commonly composed of humic material with wood and plant remains in a finer grained, organic groundmass.	LGNT	
Limestone	Consolidated	Sedimentary	A rock comprising > 50% calcium carbonate, which since Cambrian times could be partly or wholly of biogenic origin.	LMSN	

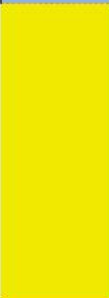


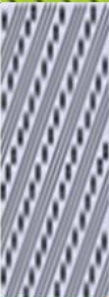


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Limestone & Dolomite	Consolidated	Sedimentary	Limestone is a rock comprising > 50% calcium carbonate, which since Cambrian times could be partly or wholly of biogenic origin. Dolomite is a calcium-magnesium carbonate mineral species. Dolomite can be formed by evaporation of saline water, or many limestones become dolomitized by magnesium rich saline solution that percolate through the limestone and chemically replace the limestone with secondary dolomite.	LMDM	
Limonite	Consolidated	Mineral	A general term for a hydrated iron oxide mineral.	LIMN	
Loam	Unconsolidated	Sedimentary	A soil containing approximately equal proportions of sand, silt and clay.	LOAM	
Loess	Unconsolidated	Sedimentary	Silt of aeolian derivation, often forming extensive, thick deposits.	LOSS	
Magnesite-Stone	Consolidated	Sedimentary	Magnesite is a magnesium carbonate mineral, whose color is normally grey or white, which can also be tinted with brown or yellow. The stone has the look of marble. On the Mohs scale of hardness, it is a 4 to 4.5.	MGST	
Magnetite	Consolidated	Mineral	An oxide mineral with the spinel crystal structure; the most common ferrimagnetic mineral.	MAGN	







Lithology Name	Lithology Material Type	Lithology Formation Type	Lithology Description	Abbreviation	Symbol
Magnetite Gabbro	Consolidated	Igneous	Magnetite is an oxide mineral with the spinel crystal structure; the most common ferrimagnetic mineral. Gabbro is an intrusive igneous rock that is black in color and has a composition similar to basalt.	MGGB	
Marble	Consolidated	Metamorphic	Marble is a metamorphic rock composed of recrystallized carbonate minerals, most commonly calcite or dolomite.	MRBL	
Marl	Consolidated	Sedimentary	A friable, calcareous mudstone.	MARL	
Marlstone	Consolidated	Sedimentary	Indurated marl.	MRLS	
Melilitite-Basalt	Consolidated	Igneous	An ultramafic plutonic rock comprising of melilitite, pyroxene and olivine.	MEBA	
Metafelsite	Consolidated	Metamorphic	Defined as a metamorphosed felsite containing 65% or more felsic minerals and 35% or less mafic minerals. The word 'felsic' is a mnemonic adjective derived from feldspar, feldspathoid and silica and has been used for igneous rocks having abundant light coloured minerals. The rock is mostly very fine-grained.	MTFT	


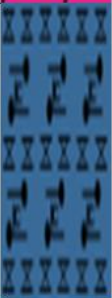
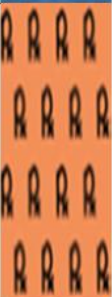



Lithology Name	Lithology Material Type	Lithology Formation Type	Lithology Description	Abbreviation	Symbol
Mica	Consolidated	Mineral	Any member of a group of minerals, hydrous silicates of aluminum with other bases, chiefly potassium, magnesium, iron, and lithium, that separate readily into thin, tough, often transparent, and usually elastic laminae.	MICA	
Mica Schist	Consolidated	Metamorphic	A schist rich in mica, commonly muscovite.	MCSC	
Migmatite	Consolidated	Metamorphic	A metamorphic rock composed of a mixture of paleosome (source rock) and neosome (melt) material.	MGMT	
Monzonite	Consolidated	Igneous	A granular igneous rock composed of plagioclase and orthoclase in about equal quantities usually together with quartz, augite and biotite	MNZT	
Mud	Unconsolidated	Sedimentary	A sediment with particles < 0.0625mm.	MUD	
Mudstone	Consolidated	Sedimentary	Mudstone (also called mudrock) is a fine-grained sedimentary rock of which the original constituents were clays or muds	MDSN	


