CLASSIFICATION OF GEOLOGIC MATERIALS

IGNEOUS (.IGN.)

Volcanic	(.IGNV.)
Hypabyssal	(.IGNH.)
Plutonic	(.IGNP.)
Intrusive, unspecified	(.IGNI.)

SEDIMENTARY (.SED.)

Biogenic	(.SEDB.)
Calclastic	(.SEDL.)
Carbonaceous	(.SEDO.)
Carbonate	(.SEDC.)
Catastrophic	(.SEDK.)
Chert	(.SEDH.)
Evaporite	(.SEDE.)
Ironstone	(.SEDI.)
Phosphatic	(.SEDP.)
Siliciclastic	(.SEDS.)
Surficial	(.SEDF.)
Volcaniclastic	(.SEDV.)

METAMORPHIC (.MET.)

Metamorphic rock, generic	(.METG.)
Metasedimentary rock	(.METS.)
Metaigneous rock	(.METI.)
Strain-dominated metamorphic rock	(.METD.)
Polymetamorphic rock	(.METP.)
Metamorphic rock uncharacterized	(.METU.)

Bedrock	(.BRK.)
Surficial	(.SUR.)

GEOLOGIC AGE

- AGE UNKNOWN (.AGU.)
- PHANEROZOIC (.PHO.)
  - Cenozoic (.CZO.)
    - Quaternary (.CZOQ.)
      - Holocene (.CZOQH.)
        - Modern (.CZOQHD.)
        - Late Holocene (.CZOQHL.)
        - Middle Holocene (.CZOQHM.)
        - Early Holocene (.CZOQHE.)
      - Pleistocene (.CZOQP.)
        - Late Pleistocene (.CZOQPL.)
        - Middle Pleistocene (.CZOQPM.)
        - Early Pleistocene (.CZOQPE.)
    - Tertiary (.CZOT.)
      - Pliocene (.CZOTP.)
        - Late Pliocene (.CZOTPL.)
        - Early Pliocene (.CZOTPW.)
      - Miocene (.CZOTM.)
        - Late Miocene (.CZOTML.)
        - Middle Miocene (.CZOTMM.)
        - Early Miocene (.CZOTME.)
      - Oligocene (.CZOTO.)
        - Late Oligocene (.CZOTOL.)
        - Early Oligocene (.CZOTOE.)
      - Eocene (.CZOTE.)
        - Late Eocene (.CZOTEL.)
        - Middle Eocene (.CZOTEM.)
        - Early Eocene (.CZOTEE.)
      - Paleocene (.CZOTA.)
        - Late Paleocene (.CZOTAL.)
        - Early Paleocene (.CZOTAE.)
  - Neogene (.NGN.)
  - Paleogene (.PGN.)
  - Mesozoic (.MZO.)
    - Cretaceous (.MZOK.)
      - Late Cretaceous (.MZOKL.)
      - Early Cretaceous (.MZOKE.)
    - Jurassic (.MZOJ.)
      - Later Jurassic (.MZOJL.)
      - Early Jurassic (.MZOKJE.)
    - Triassic (.MZOT.)
      - Late Triassic (.MZOTL.)
      - Early Triassic (.MZOTE.)
  - Paleozoic (.PZO.)
    - Permian (.PZOR.)
      - Late Permian (.PZORL.)
      - Early Permian (.PZORE.)
    - Pennsylvanian (.PZOP.)
      - Late Pennsylvanian (.PZOPL.)
      - Early Pennsylvanian (.PZOPE.)
    - Mississippian (.PZOM.)
      - Late Mississippian (.PZOML.)
      - Early Mississippian (.PZOME.)
    - Devonian (.PZOD.)
      - Late Devonian (.PZODL.)
      - Early Devonian (.PZODE.)
    - Silurian (.PZOS.)
      - Late Silurian (.PZOSL.)
      - Early Silurian (.PZOSE.)
    - Ordovician (.PZOO.)
      - Late Ordovician (.PZOOL.)
      - Early Ordovician (.PZOOE.)
    - Cambrian (.PZOC.)
      - Late Cambrian (.PZOCL.)
      - Early Cambrian (.PZOCE.
  - Late Paleozoic (.PZOL.)
  - Middle Paleozoic (.PZOI.)
  - Early Paleozoic (.PZOE.)
- PROTEROZOIC (.PRO.)
  - Late Proterozoic (.PROL.)
  - Middle Proterozoic (.PROM.)
  - Early Proterozoic (.PROE.)
- ARCHEAN (.ARC.)
  - Late Archean (.ARCL.)
  - Middle Archean (.ARCM.)
  - Early Archean (.ARCE.)
- Precambrian (.PRC.)

GEOLOGIC-AGE SUBCATEGORIES BASED ON FOSSILS, PALEOMAGNETISM, AND TEPHROCHRONOLOGY

TIME-STRATIGRAPHIC CATEGORIES BASED ON FOSSIL MAMMALS AND FOSSIL BENTHIC FORAMINIFERA

LAND-MAMMAL AGES (.LMA.) From Woodburne, 1987

- Pleistocene
  - Rancholabrean (.LMAR.)
  - Irvingtonian (.LMAI.)
- Pliocene
  - Blancan (.LMAL.)
- Miocene
  - Hemphillian (.LMAH.)
  - Clarendonian (.LMAC.)
  - Barstovian (.LMAB.)
  - Arikareean (.LMAA.)
- Oligocene
  - Arikareean (.LMAA.)
  - Whitneyan (.LMAW.)
  - Orellan (.LMAO.)
  - Chadronian (.LMAN.)
- Eocene
  - Chadronian (.LMAN.)
  - Duchesnean (.LMAD.)
  - Uintan (.LMAU.)
  - Bridgerian (.LMAG.)
  - Wasatchian (.LMAS.)
  - Clarkforkian (.LMAK.)
- Paleocene
  - Clarkforkian (.LMAK.)
  - Tiffanian (.LMAF.)
  - Torrejonian (.LMAT.)
  - Puercan (.LMAP.)

WEST-COAST FORAMINIFERAL STAGES (.WCF.)

- Pleistocene
  - Hallian (.WCFH.)
  - Wheelerian (.WCFW.)
- Pliocene
  - Venturian (.WCFV.)
  - Repettian (.WCFT.)
  - Delmontian (.WCFD.)
- Miocene
  - Delmontian (.WCFD.)
  - Mohnian (.WCFM.)
  - Luisian (.WCFL.)
  - Relizian (.WCFR.)
  - Saucesian (.WCFS.)
  - Zemorrian (.WCFZ.)
- Oligocene
  - Zemorrian (.WCFZ.)
- Eocene
  - Refugian (.WCFF.)
  - Narizian (.WCFN.)
  - Ulatizian (.WCFU.)
  - Penutian (.WCFP.)
- Paleocene
  - Bulitian (.WCFB.)
  - Ynezian (.WCFY.)
  - Danian (.WCFA.)

TIME-STRATIGRAPHIC CATEGORIES BASED ON FOSSIL MARINE PLANKTON (Berggren and others, 1985)

NANNOPLANKTON ZONATION (.NPZ.)

- Pleistocene
  - NN21 (.NPZN21.)
  - NN20 (.NPZN20.)
  - NN19 (.NPZN19.)
- Pliocene
  - NN19 (.NPZN19.)
  - NN18 (.NPZN18.)
  - NN17 (.NPZN17.)
  - NN16 (.NPZN16.)
  - NN15 (.NPZN15.)
  - NN14 (.NPZN14.)
  - NN13 (.NPZN13.)
  - NN12 (.NPZN12.)
- Miocene
  - NN12 (.NPZN12.)
  - NN11 (.NPZN11.)
  - NN10 (.NPZN10.)
  - NN09 (.NPZN09.)
  - NN08 (.NPZN08.)
  - NN07 (.NPZN07.)
  - NN06 (.NPZN06.)
  - NN05 (.NPZN05.)
  - NN04 (.NPZN04.)
  - NN03 (.NPZN03.)
  - NN02 (.NPZN02.)
  - NN01 (.NPZN01.)
- Oligocene
  - NP25 (.NPZP25.)
  - NP24 (.NPZP24.)
  - NP23 (.NPZP23.)
  - NP22 (.NPZP22.)
  - NP21 (.NPZP21.)
- Eocene
  - NP20 (.NPZP20.)
  - NP19 (.NPZP19.)
  - NP18 (.NPZP18.)
  - NP17 (.NPZP17.)
  - NP17 (.NPZP17.)
  - NP16 (.NPZP16.)
  - NP15 (.NPZP15.)
  - NP14 (.NPZP14.)
  - NP13 (.NPZP13.)
  - NP12 (.NPZP12.)
  - NP11 (.NPZP11.)
  - NP10 (.NPZP10.)
- Paleocene
  - NP09 (.NPZP09.)
  - NP08 (.NPZP08.)
  - NP07 (.NPZP07.)
  - NP06 (.NPZP06.)
  - NP05 (.NPZP05.)
  - NP04 (.NPZP04.)
  - NP03 (.NPZP03.)
  - NP02 (.NPZP02.)
  - NP01 (.NPZP01.)
- Cretaceous

PLANKTONIC FORMANIFERAL ZONATION (.PFZ.)

- Pleistocene
  - N23 (.PFZN23.)
  - N22 (.PFZN22.)
- Pliocene
  - N22 (.PFZN22.)
  - N21 (.PFZN21.)
  - N20 (.PFZN20.)
  - N19 (.PFZN19.)
  - N18 (.PFZN18.)
- Miocene
  - N17 (.PFZN17.)
  - N16 (.PFZN16.)
  - N15 (.PFZN15.)
  - N14 (.PFZN14.)
  - N13 (.PFZN13.)
  - N12 (.PFZN12.)
  - N11 (.PFZN11.)
  - N10 (.PFZN10.)
  - N09 (.PFZN09.)
  - N08 (.PFZN08.)
  - N07 (.PFZN07.)
  - N06 (.PFZN06.)
  - N05 (.PFZN05.)
  - N04 (.PFZN04.)
- Oligocene
  - P22 (.PFZP22.)
  - P21 (.PFZP21.)
  - P20 (.PFZP20.)
  - P19 (.PFZP19.)
  - P18 (.PFZP18.)
- Eocene
  - P17 (.PFZP17.)
  - P16 (.PFZP16.)
  - P15 (.PFZP15.)
  - P14 (.PFZP14.)
  - P13 (.PFZP13.)
  - P12 (.PFZP12.)
  - P11 (.PFZP11.)
  - P10 (.PFZP10.)
  - P09 (.PFZP09.)
  - P08 (.PFZP08.)
  - P07 (.PFZP07.)
  - P06 (.PFZP06.)
- Paleocene
  - P06 (.PFZP06.)
  - P05 (.PFZP05.)
  - P04 (.PFZP04.)
  - P03 (.PFZP03.)
  - P02 (.PFZP02.)
  - P01 (.PFZP01.)

PALEOMAGNETIC CHRON SEQUENCE (.PMC.) From Cande and Kent (1995)

- Pleistocene
  - Chron C1 (.PMC01.)
  - Chron C2 (.PMC02.)
- Pliocene
  - Chron C2 (.PMC02.)
  - Chron C2A (.PMC02A.)
  - Chron C3 (.PMC03.)
- Miocene
  - Chron C3 (.PMC03.)
  - Chron C3A (.PMC03A.)
  - Chron C3B (.PMC03B.)
  - Chron C4 (.PMC04.)
  - Chron C4A (.PMC04A.)
  - Chron C5 (.PMC05.)
  - Chron C5 (.PMC05.)
  - Chron C5A (.PMC05A.)
  - Chron C5B (.PMC05B.)
  - Chron C5C (.PMC05C.)
  - Chron C5D (.PMC05D.)
  - Chron C5E (.PMC05E.)
  - Chron C6 (.PMC06.)
  - Chron C6A (.PMC06A.)
  - Chron C6B (.PMC06B.)
- Oligocene
  - Chron C6C (.PMC06C.)
  - Chron C7 (.PMC07.)
  - Chron C7A (.PMC07.)
  - Chron C8 (.PMC08.)
  - Chron C9 (.PMC09.)
  - Chron C10 (.PMC10.)
  - Chron C11 (.PMC11.)
  - Chron C12 (.PMC12.)
  - Chron C13 (.PMC13.)
  - Chron C15 (.PMC15.)
  - Chron C16 (.PMC16.)
  - Chron C17 (.PMC17.)
- Eocene
  - Chron C17 (.PMC17.)
  - Chron C18 (.PMC18.)
  - Chron C19 (.PMC19.)
  - Chron C20 (.PMC20.)
  - Chron C21 (.PMC21.)
  - Chron C22 (.PMC22.)
  - Chron C23 (.PMC23.)
  - Chron C24 (.PMC24.)
  - Chron C25 (.PMC25.)
  - Chron C26 (.PMC26.)
- Paleocene
  - Chron C27 (.PMC27.)
  - Chron C28 (.PMC28.)
  - Chron C29 (.PMC29.)
- Cretaceous
  - Chron C30 (.PMC30.)
  - Chron C31 (.PMC31.)
  - Chron C32 (.PMC32.)
  - Chron C33 (.PMC33.)
  - Chron C34 (.PMC34.)

TEPHROCHRONOLOGIC SEQUENCE (.TCS.) From Bartow (1990)

- Pleistocene
  - Lava Creek tuff (.TCSV.)
  - Bishop tuff (.TCSB.)
  - Glass Mountain tuff D (.TCSGD.)
  - Glass Mountain tuff G (.TCSGG.)
  - Bailey tuff (.TCSY.)
- Pliocene
  - Huckleberry Ridge tuff (.TCSH.)
  - Tulare C tuff (.TCSTC.)
  - Tulare S tuff (.TCSTS.)
  - Nomlaki tuff (.TCSN.)
  - Lawlor tuff (.TCSL.)
  - Alturas tuff (.TCSA.)
- Miocene
  - Modelo (?) tuff (.TCSM.)

CONFIDENCE AND BASIS FOR ASSIGNMENT OF GEOLOGIC UNITS TO POLYGONS (.CAG.)

Identification based on field observation	(.CAGF.)	Identification based on extrapolation	(.CAGE.)	Identification determined by other workers	(.CAGW.)
Geologic-unit assignment is certain	(.CAGFC.)	Geologic-unit assignment is certain	(.CAGEC.)		
Geologic-unit assignment is likely but is not confirmed	(.CAGFL.)	Geologic-unit assignment is likely but is not confirmed	(.CAGEL.)		
Geologic-unit assignment is uncertain	(.CAGFU.)	Geologic-unit assignment is uncertain	(.CAGEU.)		
* Observation station within polygon	(.CAGFO.)	* Air-photo identification	(.CAGEA.)		
Outcrop observation	(.CAGFOO.)	* Remote-sensing-imagery identification	(.CAGER.)		
Thin-section observation	(.CAGFOT.)	* Extrapolation in conjunction with published observation by other workers	(.CAGEWP.)		
Stained-slab observation	(.CAGFOS.)	* Extrapolation in conjunction with unpublished observation by other wortkers	(.CAGEWU.)		
* Binocular determination	(.CAGFB.)				

BASIS & CONFIDENCE OF AGE ASSIGNMENT (.ABC.)

Fossils	(.ABCF.)	Regional correlation	(.ABCC.)
Age is certain	(.ABCFC.)	Age is certain	(.ABCCC.)
Age is likely but not confirmed	(.ABCFL.)	Age is likely but not confirmed	(.ABCCL.)
Age is uncertain	(.ABCFU.)	Age is uncertain	(.ABCCU.)
Geomorphic development	(.ABCG.)	Stratigraphic relations	(.ABCS.)
Age is certain	(.ABCGC.)	Age is certain	(.ABCSC.)
Age is likely but not confirmed	(.ABCGL.)	Age is likely but not confirmed	(.ABCSL.)
Age is uncertain	(.ABCGU.)	Age is uncertain	(.ABCSU.)
Intrusive relations	(.ABCR.)	Soil development	(.ABCD.)
Age is certain	(.ABCRC.)	Age is certain	(.ABCDC.)
Age is likely but not confirme	(.ABCRL.)	Age is likely but not confirmed	(.ABCDL.)
Age is uncertain	(.ABCRU.)	Age is uncertain	(.ABCDU.)
Isotopic age	(.ABCI.)	Tephrochronology	(.ABCT.)
Age is certain	(.ABCIC.)	Age is certain	(.ABCTC.)
Age is likely but not confirmed	(.ABCIL.)	Age is likely but not confirmed	(.ABCTL.)
Age is uncertain	(.ABCIU.)	Age is certain	(.ABCTC.)
Paleomagnetism	(.ABCP.)		
Age is certain	(.ABCPC.)		
Age is likely but not confirmed	(.ABCPL.)		
Age is uncertain	(.ABCPU.)		