Lithology Name	Lithology Material Type	Lithology Formation Type	Lithology Description	Abbreviation	Symbol
Muscovite	Consolidated	Mineral	Muscovite (white mica) is a common rock forming mineral. There are two varieties, tiny sericite crystals and bright green, chromium rich fuchsite.	MSCV	
Mylonite	Consolidated	Metamorphic	A fine grained, foliated fault rock with a recrystallised texture with 50-90% matrix and a strong lineation caused by shear in a major ductile fault or shear zone.	MLNT	
Nephelinite	Consolidated	Metamorphic	A feldspathoid found mainly in plutonic and volcanic rocks and in pegmatites associated with nepheline syenites.	NPHL	
NO SAMPLE	None	None	NONE.	N.S. FULT	
Norite	Consolidated	Igneous	Norite is a mafic intrusive igneous rock composed largely of the calcium-rich plagioclase labradorite and hypersthene with olivine.	NORT	
Norite-Anorthosite	Consolidated	Igneous	Norite is a mafic intrusive igneous rock composed largely of the calcium-rich plagioclase labradorite and hypersthene with olivine. Anorthosite is a phaneritic, intrusive igneous rock characterized by a predominance of plagioclase feldspar (90-100%), and a minimal mafic component (0-10%). Pyroxene, ilmenite, magnetite, and olivine are the mafic minerals most commonly present.	NRAR	







Lithology Name	Lithology Material Type	Lithology Formation Type	Lithology Description	Abbreviation	Symbol
Olivine Diorite	Consolidated	Igneous	Olivine is the name for a series between two end members, fayalite and forsterite. Fayalite is the iron rich member with a pure formula of Fe ₂ SiO ₄ . Forsterite is the magnesium rich member with a pure formula of Mg ₂ SiO ₄ . The two minerals form a series where the iron and magnesium are substituted for each other without much effect on the crystal structure. Diorite is a plutonic rock that is something between a granite and a gabbro. It consists mostly of white plagioclase feldspar and black hornblende.	OVDR	
Olivine-Pyroxenite	Consolidated	Igneous	An olivine rich pyroxenite is an ultramafic igneous rock consisting essentially of minerals of the pyroxene group, such as augite and diopside, hypersthene, bronzite or enstatite.	OLPY	
Orthogneiss	Consolidated	Metamorphic	Light-pinkish-white- to buff-white-weathering, greenish-gray, medium-grained, moderately foliated rock consisting of two distinct phases: hornblende syenite gneiss containing microcline microperthite, oligoclase, hornblende, and opaque minerals; and pyroxene syenite gneiss containing microcline microperthite, oligoclase, clinopyroxene, accessory amounts of titanite, and opaque minerals.	GRGN GDGS SNGS	
Orthoگرانوفل	Consolidated	Metamorphic	An orthoگرانوفل lacks any obvious foliation or layering and is commonly characterised by a granoblastic texture. On this basis it does not meet the definitions of schist or gneiss. The term granofels has been proposed by the IUGS Subcommittee and can be translated literally as granular rock.	ORTF	
Orthopyroxenite	Consolidated	Igneous	Orthopyroxenite is an ultramafic and ultrabasic rock that is almost exclusively made from the mineral orthopyroxene, the orthorhombic version of pyroxene and a type of pyroxenite. It can have up to a few percent of olivine and clinopyroxene.	ORPY	
Orthoschist	Consolidated	Metamorphic	"An orthoschist is defined as a medium-grained strongly foliated rock that can be readily split into flakes or slabs due to the well-developed preferred orientation of the majority of the minerals present, particularly those of platy or prismatic habit. It is formed through the retrogressive metamorphism of an igneous rock."	ORSC	






Lithology Name	Lithology Material Type	Lithology Formation Type	Lithology Description	Abbreviation	Symbol
Outwash	Unconsolidated	Sedimentary	Sand and gravel deposited by meltwater streams in front of glacial ice.	OTSH	
Overburden	Unconsolidated	Sedimentary	Loose, unconsolidated material resting on bedrock; the unwanted rock overlying material of value, such as an orebody.	OB DN	
Para-Amphibolite	Consolidated	Metamorphic	Term used for rocks composed largely of hornblende and plagioclase is para-amphibolite. Note that the prefix 'para' indicates that the amphibolite is thought to have a sedimentary protolith in contrast to ortho-amphibolite, which has an igneous protolith. Amphibolite is used where the nature of the protolith is unknown.	PAPH	
Paragneiss	Consolidated	Metamorphic	A metamorphic rock formed from high grade metamorphism of sedimentary rocks.	PAGN	
Peat	Unconsolidated	Sedimentary	A mass of dark brown, partly decomposed, fibrous plant debris. The precursor of coal, requiring substantial vegetation, standing water that would prevent oxidation or bacterial destruction, and an absence of introduced detrital sediment.	PEAT	
Pegmatite	Consolidated	Igneous	A pegmatite is a very coarsely crystalline, intrusive igneous rock composed of interlocking crystals usually larger than 2.5 cm in size; such rocks are referred to as pegmatitic.	PGMT	

Lithology Name	Lithology Material Type	Lithology Formation Type	Lithology Description	Abbreviation	Symbol
Pelite	Consolidated	Metamorphic	Sedimentary rock composed of fine fragments, as of clay or mud.	PLTE	
Peridotite	Consolidated	Igneous	A peridotite is a dense, coarse-grained ultramafic igneous rock, consisting mostly of the minerals olivine and pyroxene.	PERI	
Phonolite	Consolidated	Igneous	A fine-grained volcanic igneous rock consisting of alkaline feldspars and nepheline.	PNLT	
Phosphorite	Consolidated	Sedimentary	A phosphate rock which occurs in beds from centimeters to tens of meters thick, composed of grains of cryptocrystalline carbonate fluorapatite or collophane and detrital material.	PHST	
Phyllite	Consolidated	Metamorphic	A regionally metamorphosed, foliated, pelitic rock.	PLLT	
Phyllonite	Consolidated	Metamorphic	A metamorphic rock occupying an intermediate position between phyllite and mylonite.	PHYT	







Lithology Name	Lithology Material Type	Lithology Formation Type	Lithology Description	Abbreviation	Symbol
Picrite	Consolidated	Igneous	A coarse-grained ultrabasic igneous rock consisting of olivine and augite with small amounts of plagioclase feldspar.	PCTE	
Porcelainite	Consolidated	Sedimentary	Baked clay or shale found in burned-out coal mines	PORL	
Porphyry	Consolidated	Igneous	An hypabyssal igneous rock containing phenocrysts, commonly of feldspar.	PPHY QZPR	
Psammite	Consolidated	Metamorphic	A metamorphosed sandstone, arkose, or quartzite, extremely rich in the mineral quartz.	PSMT	
Pseudogranophyre	Consolidated	Igneous	An igneous rock similar to granite in composition and appearance, but containing larger crystals of quartz and feldspar in a matrix of finer grains.	PDGP	
Pseudotachylite	Consolidated	Metamorphic	A very fine-grained or glass-like black fault rock, formed by rapid displacement and melting by shear generated heating, commonly associated with meteorite impact structures.	PSTY	





Lithology Name	Lithology Material Type	Lithology Formation Type	Lithology Description	Abbreviation	Symbol
Psilomelane	Consolidated	Mineral	A botryoidal mass of manganese oxide minerals, of which romanechite is a major constituent.	PSLO	
Pyrite	Consolidated	Mineral	Iron sulfide mineral (FeS). Forms silvery to brassy metallic cubes or masses. Common in many rocks. Also known as "Fool's Gold". Weathering of pyrite produces limonite (iron oxide) pseudomorphs, and stains rock brown or yellow.	PYRT	
Pyroxenite	Consolidated	Igneous	Pyroxenite is an ultramafic igneous rock consisting essentially of minerals of the pyroxene group, such as augite and diopside, hypersthene, bronzite or enstatite.	PRXN	
Quartzite	Consolidated	Metamorphic	Quartzite is a metamorphic rock derived from sandstone by heating and pressure usually related to tectonic compression within orogenic belts.	QRTZ MTQZ	
Quartz-Syenite	Consolidated	Igneous	Commonly porphyritic and mesoperthitic; contains biotite and, locally, fayalite, hastingsite, hornblende, or ferrohedenbergite.	QZSY	
Radiolarian-Ooze	Unconsolidated	Sedimentary	Siliceous mud of the bottom of deep seas composed largely of skeletal remains of radiolarians.	RDOZ	