STRATIGRAPHIC CLASSIFICATION OF BEDROCKS AND SURFICIAL MATERIALS

Rock-stratigraphic classification (.RSC.)

Surficial stratigraphic units (.RSCS.)

Informal surficial units	(.RSCSI.)
Alluvial units	(.RSCSIA.)
alluvial-fan units	(.RSCSIAF.)
alluvial-fan deposits, modern	(.RSCSIAFM.)
alluvial-fan deposits, young	(.RSCSIAFY.)
alluvial-fan deposits, old	(.RSCSIAFO.)
alluvial-fan deposits, very old	(.RSCSIAFV.)
axial-valley units	(.RSCSIAV.)
axial-valley deposits, modern	(.RSCSIAVM.)
axial-valley deposits, young	(.RSCSIAVY.)
axial-valley deposits, old	(.RSCSIAVO.)
axial-valley deposits, very old	(.RSCSIAVV.)
wash units	(.RSCSIAW.)
wash deposits, modern	(.RSCSIAWM.)
active	(.RSCSIAWMA.)
intermittently active	(.RSCSIAWMI.)
older	(.RSCSIAWMO.)
wash deposits, young	(.RSCSIAWY.)
wash deposits, old	(.RSCSIAWO.)
wash deposits, very old	(.RSCSIAWV.)
pediment veneer units	(.RSCSIAP.)
pediment-veneer deposits, modern	(.RSCSIAPM.)
pediment-veneer deposits, young	(.RSCSIAPY.)
pediment-veneer deposits, old	(.RSCSIAPO.)
pediment-veneer deposits, very old	(.RSCSIAPV.)
Eolian units	(.RSCSIE.)
eolian deposits, modern	(.RSCSIEM.)
eolian deposits, young	(.RSCSIEY.)
eolian deposits, old	(.RSCSIEO.)
eolian deposits, very old	(.RSCSIEV.)
Glacial units	(.RSCSIG.)
glacial deposits, modern	(.RSCSIGM.)
glacial deposits, young	(.RSCSIGY.)
glacial deposits, old	(.RSCSIGO.)
glacial deposits, very old	(.RSCSIGV.)
Hillslope units	(.RSCSIH.)
talus units	(.RSCSIHT.)
talus deposits, modern	(.RSCSIHTM.)
talus deposits, young	(.RSCSIHTY.)
talus deposits, old	(.RSCSIHTO.)
talus deposits, very old	(.RSCSIHTV.)
colluvium units	(.RSCSIHC.)
colluvium deposits, modern	(.RSCSIHCM.)
colluvium deposits, young	(.RSCSIHCY.)
colluvium deposits, old	(.RSCSIHCO.)
colluvium deposits, very old	(.RSCSIHCV.)
slope-wash units	(.RSCSIHS.)
slope-wash deposits, modern	(.RSCSIHSM.)
slope-wash deposits, young	(.RSCSIHSY.)
slope-wash deposits, old	(.RSCSIHSO.)
slope-wash deposits, very old	(.RSCSIHSV.)
Lacustrine units	(.RSCSIL.)
lacustrine deposits, modern	(.RSCSILM.)
lacustrine deposits, young	(.RSCSILY.)
lacustrine deposits, old	(.RSCSILO.)
lacustrine deposits, very old	(.RSCSILV.)
Marine units	(.RSCSIM.)
marine deposits, modern	(.RSCSIMM.)
marine deposits, young	(.RSCSIMY.)
marine deposits, old	(.RSCSIMO.)
marine deposits, very old	(.RSCSIMV.)
Playa units	(.RSCSIP.)
playa deposits, modern	(.RSCSIPM.)
playa deposits, young	(.RSCSIPY.)
playa deposits, old	(.RSCSIPO.)
playa deposits, very old	(.RSCSIPV.)
Regolith or pedogenic-soil units	(.RSCSIR.)
regolith or pedogenic-soil deposits, modern	(.RSCSIRM.)
regolith or pedogenic-soil deposits, young	(.RSCSIRY.)
regolith or pedogenic-soil deposits, old	(.RSCSIRO.)
regolith or pedogenic-soil deposits, very old	(.RSCSIRV.)
Slope-failure units	(.RSCSIS.)
slope-failure deposits, modern	(.RSCSISM.)
slope-failure deposits, young	(.RSCSISY.)
slope-failure deposits, old	(.RSCSISO.)
slope-failure deposits, very old	(.RSCSISV.)
Surficial units, undifferentiated	(.RSCSIU.)
slope-failure deposits, modern	(.RSCSIUM.)
slope-failure deposits, young	(.RSCSIUY.)
slope-failure deposits, old	(.RSCSIUO.)
slope-failure deposits, very old	(.RSCSIUV.)

Bedrock stratigraphic units (.RSCB.)

Formal bedrock unit	(.RSCBF.)
Formation-rank unit	(.RSCBFF.)
Sedimentary Formation	(.RSCBFFS.)
Member	(.RSCBFFSM.)
Tongue	(.RSCBFFST.)
Lentil	(.RSCBFFSL.)
facies	(.RSCBFFSF.)
Plutonic Formation	(.RSCBFFP.)
Volcanic Formation	(.RSCBFFV.)
Tectonic Formation	(.RSCBFFT.)
Catastrophic Formation	(.RSCBFFC.)
Metamorphic Formation	(.RSCBFFM.)
Group	(.RSCBFG.)
Formation	(.RSCBFGF.)
Member	(.RSCBFGFM.)
Tongue	(.RSCBFGFT.)
Lentil	(.RSCBFGFL.)
facies	(.RSCBFGFF.)
Supergroup	(.RSCBFS.)
Group	(.RSCBFSG.)
Formation	(.RSCBFSGF.)
Member	(.RSCBFSGFM.)
Tongue	(.RSCBFSGFT.)
Lentil	(.RSCBFSGFL.)
facies	(.RSCBFSGFF.)
Formal bedrock unit with informal subunit	(.RSCBFI.)
Formation-rank unit	(.RSCBFIF.)
Sedimentary Formation	(.RSCBFIFS.)
informal member	(.RSCBFIFSM.)
informal tongue	(.RSCBFIFST.)
informal lentil	(.RSCBFIFSL.)
informal facies	(.RSCBFIFSF.)
Informal bedrock unit	(.RSCBI.)
formation-rank unit	(.RSCBIF.)
sedimentary formation	(.RSCBIFS.)
member	(.RSCBIFSM.)
tongue	(.RSCBIFST.)
lentil	(.RSCBIFSL.)
facies	(.RSCBIFSF.)
plutonic formation	(.SCRBIFP.)
volcanic formation	(.SCRBIFV.)
tectonic formation	(.SCRBIFT.)
metamorphic formation	(.SCRBIFM.)
catastrophic formation	(.SCRBIFC.)

SEDIMENTARY MATERIALS (.SED.)

MAJOR COMPOSITIONAL AND (OR) GENETIC CATEGORIES

SURFICIAL (.SEDF.)

Alluvial	(.SEDFA.)
Eolian	(.SEDFE.)
Deltaic	(.SEDFD.)
Glacial	(.SEDFG.)
Hillslope	(.SEDFH.)
Lake	(.SEDFL.)
Marine	(.SEDFM.)
Playa	(.SEDFP.)
Slope failure	(.SEDFS.)
Weathered and (or) modified parent material	(.SEDFW.)
Other	(.SEDFO.)
Unspecified	(.SEDFU.)

SILICICLASTIC (.SEDS.)

Quartz-rich	(.SEDSQ.)
Quartzo-feldspathic	(.SEDSZ.)
Feldspar-rich	(.SEDSF.)
Lithic-rich	(.SEDSL.)
Matrix-rich	(.SEDSM.)

CARBONATE (.SEDC.)

Calcareous rock	(.SEDCC.)
Dolomitic rock	(.SEDCD.)
Impure carbonate rock	(.SEDCI.)
Pure & impure carbonate rocks mixed	(.SEDCX.)
Heterogeneous carbonate rocks	(.SEDCH.)
Interbedded carbonate & noncarbonate rocks	(.SEDCB.)

CALCLASTIC (.SEDL.)

Carbonate siltstone	(.SEDLM.)
Carbonate siltstone, sandy	(.SEDLMS.)
Carbonate sandstone, silty	(.SEDLSM.)
Carbonate sandstone	(.SEDLS.)
Carbonate sandstone, conglomeratic	(.SEDLSC.)
Carbonate conglomerate, sandy	(.SEDLCS.)
Carbonate conglomerate	(.SEDLC.)

PHOSPHATIC (.SEDP.) → IRONSTONE (.SEDI.)

VOLCANICLASTIC (.SEDV.)

Volcaniclastic siltstone	(.SEDVM.)
Volcaniclastic siltstone, sandy	(.SEDVMS.)
Volcaniclastic sandstone, silty	(.SEDVSM.)
Volcaniclastic sandstone	(.SEDVS.)
Volcaniclastic sandstone, conglomeratic	(.SEDVSC.)
Volcaniclastic conglomerate, sandy	(.SEDVCS.)
Volcaniclastic conglomerate	(.SEDVC.)

BIOGENIC (.SEDB.)

Diatomaceous rock	(.SEDBD.)
Foraminiferal rock	(.SEDBF.)
Nannofossil rock	(.SEDBN.)
Radiolarian rock	(.SEDBR.)

CHERT (.SEDH.)

Nodular chert	(.SEDHN.)
Bedded chert	(.SEDHB.)
Ribbon chert	(.SEDHR.)

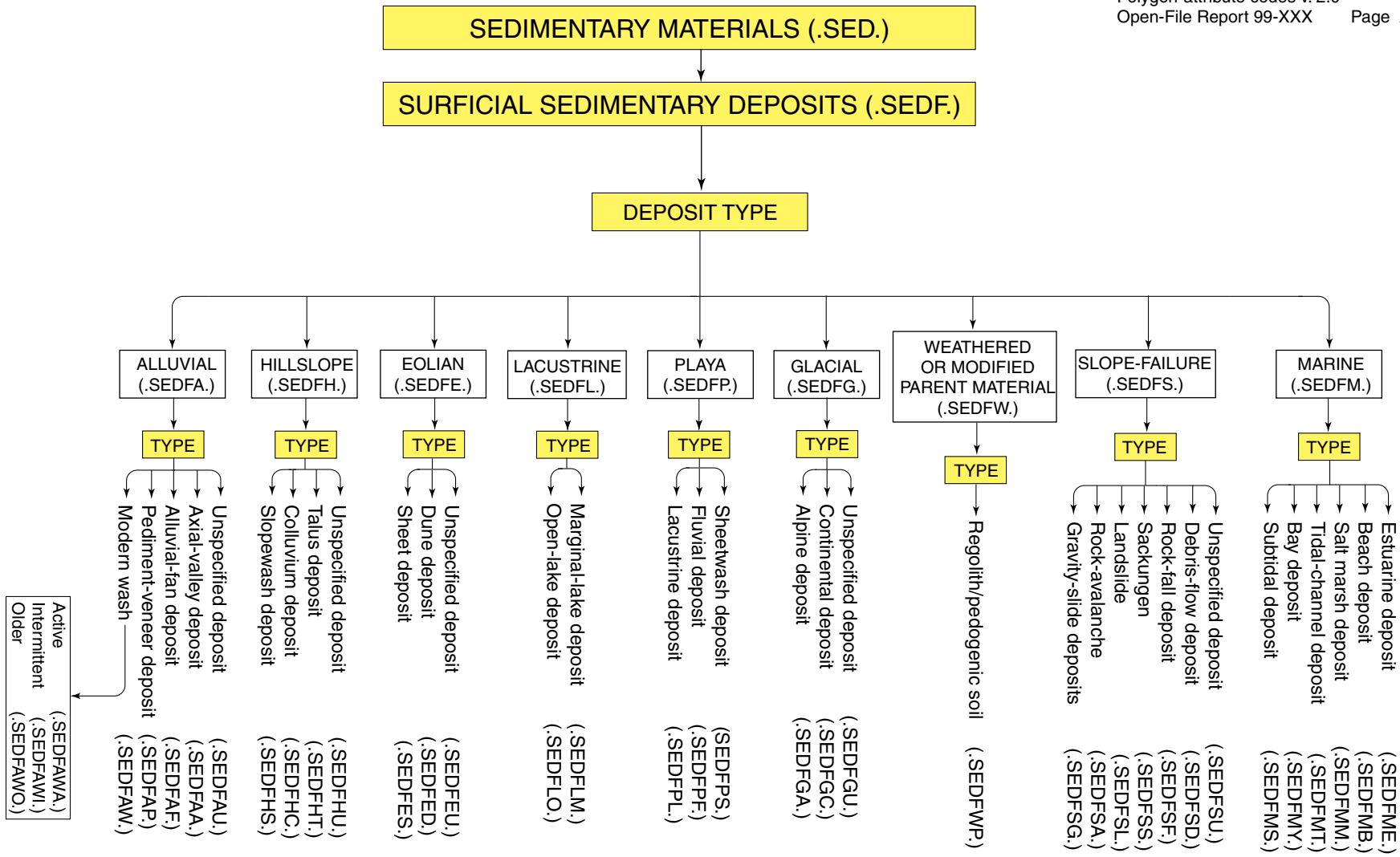
CATASTROPHIC (.SEDK.)

Brecciated and shattered rock	(.SEDKB.)
Shattered block	(.SEDKBS.)
Rubble	(.SEDKBR.)
Shattered block and rubble	(.SEDKBSR.)
Breccia unspecified	(.SEDKBU.)
Catastrophically deposited sedimentary breccia	(.SEDKS.)
Roundstone conglomerate	(.SEDKR.)

EVAPORITE (.SEDE.)

Filamentous evaporite	(.SEDEF.)
Nodular evaporite	(.SEDEN.)
Varved evaporite	(.SEDEV.)
Bedded evaporite	(.SEDEB.)

CARBONACEOUS (.SEDO.)


SEDIMENTARY MATERIALS (.SED.)
SURFICIAL SEDIMENTARY DEPOSITS (.SEDF.)
DEPOSIT TYPE
MARINE (.SEDFM.)
TYPE
Estuarine deposit (.SEDFME.)
Beach deposit (.SEDFMB.)
Salt marsh deposit (.SEDFMM.)
Tidal-channel deposit (.SEDFMT.)
Bay deposit (.SEDFMY.)
Subtidal deposit (.SEDFMS.)
SLOPE-FAILURE (.SEDFS.)
TYPE
Unspecified deposit (.SEDFSU.)
Debris-flow deposit (.SEDFSD.)
Rock-fall deposit (.SEDFSF.)
Sackungen (.SEDFSS.)
Landslide (.SEDFSL.)
Rock-avalanche (.SEDFSA.)
Gravity-slide deposits (.SEDFSG.)
WEATHERED OR MODIFIED PARENT MATERIAL (.SEDFW.)
TYPE
Regolith/pedogenic soil (.SEDFWP.)
GLACIAL (.SEDFG.)
TYPE
Unspecified deposit (.SEDFGU.)
Continental deposit (.SEDFGC.)
Alpine deposit (.SEDFGA.)
PLAYA (.SEDFP.)
TYPE
Sheetwash deposit (SEDFPS.)
Fluvial deposit (.SEDFPF.)
Lacustrine deposit (.SEDFPL.)
LACUSTRINE (.SEDFL.)
TYPE
Marginal-lake deposit (.SEDFLM.)
Open-lake deposit (.SEDFLO.)
EOLIAN (.SEDFE.)
TYPE
Unspecified deposit (.SEDFEU.)
Dune deposit (.SEDFED.)
Sheet deposit (.SEDFES.)
HILLSLOPE (.SEDFH.)
TYPE
Unspecified deposit (.SEDFHU.)
Talus deposit (.SEDFHT.)
Colluvium deposit (.SEDFHC.)
Slopewash deposit (.SEDFHS.)
ALLUVIAL (.SEDFA.)
TYPE
Unspecified deposit (.SEDFAU.)
Axial-valley deposit (.SEDFAA.)
Alluvial-fan deposit (.SEDFAF.)
Pediment-veneer deposit (.SEDFAP.)
Modern wash (.SEDFAW.)
Active (.SEDFAWA.)
Intermittent (.SEDFAWI.)
Older (.SEDFAWO.)

SEDIMENTARY MATERIALS (.SED.)

SURFICIAL SEDIMENTARY DEPOSITS (.SEDF.)

GENERAL SEDIMENT CHARACTER (.GSC.)

(1) DISPLACED DEPOSITS (.GSCD.)

Displaced block	(.GSCDB.)
Displaced block with internal stratigraphy intact	(.GSCDBS.)
Displaced rubble	(.GSCDR.)
Displaced rubble & blocks	(.GSCDRB.)

(2) DOMINANTLY SAND AND GRAVEL DEPOSITS (.GSCG.)

Gravelly deposits	(.GSCGG.)
Gravel dominant over sand	(.GSCGV.)
Gravel and sand subequal	(.GSCGQ.)
Sand dominant over gravel	(.GSCGS.)

(3) DOMINANTLY SAND AND FINE DEPOSITS (.GSCS.)

Sandy deposits	(.GSCSS.)
Sand dominant over fines	(.GSCSD.)
Sand and fines subequal	(.GSCSQ.)

(4) DOMINANTLY FINE DEPOSITS (.GSCF.)

Fines dominant over sand	(.GSCFF.)
Silty deposits	(.GSCFL.)
Silt dominant over clay	(.GSCFLY.)
Clay dominant over silt	(.GSCFYL.)
Clay and mud deposits	(.GSCFYM.)

SPECIFIC SEDIMENT TYPE

Gravel	(.GVL.)
Gravel, boulder	(.GVLB.)
Gravel, cobble-boulder	(.GVLCB.)
Gravel, pebble-boulder	(.GVLPB.)
Gravel, cobble	(.GVLC.)
Gravel, pebble-cobble	(.GVLPC.)
Gravel, pebble	(.GVLP.)
Gravel, granule-pebble	(.GVLGP.)
Gravel, granule	(.GVLG.)
Gravel, sandy	(.GVLS.)
Gravel, sandy cobble	(.GVLSC.)
Gravel, sandy pebble-cobble	(.GVLSPC.)
Gravel, sandy pebble	(.GVLSP.)
Gravel, sandy granule-pebble	(.GVLSGP.)
Gravel, sandy granule	(.GVLSG.)
Gravel, muddy	(.GVLM.)
Sand, gravelly	(.SNDG.)
Sand, bouldery	(.SNDGB.)
Sand, cobbly & bouldery	(.SNDGCB.)
Sand, cobbly	(.SNDGC.)
Sand, pebbly & cobbly	(.SNDGPC.)
Sand, cobbly pebble-granule	(.SNDGCPG.)
Sand, pebbly	(.SNDGP.)
Sand, pebbly granule-bearing	(.SNDGPGB.)
Sand, granule-bearing	(.SNDGGB.)

Sand	(.SND.)
Sand, very coarse	(.SNDVC.)
Sand, coarse to very coarse	(.SNDCVC.)
Sand, medium to very coarse	(.SNDMVC.)
Sand, fine to very coarse	(.SNDFVC.)
Sand, very fine to very coarse	(.SNDVFVC.)
Sand, coarse	(.SNDC.)
Sand, medium to coarse	(.SNDMC.)
Sand, fine to coarse	(.SNDFC.)
Sand, very fine to coarse	(.SNDVFC.)
Sand, medium	(.SNDM.)
Sand, fine to medium	(.SNDFM.)
Sand, very fine to medium	(.SNDVFM.)
Sand, fine	(.SNDF.)
Sand, very fine to fine	(.SNDVFF.)
Sand, very fine	(.SNDVF.)
Sand, silty	(.SNDL.)
Sand, silty, medium to coarse	(.SNDLMC.)
Sand, silty, fine to coarse	(.SNDLFC.)
Sand, silty, very fine to coarse	(.SNDLVFC.)
Sand, silty, medium	(.SNDLM.)
Sand, silty, fine to medium	(.SNDLFM.)
Sand, silty, very fine to medium	(.SNDLVFM.)
Sand, silty, fine	(.SNDLF.)
Sand, silty, very fine to fine	(.SNDLVFF.)
Sand, silty, very fine	(.SNDLVF.)

Sand, muddy	(.SNDU.)
Sand, clay-bearing	(.SNDCY.)
Sand, clay- and silt-bearing	(.SNDCYL.)
Silt	(.SLT.)
Silt, gravelly	(.SLTG.)
Silt, sandy	(.SLTS.)
Silt, muddy	(.SLTU.)
Mud	(.MUD.)
Mud, gravelly	(.MUDG.)
Mud, sandy	(.MUDS.)
Mud, silty	(.MUDL.)
Clay	(.CLY.)
Clay, gravelly	(.CLYG.)
Clay, sandy	(.CLYS.)
Clay, silty	(.CLYL.)
Blocks, debris, and rubble	(.BDR.)
carbonate debris	(.BDRC.)
granitic debris	(.BDRG.)
metamorphic debris	(.BDRM.)
mixed debris	(.BDRX.)
sedimentary debris	(.BDRS.)

LITHOLOGIC LAYERING CHARACTER (.LCH.)

(1) DISCRETELY INTERBEDDED LITHOLOGIES (.LCHI.)

Gravel & sand	(.LCHIGS.)
Sand, silt, & clay	(.LCHIS.)
Sand, silt, clay, & peat	(.LCHISP.)
Gravel & mud	(.LCHIGU.)

(2) COARSE FLOATERS IN FINES (.LCHF.)

Gravel floating in sand	(.LCHFG.)
Sand floating in silt or clay	(.LCHFS.)

SURFICIAL SEDIMENTARY DEPOSITS (.SEDF.)

MINOR INTERBEDDED MATERIALS (.INT.)

Buried paleosols	(.INTP.)
Interbedded carbonate material	(.INTC.)
calcrete	(.INTCK.)
caliche	(.INTCC.)
caliche filaments	(.INTCCF.)
caliche-filled fractures	(.INTCCR.)
caliche mottles	(.INTCCM.)
caliche networks	(.INTCCW.)
caliche nodules	(.INTCCD.)
caliche seams	(.INTCCS.)
caliche, non-pedogenic	(.INTCCN.)
caliche, pedogenic	(.INTCCP.)
limestone	(.INTCL.)
marl	(.INTCM.)
Interbedded evaporite material	(.INTE.)
Interbedded organic material	(.INTO.)
asphaltic blebs	(.INTCA.)
lignite seams	(.INTOL.)
peat	(.INTOP.)
Interbedded volcanic material	(.INTV.)
volcanic ash	(.INTVA.)
air-fall tuff	(.INTVAA.)
ash-flow tuff	(.INTVAF.)
volcanic bodies	(.INTVB.)
andesite flows	(.INTVBA.)
basalt	(.INTVBB.)
flows	(.INTVBBF.)
plugs	(.INTVBBP.)
dacite-latite bodies	(.INTVBD.)

DEPOSITIONAL ORIGIN

DEPOSITIONAL GEOMORPHOLOGY	(.SEDFD.)
Sedimentary-fill deposit	(.SEDFDD.)
Strath-terrace-veneer deposit	(.SEDFDS.)
Marine-terrace deposit	(.SEDFDM.)
ALLUVIAL DEPOSITS	(.SEDFA.)
Alluvial-fan deposits	(.SEDFAF.)
Debris flow dominant over stream flow	(.SEDFAFD.)
Stream flow dominant over debris flow	(.SEDFAFS.)
Stream flow and debris flow subequal	(.SEDFAFQ.)
Fan-delta deposit	(.SEDFAFL.)
Axial-valley deposits	(.SEDFAA.)
Braided channel deposit	(.SEDFAAB.)
Marshy pond deposit	(.SEDFAAP.)
Meandering channel deposit	(.SEDFAAM.)
Overbank & meandering-channel deposits	(.SEDFAAO.)
EOLIAN DEPOSITS	(.SEDFE.)
Dune deposits	(.SEDFED.)
barchan-dune deposits	(.SEDFEDB.)
lingoidal-dune deposits	(.SEDFEDG.)
longitudinal-dune deposits	(.SEDFEDL.)
barchan-dunes superposed on long dunes	(.SEDFEDP.)
Sheet-sand deposits deposits	(.SEDFES.)
GLACIAL DEPOSITS	(.SEDFG.)
Alpine-glacier deposits	(.SEDFGA.)
morainal deposits	(.SEDFGAM.)
lateral moraine	(.SEDFGAML.)
medial moraine	(.SEDFGAMM.)
terminal moraine	(.SEDFGAMT.)
outwash deposits	(.SEDFGAO.)
Continental-glacier deposits	(.SEDFGC.)
morainal deposits	(.SEDFGCM.)
lateral moraine	(.SEDFGCML.)
medial moraine	(.SEDFGCMM.)
terminal moraine	(.SEDFGCMT.)
outwash deposits	(.SEDFGCO.)
LACUSTRINE (LAKE) DEPOSITS	(.SEDFL.)
lake floor	(.SEDFLF.)
lake shore	(.SEDFLR.)
lake bar	(.SEDFLB.)
deltaic	(.SEDFLD.)
carbonate flat	(.SEDFLC.)
mud flat	(.SEDFLL.)
interdeltaic	(.SEDFLI.)
fresh water	(.SEDFLH.)
saline	(.SEDFLS.)
LANDSLIDE DEPOSITS	(.SEDFSL.)
Displaced block	(.SEDFSLB.)
Displaced block with stratigraphy intact	(.SEDFSLBS.)
Displaced rubble	(.SEDFSLR.)
Displaced rubble and blocks	(.SEDFSLRB.)
Unspecified	(.SEDFSLU.)
RIVERINE (FLUVIAL) DEPOSITS	(.SEDFR.)
Fluvial lithofacies assemblages	(.SEDFRL.)
Gravel bed	(.SEDFRLG.)
Gravel bed, braided	(.SEDFRGB.)
Gravel bed, braided, with sediment--gravity-flow deposits	(.SEDFRLGBG.)
Gravel bed, braided, shallow	(.SEDFRLGBS.)
Gravel bed, braided, deep	(.SEDFRLGBD.)
Gravel bed, wandering	(.SEDFRLGW.)
Meandering (high-sinuosity)	(.SEDFRLM.)
Gravel bed, meandering	(.SEDFRLMG.)
Gravel-sand bed, meandering	(.SEDFRLMGS.)
Sandy, meandering	(.SEDFRLMS.)
Sandy, meandering, ephemeral	(.SEDFRLMSE.)
Fine-grained, meandering	(.SEDFRLMF.)
Braided (low-sinuosity)	(.SEDFRLB.)
Anastomosed	(.SEDFRLBA.)
Braided, low-sinuosity, with alternate bars	(.SEDFRLBB.)
Braided, sand-bed	(.SEDFRLBS.)
Braided, sand-bed, shallow, perennial	(.SEDFRLBSS.)
Braided, sand-bed, deep	(.SEDFRLBSD.)
Braided, sand-bed, high-energy	(.SEDFRLBSH.)
Braided, sand-bed, sheetflood, distal	(.SEDFRLBSF.)
Sheetflood, sand-bed, ephemeral, flashy	(.SEDFRLS.)
Eolian admixture	(.SEDFRLE.)
Colluvial admixture	(.SEDFRLC.)
Uncharacterized fluvial lithofacies	(.SEDFRLF.)
Fluvial depositional elements	
Channel deposit	(.SEDFRFC.)
Gravel bars & bedforms	(.SEDFRFG.)
Sandy-bedform deposit	(.SEDFRFS.)
Downstream-accretion forms (longitudinal bars)	(.SEDFRFD.)
Lateral-accretion forms (transverse bars)	(.SEDFRFL.)
Scour hollow deposit	(.SEDFRFH.)
Sediment-gravity flow deposit	(.SEDFRFY.)
Laminated sand-sheet deposit	(.SEDFRFE.)
Overbank-fines deposit	(.SEDFRFO.)
Unspecified fluvial deposit	(.SEDFRFU.)

SURFACE CHARACTER AND SOIL CHARACTER OF SURFICIAL DEPOSITS (.SCH.)

- SURFACE DISSECTION (.SCHD.)
  - Nondissected (.SDIN.)
  - Nondissected to slightly dissected (.SDINS.)
  - Slightly dissected (.SDIS.)
  - Slightly to moderately dissected (.SDISM.)
  - Moderately dissected flat-ridge & ravine (.SDIM.)
  - Moderately to well dissected (.SDIMW.)
  - Well dissected ridge-and-ravine (.SDIW.)
- SURFACE ARMOR (.SCHA.)
  - No pavement (.SCHAN.)
  - Slight pavement (.SCHAS.)
  - Moderate pavement (.SCHAM.)
  - Hard pavement, slightly degraded (.SCHAH.)
  - Degraded relict pavement (.SCHAD.)
- SURFACE VARNISH (.SCHV.)
  - Strong varnish (.SCHVT.)
  - Moderate varnish (SCHVM.)
  - Slight varnish (.SCHVS.)
  - No varnish (SCHVN.)
- COBBLE-WEATHERING STAGE[1] (.SCHC.)
  - Strongly weathered (.SCHCT.)
  - Substantially weathered (.SCHCB.)
  - Slightly weathered (..SCHCS.)
  - Unweathered (..SCHCU.)
- SURFACE MORPHOLOGY (.SCHM.)
  - Surface morphology largely degraded (.SCHMD.)
  - Surface morphology largely preserved (.SCHMP.)
    - Alluvial-flat setting (.SCHMPA.)
    - Anastomosing channels (.SCHMPC.)
    - Bar-and-swale (.SCHMPB.)
    - Debris-flow lobe (.SCHMPD.)
    - Eolian dunes (.SCHMPE.)
    - Hillslope sediment veneer (SCHMPV.)
    - Hummocky ground (.SCHMPH.)
    - Morainal ridges (.SCHMPM.)
    - Rock-avalanche ridges (SCHMPR.)
    - Scree slope (.SCHMPS.)
    - Talus cone (.SCHMPT.)
- SURFACE SOIL (.SCHS.)
  - No pedogenic soil development (.SCHS.)
  - Pedogenic soil degraded (.SCHSD.)
  - Non-calcic soils with organic A (.SCHSO.)
    - Weak soil development (.SCHSOW.)
      - Weak A horizon (SCHSOWA.)
      - A/C soils (.SCHSOWC.)
      - A/Bw/C soils (SCHSOWW.)
    - Moderate soil development (.SCHSOM.)
      - A/weak Bt/C soils (.SCHSOMBW.)
      - Moderate Bt soils (.SCHSOMBM.)
    - Strong soil development (.SCHSOS.)
      - Strong Bt (.SCHSOSBS.)
  - Silicic soils (.SCHSS.)
    - Duripan soils (.SSOSID.)
      - Silcrete (.SSOSIDS.)
  - Calcic soils[2] (.SCHSC.)
    - Weak soil development (.SCHSCW.)
      - Stage 1 Bk horizon (.SCHSCWK1.)
    - Moderate soil development (.SCHSCM.)
      - Stage 2 Bk horizon (.SCHSCMK2.)
      - Stage 3 Bk horizon (.SCHSCMK3.)
    - Strong soil development (.SCHSCS.)
      - Stage 4 Bk horizon (.SCHSCMK4.)
      - Stage 5 Bk horizon (.SCHSCMK5.)
      - Stage 6 Bk horizon (.SCHSCMK6.)
  - Av PROFILE DEVELOPMENT (.SCHSVV.)
    - Weak (.SCHSVW.)
    - Moderate (.SCHSVM.)
    - Strong (.SCHSVS.)