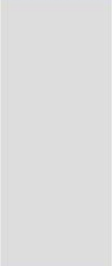
Lithology Name	Lithology Material Type	Lithology Formation Type	Lithology Description	Abbreviation	Symbol
Radiolarite	Consolidated	Sedimentary	Radiolarite is a siliceous, comparatively hard, fine-grained, chert-like, and homogeneous sedimentary rock that is composed predominantly of the microscopic remains of radiolarians.	RDTE	
Rhyodacite	Consolidated	Igneous	Rhyodacite is an extrusive volcanic rock intermediate in composition between dacite and rhyolite. It is the extrusive equivalent of granodiorite.	RYDT	
Rhyolite	Consolidated	Igneous	Rhyolite is an igneous rock in the class designated as "felsic" rock. This class of rock crystallizes from silicate minerals at relatively low temperatures and with a relatively high percentage of silica.	RYLT	
Rubble	Unconsolidated	Sedimentary	Anthropogenic waste, usually building material etc.	RBBL	
Sand	Unconsolidated	Sedimentary	Sand is a naturally occurring granular material composed of finely divided loose rock and mineral particles (0.625 - 2 mm in diameter).	SAND	
Sand & Clay	Unconsolidated	Sedimentary	Sand and clay is a naturally occurring granular material composed of finely divided rock and mineral particles (0.625 - 2 mm in diameter) to a clay particle size of less than 0.0039mm in size.	SDCL	







Lithology Name	Lithology Material Type	Lithology Formation Type	Lithology Description	Abbreviation	Symbol
Sand & Gravel	Unconsolidated	Sedimentary	Sand and gravel is a naturally occurring granular material composed of finely divided rock and mineral particles (0.625 - 2 mm in diameter) and up to a grainsize larger than sand i.e. 2mm.	SDGL	
Sand & Silt	Unconsolidated	Sedimentary	Sand is a naturally occurring granular material composed of finely divided rock and mineral particles (0.625 - 2 mm in diameter) and silt is a sediment with particles in size range of 4 - 62.5um.	SDST	
Sand And Basal Conglomerate	Unconsolidated	Sedimentary	A conglomerate is a rock consisting of individual clasts within a finer-grained matrix that have become cemented together and sand is a naturally occurring granular material composed of finely divided rock and mineral particles (0.625 - 2 mm in diameter).	SDBC	
Sand, Gravel & Clay	Unconsolidated	Sedimentary	Sand , gravel and clay is a naturally occurring granular material composed of finely divided rock and mineral particles (0.625 - 2 mm in diameter) and up to a grainsize larger than sand i.e. 2mm to a clay particle size of less than 0.0039mm in size.	SGVC	
Sandstone	Consolidated	Sedimentary	A clastic sedimentary rock with > 25% by volume of clasts of sand grade (0.625 - 2 mm in diameter).	SNDS CSSC	