[1] From Bull, 1991, Table 2.6

[2] From Machette, 1985, modified from Gile and others, 1966

SEDIMENTARY MATERIALS (.SED.)

LITHOLOGIC CLASSIFICATION OF SEDIMENTARY ROCKS BASED ON GRAIN SIZE AND TEXTURE

MUDROCKS (.SEDM.)

SHALE	(.SEDMS.)
Shale, silty	(.SEDMSL.)
Shale, sandy	(.SEDMSS.)
CLAYSTONE	(.SEDMY.)
Claystone, silty	(.SEDMYL.)
Claystone, sandy	(.SEDMYS.)
MUDSTONE	(.SEDMM.)
Mudstone, silty	(.SEDMML.)
Mudstone, sandy	(.SEDMMS.)
Mudstone, conglomeratic	(.SEDMMC.)
Mudstone, pebbly	(.SEDMMCP.)
Mudstone, pebbly & cobbly	(.SEDMMCPC.)
Mudstone, cobbly	(.SEDMMCC.)
Mudstone, cobbly & bouldery	(.SEDMMCCB.)
Mudstone, bouldery	(.SEDMMCB.)
SILTSTONE	(.SEDML.)
Siltstone, sandy	(.SEDMLS.)
Siltstone, sandy conglomeratic	(.SEDMLSC.)
Siltstone, sandy granule	(.SEDMLSCG.)
Siltstone, sandy granule-pebble	(.SEDMLSCGP.)
Siltstone, sandy granule-cobble	(.SEDMLSCGC.)
Siltstone, sandy pebble-cobble	(.SEDMLSCPC.)
Siltstone, conglomeratic	(.SEDMLC.)
Siltstone, granule-bearing	(.SEDMLCG.)
Siltstone, pebbly granule	(.SEDMLCGP.)
Siltstone, pebbly	(.SEDMLCP.)
Siltstone, pebbly & cobbly	(.SEDMLCPC.)
Siltstone, cobbly	(.SEDMLCC.)

Specialized Name	
Lutite	(.LUT.)

Specialized Name	
Siltite	(.SIT.)

GRAINROCKS (.SEDG.)

SANDSTONE	(.SEDGS.)
SANDSTONE, MATRIX-RICH	(.SEDGSX.)
Sandstone, argillaceous	(.SEDGSXA.)
Sandstone, muddy	(.SEDGSXM.)
Sandstone, silty	(.SEDGSXL.)
SANDSTONE, CONGLOMERATIC	(.SEDGSC.)
Sandstone, granule-bearing	(.SEDGSCG.)
Sandstone, pebbly granule	(.SEDGSCGP.)
Sandstone, pebbly	(.SEDGSCP.)
Sandstone, pebbly & cobbly	(.SEDGSCPC.)
Sandstone, cobbly	(.SEDGSCC.)
Sandstone, cobbly boulder	(.SEDGSCCB.)
Sandstone, bouldery	(.SEDGSCB.)
CONGLOMERATE	(.SEDGC.)
Conglomerate, sandy	(.SEDGCS.)
Conglomerate, sandy granule	(.SEDGCSG.)
Conglomerate, sandy pebble	(.SEDGCSP.)
Conglomerate, granule	(.SEDGCG.)
Conglomerate, sandy granule-pebble	(.SEDGCSGP.)
Conglomerate, granule-pebble	(.SEDGCGP.)
Conglomerate, granule-cobble	(.SEDGCGC.)
Conglomerate, pebble	(.SEDGCP.)
Conglomerate, pebble-cobble	(.SEDGCPC.)
Conglomerate, sandy pebble-cobble	(.SEDGCGSPC.)
Conglomerate, pebble-boulder	(.SEDGCPB.)
Conglomerate, cobble	(.SEDGCC.)
Conglomerate, cobble-boulder	(.SEDGCCB.)
Conglomerate, boulder	(.SEDGCB.)
CONGLOMERATE, MATRIX SUPPORTED	(.SEDGCX.)
Conglomerate, granule	(.SEDGCXG.)
argillaceous	(.SEDGCXGA.)
silty	(.SEDGCXGL.)
muddy	(.SEDGCXGM.)
muddy & sandy	(.SEDGCXGMS.)
sand-supported	(.SEDGCXGS.)
Conglomerate, granule-pebble	(.SEDGCXGP.)
argillaceous	(.SEDGCXGPA.)
silty	(.SEDGCXGPL.)
muddy	(.SEDGCXGPM.)
muddy & sandy	(.SEDGCXGPMS.)
sand-supported	(.SEDGCXGPS.)
Conglomerate, pebble	(.SEDGCXP.)
argillaceous	(.SEDGCXPA.)
silty	(.SEDGCXPL.)
muddy	(.SEDGCXPM.)
muddy and sandy	(.SEDGCXPMS.)
sand-supported	(.SEDGCXPS.)
muddy sand & granule-supported	(.SEDGCXPMSG.)
Conglomerate, pebble-cobble	(.SEDGCXPC.)
argillaceous	(.SEDGCXPCA.)
silty	(.SEDGCXPCL.)
muddy	(.SEDGCXPCM.)
muddy & sandy	(.SEDGCXPCMS.)
sand-supported	(.SEDGCXPCS.)
muddy sand & granule-supported	(.SEDGCXPCMSG.)
sand & granule-supported	(.SEDGCXPCSG.)
Conglomerate, pebble-boulder	(.SEDGCXPB.)
argillaceous	(.SEDGCXPBA.)
silty	(.SEDGCXPBL.)
muddy	(.SEDGCXPBM.)
muddy & sandy	(.SEDGCXPBMS.)
sand-supported	(.SEDGCXPBS.)
muddy sand & granule-supported	(.SEDGCXPBMS.)
sand & granule-supported	(.SEDGCXPBSG.)
Conglomerate, cobble	(.SEDGCXC.)
argillaceous	(.SEDGCXCA.)
silty	(.SEDGCXCL.)
muddy	(.SEDGCXCM.)
muddy & sandy	(.SEDGCXCMS.)
sand-supported	(.SEDGCXCS.)
muddy sand & granule-supported	(.SEDGCXCMSG.)
sand & granule-supported	(.SEDGCXCSG.)
Conglomerate, cobble-boulder	(.SEDGCXCB.)
argillaceous	(.SEDGCXCBA.)
silty	(.SEDGCXCBL.)
muddy	(.SEDGCXCBM.)
muddy & sandy	(.SEDGCXCBMS.)
sand-supported	(.SEDGCXCBS.)
muddy sand & granule-supported	(.SEDGCXCBMSG.)
sand & granule-supported	(.SEDGCXCBSG.)
Conglomerate, boulder	(.SEDGCXB.)
argillaceous	(.SEDGCXBA.)
silty	(.SEDGCXBL.)
muddy	(.SEDGCXBM.)
muddy & sandy	(.SEDGCXBMS.)
sand-supported	(.SEDGCXBS.)
muddy sand & granule-supported	(.SEDGCXBMSG.)
sandy granule-supported	(.SEDGCXBSG.)
sandy granule & pebble-supported	(.SEDGCXBSGP.)

Specialized Name	
Arenite	(.ARN.)

Specialized Name	
Rudite	(.RUD.)

SEDIMENTARY ROCK (.SED.)

CARBONATE ROCK TYPE BASED ON COMPOSITION (.SEDC.)

DOMINANTLY CALCAREOUS ROCK (.SEDCC.)

Limestone	(.SEDCCL.)
Dolomitic limestone	(.SEDCCLD.)
Heterogeneous limestone	(.SEDCCLH.)

DOMINANTLY DOLOMITIC ROCK (.SEDCD.)

Dolostone	(.SEDCDD.)
Calcareous dolostone	(.SEDCDDC.)
Heterogeneous dolostone	(.SEDCDDH.)

MIXED CALCAREOUS & DOLOMITIC CARBONATE ROCKS (.SEDCM.)

Mixed dolostone & limestone	(.SEDCMD.)
Mixed limestone & dolostone	(.SEDCML.)

IMPURE CARBONATE ROCK (.SEDCI.)

Argillaceous carbonate	(.SEDCIA.)
Silty carbonate	(.SEDCIM.)
Sandy carbonate	(.SEDCIS.)
Conglomeratic carbonate	(.SEDCIG.)
Cherty carbonate	(.SEDCIC.)

Argillaceous limestone	(.SEDCIAL.)
Argillaceous dolostone	(.SEDCIAD.)
Silty limestone	(.SEDCIML.)
Silty dolostone	(.SEDCIMD.)
Sandy limestone	(.SEDCISL.)
Sandy dolostone	(.SEDCISD.)
Conglomeratic limestone	(.SEDCIGL.)
Conglomeratic dolostone	(.SEDCIGD.)
Cherty limestone	(.SEDCICL.)
Cherty dolostone	(.SEDCICD.)

PURE & IMPURE CARBONATE ROCK, MIXED (.SEDCX.)

Pure dominant over impure	(.SEDCXP.)
Impure dominant over pure	(.SEDCXI.)

INTERBEDDED CARBONATE & NON-CARBONATE ROCKS (.SEDCB.)

Interbedded chert	(.SEDCBC.)
Intermingled intrusive rock	(.SEDCBI.)
Interbedded siliclastic rock	(.SEDCBS.)
Interbedded volcanic rock	(.SEDCBV.)
Interbedded volcaniclastic rock	(.SEDCBK.)

CARBONATE LITHOLOGIC ATTRIBUTES (.CLA.)

Chert-bearing	(.CLACH.)
locally chert-bearing	(.CLACL.)
abundantly chert-bearing	(.CLACA.)
Non-carbonate impurities	(.CLAI.)
Disseminated pyrite	(.CLAIP.)
Fetid odor	(.CLAIF.)
Graphitic	(.CLAIG.)
Disseminated graphite	(.CLAIGD.)
Graphite streaks	(.CLAIGS.)

Post-depositional Structures (.STRP.)

Calcite fillings	(.STRPC.)
Blebs	(.STRPCB.)
Fractures	(.STRPCF.)
Stringers	(.STRPCS.)
Vugs	(.STRPCV.)
Dewatering structures	(.STRPW.)
Dissolution breccia	(.STRPB.)
Fenestrae	(.STRPF.)
Karst collapse structures	(.STRPK.)
Tepee structures	(.STRPT.)

PHYSICAL PROPERTIES OF SEDIMENTARY MATERIALS: OUTCROP-SCALE ATTRIBUTES

OUTCROP GEOMORPHOLOGY (.OGM.)

Blocky	(.OGMB.)
Cliff forming	(.OGMC.)
Fissil	(.OGMF.)
Interbedded ledge-forming & slope-forming	(.OGMI.)
Ledgeforming	(.OGML.)
Massive, blocky	(.OGMMB.)
Massive, rounded	(.OGMMR.)
Recessive	(.OGMR.)
Regolith	(.OGMH.)
Rib-forming	(.OGMG.)
Rounded	(.OGMD.)
Slope-forming	(.OGMS.)
Weathered, slightly	(.OGMWSL.)
Weathered, substantially	(.OGMWSU.)
Weathered, strongly	(.OGMWST.)

SURFICIAL MATERIALS

CONSOLIDATION (.CON.)

Unconsolidated	(.CSLU.)
Unconsolidated to consolidated	(.CSLUC.)
Unconsolidated to slightly consolidated	(.CSLUCS.)
Unconsolidated to moderately consolidated	(.CSLUCM.)
Unconsolidated to well consolidated	(.CSLUCW.)
Unconsolidated to cemented	(.CSLUE.)
Consolidated	(.CSLC.)
Consolidated, slightly	(.CSLCS.)
Consolidated, slightly to moderately	(.CSLCSM.)
Consolidated, moderately	(.CSLCM.)
Consolidated, moderately to well	(.CSLCMW.)
Consolidated, well	(.CSLCW.)
Consolidated, well, to indurated	(.CSLCWI.)
Consolidated, variably	(.CSLCV.)
Consolidated to cemented	(.CSLCE.)
Cemented, locally	(.CSLEL.)

SEDIMENTARY ROCK

Consolidated	(.INDC.)
Consolidated to indurated	(.INDCI.)
Indurated	(.INDI.)
Indurated to cemented	(.INDIE.)
Consolidated to cemented	(.INDCE.)
Cemented	(.INDE.)
calcite cement	(.CEMC.)
clay cement	(.CEMY.)
hematite cement	(.CEMH.)
silca cement	(.CEMS.)
zeolitic cement	(.CEMZ.)
Crystalline	(.INDY.)
Variable	(.INDV.)

SURFICIAL MATERIALS AND SEDIMENTARY BEDROCK

BEDDING THICKNESS

Laminated	(.BEDL.)
Laminated, thinly	(.BEDLN.)
Laminated, thickly	(.BEDLK.)
Very thin	(.BEDVT.)
Very thin to thin	(.BEDVTT.)
Very thin to medium	(.BEDVTM.)
Very thin to thick	(.BEDVTK.)
Very thin to v thick	(.BEDVTVK.)
Thin	(.BEDT.)
Thin to medium	(.BEDTM.)
Thin to thick	(.BEDTK.)
Thin to very thick	(.BEDTVK.)
Medium	(.BEDM.)
Medium to thick	(.BEDMK.)
Medium to very thick	(.BEDMVK.)
Thick	(.BEDK.)
Thick to very thick	(.BEDKVK.)
Very thick	(.BEDVK.)
Variable	(.BEDV.)

COLOR

Banded (cm to dm)	(.COLZ.)	Gray, olive	(.COLGO.)
Black	(.COLK.)	Gray, olive, light	(.COLGOL.)
Brownish	(.COLB.)	Gray, olive, pale	(.COLGOP.)
Brown, grayish	(.COLBG.)	Gray, pinkish	(.COLGP.)
Brown, greenish	(.COLBE.)	Gray, reddish	(.COLGR.)
Brown, orange	(.COLBO.)	Gray, yellowish	(.COLGY.)
Brown, pale	(.COLBP.)	Greenish	(.COLE.)
Brown, pale, very	(.COLBPV.)	Light colored	(.COLL.)
Brown, reddish	(.COLBR.)	Medium colored	(.COLM.)
Brown, yellowish	(.COLBY.)	Olive	(.COLO.)
Brown, yellowish, light	(.COLBYL.)	Olive, pale	(.COLOP.)
Dark colored	(.COLD.)	Pinkish	(.COLP.)
Grayish	(.COLG.)	Pale pink	(.COLPP.)
Gray, brownish	(.COLGB.)	Purplish	(.COLU.)
Gray, brownish, light	(.COLGBL.)	Purple, grayish red	(.COLURG.)
Gray, greenish	(.COLGE.)	Reddish	(.COLR.)
Gray, light	(.COLGL.)	Red, pale	(.COLRP.)
Gray, light to medium	(.COLGLM.)	Striped (mm to cm)	(.COLS.)
Gray, light to dark	(.COLGLD.)	Variable	(.COLV.)
Gray, medium	(.COLGM.)	White	(.COLW.)
Gray, medium to dark	(.COLGMD.)	White to light gray	(.COLWGL.)
Gray, dark	(.COLGD.)	Yellow	(.COLY.)
Gray, mottled	(.COLGT.)	Yellow, pale	(.COLYP.)

FOSSILS

None observed	(.FZLN.)
Sparse	(.FZLS.)
Moderately abundant	(.FZLM.)
Abundant	(.FZLA.)
Localized	(.FZLL.)

Post-depositional structures (.STRP.)

Calcite fillings	(.STRPC.)
Blebs	(.STRPCB.)
Fractures	(.STRPCF.)
Stringers	(.STRPCS.)
Vugs	(.STRPCV.)
Dewatering structures	(.STRPW.)
Dissolution breccia	(.STRPD.)
Fenestrae	(.STRPF.)
Karst collapse structures	(.STRPK.)
Tepee structures	(.STRPT.)