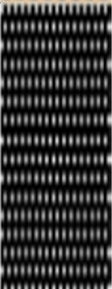

Lithology Name	Lithology Material Type	Lithology Formation Type	Lithology Description	Abbreviation	Symbol
Sandstone & Shale	Consolidated	Sedimentary	Sandstone- A clastic sedimentary rock with > 25% by volume of clasts of sand grade (0.625 - 2 mm in diameter). Shale- A fine-grained siliciclastic rocks containing variable proportions of clay and silt, but containing at least 33% clay.	SDSL	
Schist	Consolidated	Metamorphic	A class of fissile metamorphic rocks whose constituent mineral grains (micas or other platy minerals) have a parallel, well-foliated arrangement.	SCSTJQZSC	
Scree	Unconsolidated	Sedimentary	Scree, or talus, is accumulation of broken rock fragments at the base of crags, mountain cliffs, or valley shoulders.	SCRE	
Semipelite	Consolidated	Metamorphic	Crystalloblastic metasedimentary rock (grain size & protolith undefined); modal composition <10% calc-silicate/carbonate minerals, 60-80% Q+F, 20-40% and other minerals (mica/chlorite/garnet/cordierite/staurolite/andalusite/kyanite/sillimanite).	SETE	
Serpentine Talc	Consolidated	Metamorphic	Serpentine Talc is a hydrated magnesium silicate mineral with a characteristic soft and greasy feel, hence its alternative name, soapstone.	SPTC	
Serpentine	Consolidated	Metamorphic	Serpentine is a rock composed of one or more of the serpentine group of minerals. Minerals in this group are formed by serpentinization, a hydration and metamorphic transformation of ultramafic rock from the Earth's mantle. The alteration is particularly important.	SRPN	


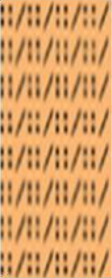

Lithology Name	Lithology Material Type	Lithology Formation Type	Lithology Description	Abbreviation	Symbol
Shale	Consolidated	Sedimentary	Shale is a fine-grained siliciclastic rock containing variable proportions of clay and silt, with at least 33% clay. Avoid using this category, except in cases where the proportions of clay and silt are not known.	SHLE	
Shale & Siltstone	Consolidated	Sedimentary	Shale- fine-grained siliciclastic rocks containing variable proportions of clay and silt, but containing at least 33% clay. Siltstone is a lithified silt with particles in size range of 0.0625 to 0.0039mm.	SHSL	
Silcrete	Consolidated	Sedimentary	A silicified rock formed through cementation of any sediment or rock at or near the surface by silica-rich groundwater.	SLCT	
Silt	Unconsolidated	Sedimentary	A sediment with particles in size range of 0.0625 to 0.0039mm.	SILT	
Silt & Clay	Unconsolidated	Sedimentary	Clay and Silt are sediments with particles in the range from 0.0625mm to less than 0.0039mm in size.	STCL	
Siltstone	Consolidated	Sedimentary	A lithified silt.	SLSN	

Lithology Name	Lithology Material Type	Lithology Formation Type	Lithology Description	Abbreviation	Symbol
Siltstone & Shale	Consolidated	Sedimentary	Shale- fine-grained siliciclastic rocks containing variable proportions of clay and silt, but containing at least 33% clay. Siltstone- A lithified silt with particles in size range of 0.0625 to 0.0039mm.	SLSH	
Sinter	Consolidated	Sedimentary	A chemical sediment or crust, e.g. porous silica, deposited by a mineral spring	SNTR	
Skarn	Consolidated	Metamorphic	An irregularly shaped, replacement ore deposit, usually formed at high temperature in metamorphosed, carbonate rich sediments at the contacts with medium to large igneous bodies.	SKAM	
Slate	Consolidated	Metamorphic	A fine grained, low grade or regionally metamorphosed mudrock with a well developed penetrative cleavage. The cleavage is a foliation in which submicroscopic phyllosilicate minerals are in well developed, parallel alignment so that the rocks splits into platy sheets.	SLTE	
Smectite-Clay	Consolidated	Sedimentary	These are a family of clays that swell when immersed in water or some organic liquids (those which, like water, have polar molecules). Formerly they were known as the montmorillonite group; that name is now only used for one mineral in the smectite group.	SMCY	
SOIL	Unconsolidated	None	NONE.	SOIL	

Lithology Name	Lithology Material Type	Lithology Formation Type	Lithology Description	Abbreviation	Symbol
Spiculite	Consolidated	Sedimentary	A sedimentary rock or sediment composed largely of sponge spicules.	SPTE	
Sponge-Spicular Ooze	Unconsolidated	Sedimentary	Predominantly composed of sponge spicules	SSPO	
Syenite	Consolidated	Igneous	Syenite is a coarse-grained intrusive igneous rock of the same general composition as granite but with the quartz either absent or present in relatively small amounts (<5%).	SYNT	
Talc	Consolidated	Mineral	A phyllosilicate formed by the hydrothermal alteration of ultrabasic rocks or the thermal metamorphism of siliceous dolomites.	TALC	
Talus	Unconsolidated	Sedimentary	A sloping accumulation of loose clasts of granule grade or larger, generally in the form of a wedge, meters to hundreds of meters in height, at the base of a steep rock face from which the clasts fall as a result of weathering and erosion.	TLUS	
Tephra	Consolidated	Igneous	Tephra is fragmental material produced by a volcanic eruption regardless of composition, fragment size or emplacement mechanism	TPHA	

Lithology Name	Lithology Material Type	Lithology Formation Type	Lithology Description	Abbreviation	Symbol
Tephrite	Consolidated	Igneous	Tephrite is an igneous, volcanic (extrusive) rock, with aphanitic to porphyritic texture. Mineral assembly is usually abundant feldspathoids (leucite or nepheline), plagioclase, and lesser alkali feldspar. Pyroxenes (clinopyroxenes) are common accessory minerals.	TPHT	
Till	Unconsolidated	Sedimentary	Glacial debris deposited directly from ice, comprising a wide variety of grain sizes.	TILL	
Tillite	Consolidated	Sedimentary	A conglomerate of glacial origin, formed from lithification of till.	TLLT	
Tonalite	Consolidated	Igneous	Tonalite is an igneous, plutonic (intrusive) rock of felsic composition, with phaneritic texture	TNLT	
Trachyte	Consolidated	Igneous	Trachyte is an igneous volcanic rock with an aphanitic to porphyritic texture. The mineral assemblage consists of essential alkali feldspar; relatively minor plagioclase and quartz or a feldspathoid such as nepheline may also be present.	TRCT	
Travertine	Consolidated	Sedimentary	A hard dense variety of tufa. It also occurs in caves as stalactites and stalagmites (synonymous with calcareous sinter).	TRAV	

Lithology Name	Lithology Material Type	Lithology Formation Type	Lithology Description	Abbreviation	Symbol
Troctolite	Consolidated	Igneous	Troctolite is a plutonic igneous rock composed of essential olivine and plagioclase feldspar.	TROC	
Tufa	Consolidated	Sedimentary	A thin, surficial, soft, spongy, semifriable encrustation around the mouth of springs, seeps or streams carrying calcium carbonate in solution and in exceptional instances as a thick deposit along lake shores.	CCTF	
Tuff	Consolidated	Igneous	Tuff (from the Italian tufo) is a type of rock consisting of consolidated volcanic ash ejected from vents during a volcanic eruption	TUFF	
Tuff-Breccia	Consolidated	Igneous	Tuff (from the Italian tufo) is a type of rock consisting of consolidated volcanic ash ejected from vents during a volcanic eruption. Tuff is sometimes called tufa, particularly when used as construction material.	TFBC	
Ultracataclasite	Consolidated	Metamorphic	A cataclasite that is the very finest, hardest, most glassy of the cataclasites	UCCT	
Ultramytonite	Consolidated	Metamorphic	A more thoroughly deformed and fine-grained rock containing more than 90% matrix and less than 10% relict grains. Ultramytonites are mylonites taken to the edge of recognition.	UMYT	

Lithology Name	Lithology Material Type	Lithology Formation Type	Lithology Description	Abbreviation	Symbol
Vein-Quartz	Consolidated	MINERAL	A vein filled with quartz either of igneous origin or deposited from solution.	VNQZ	
Wacke	Consolidated	Sedimentary	Wacke (sandstone), sedimentary rock composed of sand-sized grains (0.063-2 mm) with a fine-grained clay matrix.	WCKE	
Websterite	Consolidated	Igneous	A pyroxenite with > 95% orthopyroxene and clinopyroxene. Occurs within ultramafic intrusions and ultramafic xenoliths in basalt.	WBTE	
Wehrlite	Consolidated	Igneous	A peridotite with > 95% clinopyroxene and olivine (>40%) and minor orthopyroxene. Occurs within ultramafic intrusions and as ultramafic xenoliths in basalt.	WHTE	