DEPOSITIONAL STRUCTURES (.STRS.)

Bedding character	(.STRSB.)	Bouma D	(.STRSZD.)	cross, hummocky	(.STRSLXH.)
amalgamated	(.STRSBA.)	Bouma AB	(.STRSZAB.)	cross, planar	(.STRSLXP.)
channelate	(.STRSBC.)	Bouma ABC	(.STRSZABC.)	cross, trough	(.STRSLXT.)
crudely bedded	(.STRSBR.)	Bouma ABCD	(.STRSZABCD.)	flat	(.STRSLF.)
graded	(.STRSBG.)	Bouma BC	(.STRSZBC.)	flat to cross laminated	(.STRSLFX.)
graded, inverse	(.STRSBGI.)	Bouma BCD	(.STRSZBCD.)	ripple	(.STRSLR.)
indistinctly bedded	(.STRSBI.)	Bouma CD	(.STRSZCD.)	ripple, climbing	(.STRSLRC.)
lenticular	(.STRSBL.)	Clast imbrication	(.STRSCI.)	Massive	(.STRSM.)
parallel	(.STRSBP.)	Fenestrate	(.STRSE.)	Massive to flat laminated	(.STRSMFL.)
non-bedded	(.STRSBX.)	Flaser structures	(.STRSF.)	Massive to mottled	(.STRSMT.)
non-parallel	(.STRSBN.)	Lamination	(.STRSL.)	Mottled	(.STRST.)
Bioturbated	(.STRST.)	algal	(.STRSLA.)	Mud cracks	(.STRSK.)
Bouma sequences	(.STRSZ.)	algal, laterally linked heads	(.STRSLAL.)	Pillow and ball	(.STRSP.)
Bouma A	(.STRSZA.)	algal, cryptalgal	(.STRSLAC.)	Sole marks	(.STRSS.)
Bouma B	(.STRSZB.)	convolute	(.STRSLC.)	Unconformities locally present	(.STRSU.)
Bouma C	(.STRSZC.)	cross	(.STRSLX.)	Variable	(.STRSV.)

PHYSICAL PROPERTIES OF SEDIMENTARY MATERIALS: HAND SPECIMEN-SCALE ATTRIBUTES

CLASTÑMATRIX RELATIONS (.CMX.)

Clast supported	(.CMXC.)
Matrix <25%	(.CMXC25.)
Matrix >25%<50%	(.CMXC50.)
Matrix supported	(.CMXM.)
Matrix >50%<75%	(.CMXM75.)
Matrix >75%	(.CMXM76.)
Clast support dominant over matrix support	(.CMXCD.)
Matrix support dominant over clast support	(.CMXMD.)
Clast support and matrix support subequal	(.CMXQ.)
Matrix character	(.MXC.)
Clay matrix	(.MXCY.)
Mud matrix	(.MXCM.)
Silty matrix	(.MXCL.)
Sandy matrix	(.MXCS.)
Sandy granule matrix	(.MXCSG.)
Sandy granule-pebble matrix	(.MXCSGP.)
Granule-pebble matrix	(.MXCGP.)
Pebble matrix	(.MXCP.)
Pebble-cobble matrix	(.MXCPC.)
Uncharacterized	(.MXCU.)

GRAIN SORTING (.GSO.)

Well sorted	(.GSOW.)
Moderately to well sorted	(.GSOMW.)
Poorly to well sorted	(.GSOPW.)
Moderately sorted	(.GSOM.)
Poorly to moderately sorted	(.GSOPM.)
Poorly sorted	(.GSOP.)
Variably sorted	(.GSOV.)

PALEOCURRENT INDICATORS (.PCI.)

Azimuth and direction	(.PCID.)
Out of the north hemisphere	(.PCIDN.)
Out of the northwest quadrant	(.PCIDNW.)
Out of the northeast quadrant	(.PCIDNE.)
Out of the south hemisphere	(.PCIDS.)
Out of the southwest quadrant	(.PCIDSW.)
Out of the southeast quadrant	(.PCIDSE.)
Out of the east hemisphere	(.PCIDE.)
Out of the west hemisphere	(.PCIDW.)
Indicator:	
clast imbrications	(.IDKIM.)
cross lamination	(.IDKXL.)
Azimuth only	(.PCIA.)
Azimuthal direction N-S	(.PCIAN.)
Azimuthal direction E-W	(.PCIAE.)
Azimuthal direction NW-SE	(.PCIANW.)
Azimuthal direction NE-SW	(.PCIANE.)
Indicator:	
channel geometry	(.IDKC.)

CARBONATE FABRIC ATTRIBUTES

Original depositional fabric preserved (.ORF.)

- Mud-supported (.ORFM.)
- Organic-supported (.ORFO.)
- Grain-supported (.ORFG.)

Lithology Type

Lime mudrock	(.MROL.)
Lime mudstone	(.MROLM.)
Lime wackestone	(.MROLW.)
Dolomitic mudrock	(.MROD.)
Dolomitic mudstone	(.MRODM.)
Dolomitic wackestone	(.MRODW.)

Lime grainrock	(.GROL.)
Lime packstone	(.GROLP.)
Lime grainstone	(.GROLG.)
Dolomitic grainrock	(.GROD.)
Dolomitic packstone	(.GRODP.)
Dolomitic grainstone	(.GRODG.)

Lime boundstone	(.BSTL.)
Dolomitic boundstone	(.BSTD.)

Original depositional fabric recrystallized (.RXF.)

Fine	(.RXFF.)
Fine to medium	(.RXFFM.)
Fine to coarse	(.RXFFC.)
Medium	(.RXFM.)
Medium to coarse	(.RXFMC.)
Coarse	(.RXFC.)
Variable	(.RXFV.)
Sugary	(.RXFS.)

SEDIMENTARY MATERIALS

ATTRIBUTES AND PROPERTIES OF GRAINS AND CLASTS

PARTICLE COMPOSITION

GRAIN COMPOSITION (.GCO.)

Quartz dominant	(.GCOQ.)
Quartz 95-100%	(.GCOQ95.)
Quartz >75<95%	(.GCOQ75.)
Polycrystalline quartz	(.GCOQP.)
Strained quartz	(.GCOQS.)
Quartz & feldspar subequal	(.GCOQF.)
Quartz, feldspar, & lithics subequal	(.GCOQFL.)
Feldspar dominant	(.GCOF.)
Lithics dominant	(.GCOL.)
Igneous rock fragments	(.GCOLI.)
Granitic rock fragments	(.GCOLIG.)
Volcanic rock fragments	(.GCOLIV.)
Andesite	(.GCOLIVA.)
Basalt	(.GCOLIVB.)
Siliceous	(.GCOLIVS.)
Tuffaceous	(.GCOLIVT.)
Sedimentary rock frags	(.GCOLS.)
Carbonate rock frags	(.GCOLSC.)
Chert rock frags	(.GCOLSH.)
Mudrock frags	(.GCOLSM.)
Metamorphic rock frags	(.GCOLM.)
Gneiss fragments	(.GCOLMG.)
Marble fragments	(.GCOLMM.)
Schist fragments	(.GCOLMS.)
Metaquartzite frags	(.GCOLMQ.)
Metavolcanic frags	(.GCOLMV.)
Mylonite	(.GCOLMY.)
Carbonate grains	(.GCOC.)
Intraclasts	(.GCOCI.)
Ooids	(.GCOCO.)
Peloids	(.GCOCP.)
Skeletal fragments	(.GCOCS.)
Algal fragments	(.GCOCSA.)
Brachiopod fragments	(.GCOCSB.)
Bryozoan fragments	(.GCOCSY.)
Coral fragments	(.GCOCSC.)
Fusulinid fragments	(.GCOCSF.)
Mollusk fragments	(.GCOCSM.)
Pelmatozoan fragments	(.GCOCSP.)
Trilobite fragments	(.GCOCST.)
Glauconite	(.GCOG.)
Micas	(.GCOA.)
Biotite	(.GCOAB.)
Muscovite	(.GCOAM.)
Phosphatic grains	(.GCOP.)
Peloids	(.GCOPP.)
Intraclasts	(.GCOPI.)
Replaced shell	(.GCOPR.)
Grain composition unspecified	(.GCOU.)
Grain composition variable	(.GCOV.)
Other	(.GCOTH.)

CLAST COMPOSITION (.CCO.)

Carbonate	(.CCOC.)
Intraclasts	(.CCOCI.)
Peloids (large)	(.CCOCP.)
Skeletal fragments	(.CCOCS.)
Algal fragments	(.CCOCSA.)
Brachiopod fragments	(.CCOCSB.)
Bryozoan fragments	(.CCOCSBZ.)
Coral fragments	(.CCOCSC.)
Foraminiferal fragments	(.CCOCSF.)
Fusulinids	(.CCOCSFF.)
Mollusk fragments	(.CCOCSCM.)
Pelmatozoan fragments	(.CCOCSP.)
Trilobite fragments	(.CCOCST.)
Igneous	(.CCOI.)
Hypabyssal	(.CCOIH.)
Plutonic	(.CCOIP.)
Mafic plutonic	(.CCOIPM.)
dioritic-gabbroic	(.CCOIPMD.)
Granitic	(.CCOIPG.)
granodioritic	(.CCOIPGG.)
muscovite leucogranite	(.CCOIPGL.)
monzodioritic	(.CCOIPGZD.)
monzogranitic	(.CCOIPGM.)
monzonitic	(.CCOIPGZ.)
quartz monzonitic	(.CCOIPGZQ.)
Aplite	(.CCOIA.)
Pegmatite	(.CCOIG.)
Volcanic	(.CCOIV.)
andesite	(.CCOIVA.)
basalt	(.CCOIVB.)
dacite-latite	(.CCOIVD.)
felsic	(.CCOIVF.)
lapilli	(.CCOIVL.)
mafic	(.CCOIVM.)
porphyry	(.CCOIVP.)
rhyolite	(.CCOIVR.)
tuff fragments	(.CCOIVT.)
ash-flow tuff	(.CCOIVTF.)
tuff-breccia	(.CCOIVTB.)
Metamorphic	(.CCOM.)
Gneiss	(.CCOMG.)
Metaigneous	(.CCOMI.)
amphibolite	(.CCOMIA.)
metavolcanic	(.CCOMIV.)
agglomerate	(.CCOMIVA.)
metatuff	(.CCOMIVT.)
Metasedimentary	(.CCOMS.)
marble	(.CCOMSM.)
marble, dolomite	(.CCOMSMD.)
marble, limestone	(.CCOMSML.)
metaquartzite	(.CCOMSQ.)
Schist	(.CCOMC.)
Sedimentary	(.CCOS.)
Carbonate rock	(.CCOSC.)
dolomite	(.CCOSCD.)
limestone	(.CCOSCL.)
Chert	(.CCOSH.)
Conglomerate	(.CCOSG.)
Mudrock	(.CCOSM.)
Quartzite	(.CCOSQ.)
Sandstone	(.CCOSS.)
Shale	(.CCOSL.)
Strain dominated	(.CCOD.)
Mylonite	(.CCODM.)
Cataclasite	(.CCODC.)

SEDIMENTARY-ROCK PARTICLE SIZE (.GSZS.) (as used by Wentworth, 1922)

(for particle-size attributes of surficial materials, see p. A-8)

GRAIN SIZE (.GSZSG.)

Sand	(.GSZSGS.)
Sand, very coarse (1mm-2mm)	(.GSZSGSVC.)
Sand, coarse to very coarse	(.GSZSGSCVC.)
Sand, medium to very coarse	(.GSZSGSMVC.)
Sand, fine to very coarse	(.GSZSGSFVC.)
Sand, very fine to very coarse	(.GSZSGSVFVC.)
Sand, coarse (0.5mm-1mm)	(.GSZSGSC.)
Sand, medium to coarse	(.GSZSGSMC.)
Sand, fine to coarse	(.GSZSGSFC.)
Sand, very fine to coarse	(.GSZSGSVFC.)
Sand, medium (0.25mm-0.50m m)	(.GSZSGSM.)
Sand, fine to medium	(.GSZSGSFM.)
Sand, very fine to medium	(.GSZSGSVFM.)
Sand, fine (0.125mm-0.25mm)	(.GSZSGSF.)
Sand, very fine to fine	(.GSZSGSVFF.)
Sand, very fine (0.0625mm-0.125mm)	(.GSZSGSVF.)
Silt (0.004mm-0.0625mm)	(.GSZSGM.)
Clay	(.GSZSGY.)
Variable grain size	(.GSZSGV.)
Uncertain	(.GSZSGU.)
due to grain overgrowths	(.GSZSGUO.)
due to re-crystallization	(.GSZSGUX.)
due to deformation	(.GSZSGUD.)
Uncharacterized	(.GSZSGN.)

CLAST SIZE (.GSZSC.)

Boulder	(.GSZSCB.)
large (1m-2m)	(.GSZSCBL.)
medium (512mm-1m)	(.GSZSCBM.)
small (256mm-512mm)	(.GSZSCBS.)
Cobble-boulder	(.GSZSCCB.)
Pebble-boulder	(.GSZSCPB.)
Granule-boulder	(.GSZSCGB.)
Cobble (64mm-256mm)	(.GSZSCC.)
large (128mm-256mm)	(.GSZSCCL.)
small (64mm-128mm)	(.GSZSCCS.)
Pebble-cobble	(.GSZSCPC.)
Pebble-large cobble	(.GSZSCPCL.)
Pebble-small cobble	(.GSZSCPCS.)
Granule-cobble	(.GSZSCGC.)
Pebble (4mm-64mm)	(.GSZSCP.)
Granule-pebble	(.GSZSCGP.)
Granule (2mm-4mm)	(.GSZSCG.)
Uncertain due to recrystallization	(.GSZSCX.)
Uncertain due to deformation	(.GSZSCF.)
Uncharacterized	(.GSZSCU.)

PARTICLE SHAPE (.GSHS.)

GRAIN SHAPE (.GSHSS.)

Angular	(.GSHSSA.)
Subangular	(.GSHSSG.)
Subrounded	(.GSHSSD.)
Rounded	(.GSHSSR.)
Angular to subangular	(.GSHSSAG.)
Angular to subrounded	(.GSHSSAD.)
Angular to rounded	(.GSHSSAR.)
Subangular to subrounded	(.GSHSSGD.)
Subangular to rounded	(.GSHSSGR.)
Subrounded to rounded	(.GSHSSDR.)
Shape variable	(.GSHSSV.)
Uncertain due to grain overgrowths	(.GSHSSG.)
Uncertain due to recrystallization	(.GSHSSX.)
Uncertain due to deformation	(.GSHSSF.)
Shape uncharacterized	(.GSHSSU.)

CLAST SHAPE (.GSHSC.)

Angular	(.GSHSCA.)
Subangular	(.GSHSCG.)
Subrounded	(.GSHSCD.)
Rounded	(.GSHSCR.)
Angular to subangular	(.GSHSCAG.)
Angular to subrounded	(.GSHSCAD.)
Angular to rounded	(.GSHSCAR.)
Subangular to subrounded	(.GSHSCGD.)
Subangular to rounded	(.GSHSCGR.)
Subrounded to rounded	(.GSHSCDR.)
Shape variable	(.GSHSCV.)
Uncertain due to recrystallization	(.GSHSCX.)
Uncertain due to deformation	(.GSHSCF.)
Shape uncharacterized	(.GSHSCU.)

SEDIMENTARY MATERIALS

PETROGRAPHY AND COMPOSITIONAL CLASSIFICATION

SANDSTONE CLASSIFICATION BASED ON FRAMEWORK-GRAIN COMPOSITION (.SSC.)

Folk (1968, 1974)	(.SSCF.)
Arenites	(.SSCFA.)
Quartz arenite (>95% qtz)	(.SSCFAQ.)
Sublitharenite (>75% qtz)	(.SSCFASL.)
Subarkose	(.SSCFASA.)
Litharenite	(.SSCFAL.)
Feldspathic litharenite	(.SSCFALF.)
Lithic arkose	(.SSCFAAL.)
Arkose	(.SSCFAA.)
McBride (1963)	(.SSCM.)
Quartzarenite	(.SSCMAQ.)
Sublitharenite	(.SSCMASL.)
Subarkose	(.SSCMASA.)
Lithic subarkose	(.SSCMASAL.)
Litharenite	(.SSCMAL.)
Feldspathic litharenite	(.SSCMALF.)
Lithic arkose	(.SSCMAAL.)
Arkose	(.SSCMAA.)
Pettijohn and others (1973, fig. 5-3)	(.SSCP.)
Arenites (<15% matrix)	(.SSCPA.)
Quartz arenite	(.SSCPAQ.)
Sublitharenite	(.SSCPASL.)
Subarkose	(.SSCPASA.)
Lithic arenite	(.SSCPAL.)
Arkosic arenite	(.SSCPAA.)
Wackes (>15% matrix)	(.SSCPW.)
Quartzwacke	(.SSCPWQ.)
Arkosic wacke	(.SSCPWA.)
Feldspathic graywacke	(.SSCPWF.)
Lithic graywacke	(.SSCPWL.)
Gilbert in Williams and others (1982, fig. 13-1)	(.SSCG.)
Arenites (<1% argillaceous matrix)	(.SSCGA.)
Quartz arenite	(.SSCGAQ.)
Feldspathic arenite	(.SSCGAF.)
Lithic arenite	(.SSCGAL.)
Wackes (>1% argillaceous matrix)	(.SSCGW.)
Quartz wacke	(.SSCGWQ.)
Feldspathic wacke	(.SSCGWF.)
Lithic wacke	(.SSCGWL.)
Friedman and Sanders (1978, Table 7-4)	(.SSCS.)
Sandstones (<15% matrix)	(.SSCSS.)
Quartz sandstone (>95% qtz)	(.SSCSSQ.)
Feldspar sandstone (>75% qtz)	(.SSCSSF.)
Rock-fragment sandstone	(.SSCSSR.)
Argillaceous sandstones (>15% matrix)	(.SSCSSA.)
Argillaceous quartz sandstone (>95% qtz)	(.SSCPSSAQ.)
Argillaceous feldspar sandstone (>75% qtz)	(.SSCPSSAF.)
Argillaceous rock-fragment sandstone	(.SSCPSSAR.)

GENERALIZED SANDSTONE FIELD NAMES BASED ON FRAMEWORK-GRAIN COMPOSITION (.SSG.)

Quartzose framework grains very abundant	(.SSGQ.)
Quartzite	(.SSGQZ.)
Quartzo-feldspathic framework grains abundant	(.SSGQF.)
Quartofeldspathic sandstone	(.SSGQFS.)
Feldspathic framework grains abundant	(.SSGF.)
Arkosic sandstone	(.SSGFA.)
Feldspathic sandstone	(.SSGFF.)
Lithic framework grains abundant	(.SSGL.)
Lithic sandstone	(.SSGLS.)
Quartzose lithic sandstone	(.SSGLSQ.)
Quartofeldspathic lithic sandstone	(.SSGLSQF.)
Micaceous framework grains abundant	(.SSGM.)
Micaceous sandstone	(.SSGMS.)
Micaceous lithic sandstone	(.SSGMLS.

GENERALIZED MUDROCK FIELD NAMES BASED ON OVERALL COMPOSITION OR TEXTURE (.MRG.)

Calcareous mudrock	(.MRGC.)
Calcareous mudstone	(.MRGCC.)
Foraminiferal mudstone	(.MRGCF.)
Nannofossil mudstone	(.MRGCN.)
Laminated mudrock	(.MRGL.)
Siliceous mudrock	(.MRGS.)
Bentonitic mudstone	(.MRGSB.)
Cherty mudstone	(.MRGSC.)
Diatomaceous mudstone	(.MRGSD.)
Radiolarian mudstone	(.MRGSR.)
Siliceous mudstone	(.MRGSS.)
Tuffaceous mudstone	(.MRGST.)

CLAST PROVINCIAL AFFINITIES (.CCOA.)

Clast affinities	(.CCOA.)
Mojave Desert type	(.CCOAM.)
Transverse Ranges type	(.CCOAT.)
San Bernardino Mtn type	(.CCOATB.)
Bighorn/Arrastre type	(.CCOATBB.)
Chocolate Mtn type type	(.CCOATC.)
San Gabriel Mtn type	(.CCOATG.)
Pelona-type schist	(.CCOATGP.)
Lowe-type plutonic	(.CCOATGL.)
Little San Bernardino Mts type	(.CCOATL.)
Catalina-type schist	(.CCOAC.)
Peninsular Ranges type	(.CCOAP.)
Clasts of a specific map unit	(.CCOU.)
Pelona-type Schist	(.CCOUP.)
greenstone unit	(.CCOUPE.)
grayschist unit	(.CCOUPS.)
Triassic megaporphyry	(.CCOUT.)
Keller Peak granodiorite	(.CCOUK.)
Wildhorse Quartzite	(.CCOUW.)
Mill Creek Formation	(.CCOUM.)
Clasts recycled from older unit	(.CCOR.)
Source formation known	(.CCORK.)
Crowder Fm	(.CCORKC.)
San Timoteo Fm	(.CCORKS.)
Source formation unknown	(.CCORUK.)

SEDIMENTARY ROCKS AND SURFICIAL MATERIALS: ADDITIONAL ATTRIBUTES

FOSSIL TYPES

MARINE FOSSILS (.FOSM.)		NONMARINE FOSSILS (.FOSN.)	
Marine invertebrates	(.FOSMI.)	Nonmarine invertebrates	(.FOSNI.)
acritarchs	(.FOSMIAC.)	mollusks	(.FOSNIM.)
brachiopods	(.FOSMIBR.)	gastropods	(.FOSNIMG.)
bryozoa	(.FOSMIBZ.)	pelecypods	(.FOSNIMP.)
conodonts	(.FOSMICD.)	ostracods	(.FOSNIO.)
corals	(.FOSMICO.)		
graptolites	(.FOSMIGP.)	Nonmarine vertebrates	(.FOSNV.)
mollusks	(.FOSMIM.)	fish	(.FOSNVF.)
ammonites	(.FOSMIMA.)	scales	
cephalopods	(.FOSMIMC.)	otoliths	
gastropods	(.FOSMIMG.)		
pelycopods	(.FOSMIMP.)	mammals	(.FOSNVM.)
ostracods	(.FOSMIO.)	large mammals	(.FOSNVML.)
pelmatozoans	(.FOSMIP.)	camel	(.FOSNVMLCM.)
crinoids	(.FOSMIPC.)	cat	(.FOSNVMLCA.)
stromatoporoids	(.FOSMIS.)	dog	(.FOSNVMLD.)
trilobites	(.FOSMIT.)	elephant	(.FOSNVMLE.)
		horse	(.FOSNVMLH.)
Marine vertebrates	(.FOSMV.)	rhinoceras	(.FOSNVMLR.)
fish	(.FOSMVF.)		
reptiles	(.FOSMVR.)	small mammals	(.FOSNVMS.)
		beaver	(.FOSNVMSB.)
Marine plants	(.FOSMP.)	rodent	(.FOSNVMSR.)
diatoms	(.FOSMPD.)	shrew	(.FOSNVMSS.)
dinoflagellates	(.FOSMPDF.)		
nannoplankton	(.FOSMPN.)	reptiles	(.FOSNVR.)
oncolites	(.FOSMPO.)	crocodile	(.FOSNVRC.)
		turtles	(.FOSNVRT.)
Marine protozoa	(.FOSMZ.)		
foraminifera	(.FOSMZF.)	Nonmarine plants	(.FOSNP.)
fusulinids	(.FOSMZFF.)	algae	(.FOSNPA.)
radiolaria	(.FOSMZR.)	plants, coniferous	(.FOSNPC.)
		plants, deciduous	(.FOSNPD.)
Marine trace fossils	(.FOSMT.)	plants, flowering	(.FOSNPF.)
scolithus	(.FOSMTS.)	wood	(.FOSNPW.)
zoophicus	(.FOSMTZ.)		
		Trace fossils	(.FOSNT.)
		tracks	(.FOSNTT.)

Fossil abundance indicators	
None observed	(.FZLN.)
Sparse	(.FZLS.)
Moderately abundant	(.FZLM.)
Abundant	(.FZLA.)
Localized	(.FZLL.)

ISOTOPIC AGE (.ISO.)

Age determined from sedimentary unit	(.ISOS.)	ash-flow tuff	(.ISOVF.)
glauconite	(.ISOSG.)	K-Ar age determination	(.ISOVFK.)
cathodoluminescence	(.ISOSL.)	Ar-Ar age determination	(.ISOVFA.)
paleomagnetism	(.ISOSP.)	air-fall tuff	(.ISOVA.)
fission track	(.ISOSF.)	Tephrochronology	(.ISOVAT.)
C14	(.ISOSC.)	K-Ar age determination	(.ISOVAK.)
Sr age from fossil shells	(.ISOSS.)	Ar-Ar age determination	(.ISOVAA.)
Amino-acid racimitization	(.ISOSR.)	Age from clasts in sedimentary unit	(.ISOC.)
uranium-thorium	(.ISOSU.)	U-Pb age determination	(.ISOCU.)
determination from bone	(.ISOSUB.)	K-Ar age determination	(.ISOCK.)
determination from petrocalcite	(.ISOSUP.)	Ar-Ar age determination	(.ISOCA.)
Age from interbedded volcanic deposit	(.ISOV.)		
basalt flow	(.ISOVB.)	Interpretation of isotopic age uncertain	(.ISOIU.)
K-Ar age determination	(.ISOVBK.)	Age from inside map area	(.ISOAI.)
Ar-Ar age determination	(.ISOVBA.)	Age from outside map area	(.ISOAO.)
		Age determined by other workers	(.ISOW.)

SEDIMENTARY MATERIALS (.SED.)

INFORMATION ABOUT STRATIGRAPHIC SEQUENCE AND VARIATIONS (.SEQ.)

VERTICAL STRATIGRAPHIC RELATIONS (.SEQV.)

LITHOLOGIC SEQUENCE	
Grainrock sequence, homogeneous	(.SEQVGO.)
Grainrock sequence, variable	(.SEQVGV.)
Grainrock and mudrock lithologies interbedded	(.SEQVGI.)
grainrock and mudrock subequal	(.SEQVGIQ.)
grainrock dominant over mudrock	(.SEQVGIG.)
mudrock dominant over grain rock	(.SEQVGIM.)
Mudrock sequence, homogeneous	(.SEQVMO.)
Mudrock sequence, variable	(.SEQVMV.)
Upward-fining sedimentary sequence, one cycle	(.SEQVFO.)
Upward-fining sedimentary sequence, multiple cycles	(.SEQVFM.)
Upward-coarsening sedimentary sequence, one cycle	(.SEQVCO.)
Upward-coarsening sedimentary sequence, multiple cycles	(.SEQVCM.)
POSITION OF LITHOLOGY IN MAP UNIT	(.SEQVP.)
Lithology dominant in lower part	(.SEQVPDL.)
Lithology dominant in middle part	(.SEQVPDM.)
Lithology dominant in upper part	(.SEQVPDU.)
Lithology subordinant in lower part	(.SEQVPSL.)
Lithology subordinant in middle part	(.SEQVPSM.)
Lithology subordinant in upper part	(.SEQVPSU.)
CONTACT RELATIONS	(.SEQVC.)
Lower contact	(.SEQVCL.)
lower contact conformable	(.SEQVCLC.)
lower contact abrupt	(.SEQVCLCA.)
lower contact transitional	(.SEQVCLCT.)
lower contact unconformable	(.SEQVCLU.)
lower contact is angular unconformity	(.SEQVCLUA.)
lower contact is paraconformity	(.SEQVCLUP.)
lower contact is nonconformity	(.SEQVCLUN.)
Upper contact	(.SEQVCU.)
upper contact conformable	(.SEQVCUC.)
upper contact abrupt	(.SEQVCUCA.)
upper contact transitional	(.SEQVCUCT.)
upper contact unconformable	(.SEQVCUU.)
upper contact is angular unconformity	(.SEQVCUUA.)
upper contact is paraconformity	(.SEQVCUUP.)
upper contact is nonconformity	(.SEQVCUUN.)

MINOR INTERBEDDED ROCKS OF DIFFERENT COMPOSITION THAN PREDOMINANT ROCK TYPES (.SEQI.)

Interbedded biogenic rock	(.SEQIB.)
Coal	(.SEQIBC.)
Lignite	(.SEQIBL.)
Peat	(.SEQIBP.)
Interbedded carbonate rock	(.SEQIC.)
Calcrete	(.SEQICK.)
Dolostone	(.SEQICD.)
Limestone	(.SEQICL.)
Marl	(.SEQICM.)
Interbedded catastrophic rock	(.SEQIK.)
Interbedded chert	(.SEQIH.)
Interbedded evaporitic rock	(.SEQIE.)
Intermingled igneous rock	(.SEQII.)
basaltic rock	(.SEQIIB.)
granitic rock	(.SEQIIG.)
ultramafic rock	(.SEQIIU.)
Interbedded paleosols	(.SEQIP.)
Interbedded volcanogenic rock	(.SEQIV.)
Interbedded volcanic ash beds	(.SEQIVA.)
tuff, air-fall	(.SEQIVAF.)
tuff, ash-flow	(.SEQIVAS.)
Interbedded volcanic bodies	(.SEQIVB.)
andesite flows	(.SEQIVBAF.)
andesite plugs	(.SEQIVBAP.)
basalt flows	(.SEQIVBBF.)
basalt plugs	(.SEQIVBBP.)
dacite-latite flows	(.SEQIVBDF.)
Interbedded volcaniclastic rock	(.SEQIW.)

SEDIMENTARY ORIGIN

MARINE (.MAR.)

Uncharacterized (.MARU.)

MARINE GEOGRAPHIC SETTING (.MARG.)

Oceanic	(.MARGO.)
Abyssal Plain	(.MARGOA.)
Plateau	(.MARGOP.)
Seamount	(.MARGOS.)
Continental margin	(.MARGM.)
Continental rise-slope	(.MARGMR.)
Continental shelf	(.MARGMS.)
Continental borderland	(.MARGMB.)
Continental interior	(.MARGI.)
Interior shelf-basin complex	(.MARGII.)
Epicontinental seaway	(.MARGIE.)
Setting uncharacterized	(.MARGU.)

MARINE DEPOSITIONAL FACIES (.MARF.)

BASINAL FACIES	(.MARFB.)
Proximal basin facies	(.MARFBP.)
Distal basin facies	(.MARFBD.)
Silled-basin facies	(.MARFBS.)
Uncharacterized facies	(.MARFBU.)
CARBONATE-SHELF FACIES [1]	(.MARFC.)
Platform-basin couplet	(.MARFCP.)
Platform tidal-flat facies	(.MARFCPT.)
Platform lagoon facies	(.MARFCPL.)
Platform subtidal facies	(.MARFCPS.)
Platform buildup facies	(.MARFCPB.)
Organic-buildup facies	(.MARFCPBO.)
Inorganic-buildup facies	(.MARFCPBI.)
Platform margin facies	(.MARFCPM.)
Platform slope facies	(.MARFCPL.)
Off-platform basin facies	(.MARFCPO.)
Uncharacterized facies	(.MARFCPU.)
Carbonate ramp	(.MARFCSR.)
Ramp peritidal facies	(.MARFCRP.)
Ramp subtidal facies	(.MARFCRS.)
Ramp buildup facies	(.MARFCRB.)
Organic buildup	(.MARFCRBO.)
Inorganic buildup	(.MARFCRBI.)
Uncharacterized ramp facies	(.MARFCRU.)
Uncharacterized carbonate facies	(.MARFCU.)
CONTINENTAL-SLOPE FACIES	(.MARFS.)
CONTINENTAL-RISE FACIES	(.MARFR.)
DELTA FACIES	(.MARFD.)
Foreset facies	(.MARFDF.)
Bottomset facies	(.MARFDB.)
Uncharacterized	(.MARFDU.)

Uncharacterized (.NMAU.)

NONMARINE (.NMA.)

NONMARINE GEOGRAPHIC SETTING (.NMAG.)

Coastal Plain	(.NMAGC.)
Alluvial plain	(.NMAGA.)
Mountain-margin	(.NMAGM.)
Intermontane	(.NMAGI.)
Glacial plain	(.NMAGG.)
Volcanogenic terrain	(.NMAGV.)
Setting uncharacterized	(.NMAGU.)

NONMARINE DEPOSITIONAL FACIES (.NMAF.)

ALLUVIAL FACIES	(.NMAFA.)
Alluvial-fan facies	(.NMAFAF.)
Alluvial-valley facies	(.NMAFAV.)
Alluvial-plain facies	(.NMAFAP.)
DELTAIC FACIES [2]	(.NMAFD.)
Delta-plain facies	(.NMAFDP.)
Upper delta-plain facies	(.NMAFDPU.)
Migratory-channel facies	(.NMAFDPUM.)
Lacustrine delta-fill facies	(.NMAFDPUML.)
Lower delta-plain facies	(.NMAFDPL.)
Bay-fill facies	(.NMAFDPLB.)
Abandoned distributary-fill facies	(.NMAFDPLA.)
Subaqueous delta-plain facies	(.NMAFDPS.)
Distributary-mouth-bar facies	(.NMAFDPSD.)
River-mouth tidal-ridge facies	(.NMAFDPSR.)
Subaqueous slump facies	(.NMAFDPSS.)
Pro-delta facies	(.NMAFDO.)
EOLIAN FACIES	(.NMAFE.)
Transverse-dune facies	(.NMAFET.)
Longitudinal-dune facies	(.NMAFEL.)
Uncharacterized facies	(.NMAFEU.)
GLACIAL FACIES	(.NMAFG.)
Alpine	(.NMAFGA.)
Continental	(.NMAFGC.)
HILLSLOPE FACIES	(.NMAFH.)
Low-angle slopes	(.NMAFHL.)
Moderate-angle slopes	(.NMAFHM.)
High-angle slopes	(.NMAFHH.)

[1] Modified from Wilson (1975)
[2] From Coleman and Prior (1982)

SEDIMENTARY ORIGIN (Continued)

MARINE (.MAR.)

Uncharacterized (.MARU.)

MARINE DEPOSITIONAL FACIES (CONTINUED) (.MARF.)

SHORE-ZONE FACIES[1]	(.MARFZ.)
Coastal type	(.MARFZT.)
Barrier-island coasts	(.MARFZTB.)
Open coasts	(.MARFZTO.)
Rocky-shore coasts	(.MARFZTR.)
Strandplain coasts	(.MARFZTS.)
Tidal-flat dominated coasts	(.MARFZTT.)
Coastal type unspecified	(.MARFZTU.)
Coastal facies	(.MARFZF.)
Bay facies	(.MARFZFY.)
Beach-zone facies	(.MARFZFB.)
Eolian-dune facies	(.MARFZFE.)
Estuarine facies	(.MARFZFS.)
Lagoon facies	(.MARFZFL.)
Salt-marsh facies	(.MARFZFM.)
Tidal-channel facies	(.MARFZFC.)
Tidal-delta facies	(.MARFZFD.)
Tidal-flat facies	(.MARFZFF.)
Washover-fan facies	(.MARFZFW.)
Coastal facies unspecified	(.MARFZFW.)
Shore zone unspecified	(.MARFZU.)
SUBMARINE-FAN FACIES	(.MARFF.)
Upper fan	(.MARFFP.)
fan valley	(.MARFFPV.)
overbank	(.MARFFPO.)
levee	(.MARFFPL.)
Mid fan	(.MARFFM.)
suprafan lobe	(.MARFFML.)
Lower fan	(.MARFFL.)
Fan facies unspecified	(.MARFFU.)
SUBTIDAL-SHELF FACIES[2]	(.MARFS.)
Compositional phase	(.MARFSC.)
Carbonate phase	(.MARFSCC.)
Silicilastic phase	(.MARFSCS.)
Mixed siliclastic & carbonate	(.MARFSCM.)
Uncharacterized	(.MARFSCU.)
Lithofacies	(.MARFSL.)
Sand facies	(.MARFSLS.)
Mud facies	(.MARFSLM.)
Transgressive-shelf systems (upward-fining succession)	(.MARFST.)
Transgressive tide-dominated shelf	(.MARFSTT.)
Transgressive storm-dominated shelf	(.MARFSTS.)
Prograding-shelf systems (upward-coarsening succession)	(.MARFSP.)
Prograding storm-dominated shelf	(.MARFSPS.)
Prograding mixed-energy shelf	(.MARFSPM.)
Shelf setting	(.MARFSS.)
Inner shelf	(.MARFSSI.)
Outer shelf	(.MARFSSO.)
MARINE FACIES UNCHARACTERIZED	(.MARFU.)

NONMARINE (.NMA.)

Uncharacterized (.NMAU.)

NONMARINE DEPOSITIONAL FACIES (CONTINUED) (.NMAF.)

LACUSTRINE FACIES	(.NMAFL.)
Setting	(.NMAFLS.)
Marginal lacustrine facies	(.NMAFLSM.)
Open lacustrine facies	(.NMAFLSO.)
Water chemistry	(.NMAFLC.)
Fresh water facies	(.NMAFLCF.)
Saline water facies	(.NMAFLCS.)
Lacustrine facies unspecified	(.NMAFLU.)
PLAYA FACIES	(.NMAFP.)
RIVERINE FACIES (fluvial)[3]	(.NMAFR.)
Gravel bed	(.NMAFRG.)
Gravel bed, braided	(.NMAFRGB.)
Gravel bed, braided, with sediment--gravity-flow deposits	(.NMAFRGBG.)
Gravel bed, braided, shallow	(.NMAFRGBS.)
Gravel bed, braided, deep	(.NMAFRGBD.)
Gravel bed, wandering	(.NMAFRGW.)
Meandering (high-sinuosity)	(.NMAFRM.)
Gravel bed, meandering	(.NMAFRMG.)
Gravel-sand bed, meandering	(.NMAFRMGS.)
Sandy, meandering	(.NMAFRMS.)
Sandy, meandering, ephemeral	(.NMAFRMSE.)
Fine-grained, meandering	(.NMAFRMF.)
Braided (low-sinuosity)	(.NMAFRB.)
Anastomosed	(.NMAFRBA.)
Braided, low-sinuosity, with alternate bars	(.NMAFRBB.)
Braided, sand-bed	(.NMAFRBS.)
Braided, sand-bed, shallow, perennial	(.NMAFRBSS.)
Braided, sand-bed, deep	(.NMAFRBSD.)
Braided, sand-bed, high-energy	(.NMAFRBSH.)
Braided, sand-bed, sheetflood, distal	(.NMAFRBSF.)
Sheetflood, sand-bed, ephemeral, flashy	(.NMAFRF.)
Fluvial, uncharacterized	(.NMAFRU.)
Eolian admixture	(.NMAFRE.)
Colluvial admixture	(.NMAFRC.)
SUBMARINE-FAN FACIES	(.NMAFS.)
Upper fan	(.NMAFSP.)
fan valley	(.NMAFSPV.)
overbank	(.NMAFSPO.)
levee	(.NMAFSPL.)
Mid fan	(.NMAFSM.)
suprafan lobe	(.NMAFSML.)
Lower fan	(.NMAFSL.)
Fan facies unspecified	(.NMAFSU.)
VOLCANIC FACIES	(.NMAFV.)
Near-source volcanic center	(.NMAFVN.)
Far-source fallout field	(.NMAFVF.)
NONMARINE FACIES UNCHARACTERIZED	(.NMAFU.)

[1] Modified from Galloway and Hobday (1983)
[2] From Galloway and Hobday (1983) after Brenner (1980)
[3] From Miall (1996)

SEDIMENTARY ORIGIN (Continued)

MARINE (.MAR.)

Unspecified (.MARU.)

DEPOSIT TYPE (.MARD.)

BASIN DEPOSITS	(.MARDB.)
Basin-floor deposit	(.MARDBF.)
Basin-slope deposit	(.MARDBS.)
Contourite deposit	(.MARDBC.)
Euxinic deposit	(.MARDBE.)
Oxygen-minimum-zone deposit	(.MARDBO.)
Unspecified deposit	(.MARDBU.)
BEACH-ZONE DEPOSITS[1]	(.MARDZ.)
Dune ridge	(.MARDZD.)
Backshore	(.MARDZB.)
Shoreface deposits	(.MARDZS.)
Upper shoreface	(.MARDZSU.)
beachface deposits	(.MARDZSUB.)
foreshore (swash zone)	(.MARDZSUF.)
surf zone	(.MARDZSUS.)
longitudinal bar	(.MARDZSUL.)
Lower shoreface (storm-wave surge zone)	(.MARDZSL.)
CARBONATE-SHELF DEPOSITS	(.MARDC.)
Peritidal deposits	(.MARDCP.)
Supratidal (sabkha) deposit	(.MARDCPS.)
Intertidal deposit	(.MARDCPI.)
Tidal-channel deposit	(.MARDCPC.)
Storm-surge deposit	(.MARDCPG.)
Unspecified peritidal deposit	(.MARDCPU.)
Shoal-water buildup deposit	(.MARDCB.)
Organic buildups	(.MARDCBO.)
bioherm deposit	(.MARDCBOB.)
reef deposit	(.MARDCBOR.)
skeletal sand deposit	(.MARDCBOS.)
Inorganic buildups	(.MARDCBI.)
Mud-shoal deposit	(.MARDCBIM.)
Oolitic-shoal deposit	(.MARDCBIO.)
Pelloidal-shoal deposit	(.MARDCBIP.)
Unspecified buildup deposit	(.MARDCBU.)
Unspecified carbonate shelf deposit	(.MARDCU.)
CONTINENTAL-SLOPE/RISE DEPOSITS	(.MARDL.)
Continental-apron deposit	(.MARDLA.)
Contourite deposit	(.MARDLC.)
Submarine landslide deposit	(.MARDLS.)
Submarine slump deposit	(.MARDLL.)
SEDIMENT-GRAVITY FLOW DEPOSITS	(.MARDG.)
Debris-flow deposit	(.MARDGD.)
Grain-flow deposit	(.MARDGG.)
Nepheloid-layer deposit	(.MARDGN.)
Olistolith deposit	(.MARDGO.)
Soft-sediment slump deposit	(.MARDGS.)
Submarine-slide deposit	(.MARDGL.)
Turbidity-current deposit	(.MARDGT.)
Unspecified sediment-gravity flow deposit	(.MARDGU.)

NONMARINE (.NMA.)

Unspecified (.NMAU.)

DEPOSIT TYPE (.NMAD.)

ALLUVIAL-FAN DEPOSITS	(.NMADF.)
Debris-flow dominant	(.NMADFD.)
Stream-flow dominant	(.NMADFS.)
Stream-flow & debris-flow subequal	(.NMADFQ.)
Fan-delta deposit	(.NMADFL.)
delta-front deposit	(.NMADFLF.)
delta-plain deposit	(.NM ADFLP.)
Eolian admixture	(.NMADFE.)
Colluvial admixture	(.NMADFC.)
ALLUVIAL-VALLEY DEPOSITS	(.NMADA.)
Low-sinuosity (braided)	(.NMADAL.)
High-sinuosity (meandering)	(.NMADAH.)
Eolian admixture	(.NMADAE.)
Colluvial admixture	(.NMADAC.)
DELTAIC DEPOSITS	(.NMADD.)
braided-channel deposits	(.NMADDB.)
crevasse-splay deposits	(.NMADDC.)
interdistributary bay deposits	(.NMADDI.)
levee deposits	(.NMADDL.)
marsh deposits	(.NMADDH.)
meandering-channel deposits	(.NMADDM.)
EOLIAN DEPOSITS	(.NMADE.)
Dune sand	(.NMADED.)
Sheet sand	(.NMADES.)
Unspecified	(.NMADEU.)
Admixture to another deposit	(.NMADEA.)
FLUVIAL DEPOSITS[2]	(.NMADR.)
Channel deposit	(.NMADRC.)
Gravel bars & bedforms	(.NMADRG.)
Sandy-bedform deposit	(.NMADRS.)
Downstream-accretion forms (longitudinal bars)	(.NMADRD.)
Lateral-accretion forms (transverse bars)	(.NMADRL.)
Scour hollow deposit	(.NMADRH.)
Sediment-gravity flow deposit	(.NMADRY.)
Laminated sand-sheet deposit	(.NMADRE.)
Overbank-fines deposit	(.NMADRO.)
Unspecified fluvial deposit	(.NMADRU.)
HILLSLOPE DEPOSITS	(.NMADL.)
Gravity-driven deposit	(.NMADLG.)
Gravity-flow deposits	(.NMADLGF.)
Rock-avalanche deposit	(.NMADLGFA.)
Gravity-slide deposits	(.NMADLGS.)
Slide-breccia deposit	(.NMADLSB.)
Talus-breccia deposit	(.NMADLT.)
Rock-fall deposit	(.NMADLR.)
Water-driven deposits	(.NMADLW.)
Colluvial deposit	(.NMADLWC.)
Slope-wash deposit	(.NMADLWW.)

[1] From McCubbin (1983)
[2] From Miall (1996)

SEDIMENTARY ORIGIN (Continued)

MARINE (.MAR.)

Unspecified (.MARU.)

DEPOSIT TYPE (Continued) (.MARD.)

SUBMARINE-FAN DEPOSITS [1]	(.MARDF.)
Depotype A	(.MARDFA.)
Depotype B	(.MARDFB.)
Depotype C	(.MARDFC.)
Depotype D	(.MARDFD.)
Depotype E	(.MARDFE.)
Depotype F	(.MARDFF.)
Depotype G	(.MARDFG.)
Unspecified	(.MARDFU.)
SUBTIDAL SHELF DEPOSITS [2]	(.MARDS.)
Sand-ribbon deposit	(.MARDSR.)
Sand-wave deposit	(.MARDSW.)
Shelf sand-ridge deposit	(.MARDSD.)
Shelf-storm deposit	(.MARDSS.)
Oxygen-minimum-zone deposit	(.MARDSX.)
Uncharacterized deposit	(.MARDSU.)
TIDAL-FLAT DEPOSITS	(.MARDT.)
Tidal-channel deposit	(.MARDTC.)
Tidal-flat deposit	(.MARDTF.)
Storm-surge deposit	(.MARDTS.)

NONMARINE (.NMA.)

Unspecified (.NMAU.)

DEPOSIT TYPE (Continued) (.NMAD.)

GLACIAL DEPOSITS	(.NMADG.)
Continental glacial deposit	(.NMADGC.)
Moraine deposit	(.NMADGCM.)
Outwash deposit	(.NMADGCO.)
Alpine glacial deposit	(.NMADGA.)
Moraine deposit	(.NMADGAM.)
Outwash deposit	(.NMADGAO.)
Diamictite deposit	(.NMADGD.)
Unspecified glacial deposit	(.NMADGU.)
LACUSTRINE DEPOSITS [3]	(.NMADL.)
lake floor	(.NMADLF.)
lake shore	(.NMADLS.)
lake bar	(.NMADLB.)
deltaic	(.NMADLD.)
interdeltaic	(.NMADLI.)
carbonate flat	(.NMADLC.)
mud flat	(.NMADLM.)
SEDIMENT-GRAVITY FLOW DEPOSITS	(.NMADY.)
Debris-flow deposit	(.NMADYD.)
Grain-flow deposit	(.NMADYG.)
Olistolith deposit	(.NMADYO.)
Soft-sediment slump deposit	(.NMADYS.)
Gravity-slide deposit	(.NMADYY.)
Turbidity-current deposit	(.NMADYT.)
Uncharacterized deposit	(.NMADYU.)
SUBMARINE-FAN DEPOSITS [1]	(.NMADF.)
Depotype A	(.NMADFA.)
Depotype B	(.NMADFB.)
Depotype C	(.NMADFC.)
Depotype D	(.NMADFD.)
Depotype E	(.NMADFE.)
Depotype F	(.NMADFF.)
Depotype G	(.NMADFG.)
Unspecified	(.NMADFU.)

TECTONIC AND STRUCTURAL SETTING (From Miall, 1984, 1996)

Basin, nonmarine, generic	(.BASN.)
Transform- and transcurrent-fault basins	(.BAST.)
Basin setting:	(.BASTS.)
Plate-boundary transform fault	(.BASTSP.)
Divergent-margin transform fault	(.BASTSD.)
Convergent-margin transform fault	(.BASTSC.)
Suture-zone transform fault	(.BASTSS.)
Basin type:	(.BASTT.)
Basins in braided-fault systems	(.BASTTB.)
Fault-termination basins	(.BASTTF.)
Pull-apart basins in en echelen fault systems	(.BASTTP.)
Transrotational basins	(.BASTTT.)
Divergent-margin basins	(.BASD.)
Rift basins	(.BASDR.)
Rifted-arch basins	(.BASDRA.)
Rim basins	(.BASDRR.)
Sag basins	(.BASDRS.)
Half-graben basins	(.BASDRH.)
Continental-margin basins	(.BASDC.)
Red Sea type	(.BASDCR.)
Atlantic type	(.BASDCA.)
Aulacogens (failed rifts)	(.BASDA.)
Convergent-margin basins	(.BASC.)
Trenches and subduction complexes	(.BASCT.)
Forearc basins	(.BASCF.)
Interarc and backarc basins	(.BASCI.)
Retroarc (foreland) basins	(.BASCR.)
Basins developed during continental collision and suturing	(.BASS.)
Peripheral setting	(.BASSP.)
Intrasuture embayment	(.BASSI.)
Hinterland foreland	(.BASSH.)
Oceanic islands, seamounts, and plateaus	(.BASO.)
Cratonic basins	(.BASK.)
Interior basins	(.BASI.)

Paleobathymetry (.PBY.)

Littoral	(.PBYL.)
Neritic	(.PBYN.)
Inner neritic	(.PBYNI.)
Outer neritic	(.PBYNO.)
Bathyal	(.PBYB.)
Upper bathyal	(.PBYBU.)
Middle bathyal	(.PBYBM.)
Lower bathyal	(.PBYBL.)
Abyssal	(.PBYA.)

[1] From Mutti and Ricci Lucci (1972)
[2] Modified from Galloway and Hobday (1983)
[3] From Fouch and Dean (1982)

IGNEOUS ROCKS (.IGN.)

PLUTONIC ROCKS (.IGNP.)

HYPABYSSAL ROCKS (.IGNH.)

VOLCANIC ROCKS (.IGNV.)

ROCK CLASSIFICATION

PLUTONIC, HYPABYSSAL, AND INTRUSIVE ROCKS, UNSPECIFIED

VOLCANIC

GENERIC FIELD TERMS

Plutonic rock, unspecified	(.IGNPU.)
Granitoid plutonic rock	(.IGNPG.)
Granitoid rock, heterogeneous	(.IGNPGH.)
Granitoid rock, quartz porphyry	(.IGNPGQ.)
Granitoid rock, unspecified	(.IGNPGU.)
Granitoid rock, variable	(.IGNPGV.)
Dioritic plutonic rock	(.IGNPR.)
Dioritic rock, heterogeneous	(.IGNPRH.)
Dioritic rock, variable	(.IGNPRV.)
Hypabyssal rock, unspecified	(.IGNHU.)
Granitoid hypabyssal rock	(.IGNHG.)
Granitoid rock, heterogeneous	(.IGNHGH.)
Granitoid rock, quartz porphyry	(.IGNHGQ.)
Granitoid rock, unspecified	(.IGNHGU.)
Granitoid rock, variable	(.IGNHGV.)
Dioritic hypabyssal rock	(.IGNHR.)
Dioritic rock, heterogeneous	(.IGNHRH.)
Dioritic rock, variable	(.IGNHRV.)

MODAL CLASSIFICATION

HYPABYSSAL ROCKS	(.IGNH.)
Felsic hypabyssal rocks [>20% qtz]	(.IGNHF.)
Intermediate hypabyssal rocks [5-20% qtz]	(.IGNHI.)
Mafic hypabyssal rocks [<5% qtz]	(.IGNHM.)
Ultramafic hypabyssal rocks	(.IGNHA.)
Feldspathoidal hypabyssal rocks	(.IGNHE.)
Specialized hypabyssal names	(.IGNHS.)
PLUTONIC ROCKS	(.IGNP.)
Felsic plutonic rocks [>20% qtz]	(.IGNPF.)
Intermediate plutonic rocks [5-20% qtz]	(.IGNPI.)
Mafic plutonic rocks [<5% qtz]	(.IGNPM.)
Ultramafic plutonic rocks	(.IGNPA.)
Feldspathoidal plutonic rocks	(.IGNPE.)
Specialized plutonic names	(.IGNPS.)
INTRUSIVE TYPE UNSPECIFIED	(.IGNI.)
Felsic intrusive rocks [>20% qtz]	(.IGNIF.)
Intermediate intrusive rocks [5-20% qtz]	(.IGNII.)
Mafic intrusive rocks [<5% qtz]	(.IGNIM.)
Ultramafic intrusive rocks	(.IGNIA.)
Feldspathoidal intrusive rocks	(.IGNIE.)
Specialized intrusive names	(.IGNIS.)

GENERIC FIELD TERMS

Volcanic rock, composition generalized	(.IGNVG.)
Generally andesitic	(.IGNVGA.)
Generally basaltic	(.IGNVGB.)
Generally basaltic, olivine-bearing	(.IGNVGBO.)
Generally basaltic andesite	(.IGNVGC.)
Generally rhyolitic	(.IGNVGR.)
Volcanic rock, quartz porphyry	(.IGNVQ.)
Volcanic rock, heterogeneous	(.IGNVH.)
Volcanic rock, unspecified	(.IGNVU.)
Volcanic rock, variable	(.IGNVV.)

MODAL CLASSIFICATION

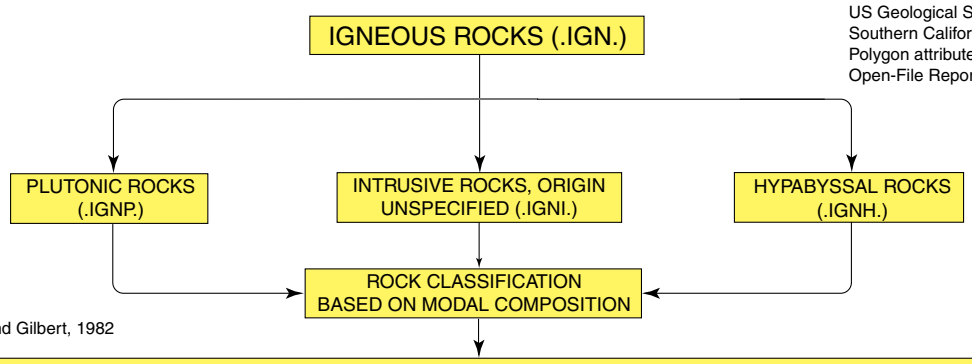
Felsic volcanic rocks [>20% qtz]	(.IGNVF.)
Intermediate volcanic rocks [5-20% qtz]	(.IGNVI.)
Mafic volcanic rocks [<5% qtz]	(.IGNVM.)
Feldspathoidal volcanic rocks	(.IGNVE.)
Specialized volcanic names	(.IGNVS.)

SILICA SATURATION (.IGNS.)

Oversaturated	(.IGNSO.)
Saturated	(.IGNSS.)
Saturated to undersaturated	(.IGNST.)
Undersaturated	(.IGNSU.)

ALUMINUM CONTENT (.IGNA.)

Peraluminous	(.IGNAP.)
Metaluminous	(.IGNAM.)
Subaluminous	(.IGNAS.)
Peralkaline	(.IGNAP.)



[1] Follows IUGS, 1973
[2] Follows Williams, Turner, and Gilbert, 1982

PLUTONIC ROCKS (.IGNP.)		HYPABYSSAL ROCKS (.IGNH.)		INTRUSIVE ROCKS, UNSPECIFIED (.IGNI.)	
Felsic plutonic rocks [>20% qtz][1]	(.IGNPF.)	Felsic hypabyssal rocks [>20% qtz][1]	(.IGNHF.)	Felsic intrusive rocks [>20% qtz][1]	(.IGNIF.)
Granodiorite	(.GDRP.)	Granodiorite	(.GDRH.)	Granodiorite	(.GDRI.)
Granitic rocks	(.GRN.)	Granitic rocks	(.GRN.)	Granitic rocks	(.GRN.)
Monzogranite	(.GRNMP.)	Monzogranite	(.GRNMH.)	Monzogranite	(.GRNMI.)
Syenogranite	(.GRNSP.)	Syenogranite	(.GRNSH.)	Syenogranite	(.GRNSI.)
Tonalite	(.TONP.)	Tonalite	(.TONH.)	Tonalite	(.TONI.)
Intermediate plutonic rocks [5-20% qtz][1]	(.IGNPI.)	Intermediate hypabyssal rocks [5-20% qtz][1]	(.IGNHI.)	Intermediate hypabyssal rocks [5-20% qtz][1]	(.IGNII.)
Dioritic rocks	(.DIO.)	Dioritic rocks	(.DIO.)	Dioritic rocks	(.DIO.)
Diorite, quartz	(.DIOQP.)	Diorite, quartz	(.DIOQH.)	Diorite, quartz	(.DIOQI.)
Monzonitic rocks	(.MZN.)	Monzonitic rocks	(.MZN.)	Monzonitic rocks	(.MZN.)
Monzonite, quartz	(.MZNMQP.)	Monzonite, quartz	(.MZNMQH.)	Monzonite, quartz	(.MZNMQI.)
Monzodiorite, quartz	(.MZNRQP.)	Monzodiorite, quartz	(.MZNRQH.)	Monzodiorite, quartz	(.MZNRQI.)
Syenite, quartz	(.SYNQP.)	Syenite, quartz	(.SYNQH.)	Syenite, quartz	(.SYNQI.)
Mafic plutonic rocks [<5% qtz][1]	(.IGNPM.)	Mafic hypabyssal rocks [<5% qtz][1]	(.IGNHM.)	Mafic hypabyssal rocks [<5% qtz][1]	(.IGNIM.)
Anorthosite	(.ANAP.)	Anorthosite	(.ANAH.)	Anorthosite	(.ANAI.)
Dioritic rocks	(.DIO.)	Dioritic rocks	(.DIO.)	Dioritic rocks	(.DIO.)
Diorite	(.DIORP.)	Diorite	(.DIORH.)	Diorite	(.DIORI.)
Monzonitic rocks	(.MZN.)	Monzonitic rocks	(.MZN.)	Monzonitic rocks	(.MZN.)
Monzonite	(.MZNMP.)	Monzonite	(.MZNMH.)	Monzonite	(.MZNMI.)
Monzodiorite	(.MZNRP.)	Monzodiorite	(.MZNRH.)	Monzodiorite	(.MZNRI.)
Gabbroic rocks	(.GAB.)	Gabbroic rocks	(.GAB.)	Gabbroic rocks	(.GAB.)
Gabbro	(.GABGP.)	Gabbro	(.GABGH.)	Gabbro	(.GABGI.)
Gabbro, quartz	(.GABQP.)	Gabbro, quartz	(.GABQH.)	Gabbro, quartz	(.GABQI.)
Syenite	(.SYNSP.)	Syenite	(.SYNSH.)	Syenite	(.SYNSI.)
Ultramafic plutonic rocks[1]	(.IGNPA.)	Ultramafic hypabyssal rocks[1]	(.IGNHA.)	Ultramafic intrusive rocks, unspecified[1]	(.IGNIA.)
Olivine+orthopyx+clinopyx	(.IGNPAO.)	Olivine+orthopyx+clinopyx	(.IGNHAO.)	Olivine+orthopyx+clinopyx	(.IGNIAO.)
Peridotites	(.PERO.)	Peridotites	(.PERO.)	Peridotites	(.PERO.)
dunite	(.PEROUP.)	dunite	(.PEROUH.)	dunite	(.PEROUI.)
harzburgite	(.PEROHP.)	harzburgite	(.PEROHH.)	harzburgite	(.PEROHI.)
lherzolite	(.PEROLP.)	lherzolite	(.PEROLH.)	lherzolite	(.PEROLI.)
wherlite	(.PEROWP.)	wherlite	(.PEROWH.)	wherlite	(.PEROWI.)
Pyroxenites	(.PYRO.)	Pyroxenites	(.PYRO.)	Pyroxenites	(.PYRO.)
websterite suite	(.PYROWP.)	websterite suite	(.PYROWH.)	websterite suite	(.PYROWI.)
websterite	(.PYROWWP.)	websterite	(.PYROWWH.)	websterite	(.PYROWWI.)
olivine websterite	(.PYROWOP.)	olivine websterite	(.PYROWOH.)	olivine websterite	(.PYROWOI.)
Hornblende-bearing association	(.IGNPAH.)	Hornblende-bearing association	(.IGNHAH.)	Hornblende-bearing association	(.IGNIAH.)
Peridotites	(.PERH.)	Peridotites	(.PERH.)	Peridotites	(.PERH.)
dunite	(.PERHUP.)	dunite	(.PERHUH.)	dunite	(.PERHUI.)
pyroxene-hornblende peridotite	(.PERHXHP.)	pyroxene-hornblende peridotite	(.PERHXHH.)	pyroxene-hornblende peridotite	(.PERHXHI.)
hornblende peridotite	(.PERHHP.)	hornblende peridotite	(.PERHHH.)	hornblende peridotite	(.PERHHI.)
Pyroxenites and hornblendites	(.PHB.)	Pyroxenites and hornblendites	(.PHB.)	Pyroxenites and hornblendites	(.PHB.)
Pyroxenites	(.PHBXP.)	Pyroxenites	(.PHBXH.)	Pyroxenites	(.PHBXI.)
pyroxenite	(.PHBXXP.)	pyroxenite	(.PHBXXH.)	pyroxenite	(.PHBXXI.)
hornblende pyroxenite	(.PHBXXHP.)	hornblende pyroxenite	(.PHBXXHH.)	hornblende pyroxenite	(.PHBXXHI.)
olivine pyroxenite	(.PHBXXOP.)	olivine pyroxenite	(.PHBXXOH.)	olivine pyroxenite	(.PHBXXOI.)
olivine-hornblende pyroxenite	(.PHBXXOHP.)	olivine-hornblende pyroxenite	(.PHBXXOHH.)	olivine-hornblende pyroxenite	(.PHBXXOHI.)
Hornblendites	(.PHBHP.)	Hornblendites	(.PHBHH.)	Hornblendites	(.PHBHI.)
hornblendite	(.PHBHHP.)	hornblendeite	(.PHBHHH.)	hornblendeite	(.PHBHHI.)
pyroxene hornblendeite	(.PHBHHXP.)	pyroxene hornblendeite	(.PHBHHXH.)	pyroxene hornblendeite	(.PHBHHXI.)
olivine hornblendeite	(.PHBHHOP.)	olivine hornblendeite	(.PHBHHOH.)	olivine hornblendeite	(.PHBHHOI.)
olivine-pyroxene hornblendeite	(.PHBHHOXP.)	olivine-pyroxene hornblendeite	(.PHBHHOXH.)	olivine-pyroxene hornblendeite	(.PHBHHOXI.)
Feldspathoidal plutonic rocks[2]	(.IGNPE.)	Feldspathoidal hypabyssal rocks[2]	(.IGNHE.)	Feldspathoidal intrusive rocks, unspecified[2]	(.IGNIE.)
Alkali feldspar dominant	(.IGNPEA.)	Alkali feldspar dominant	(.IGNHEA.)	Alkali feldspar dominant	(.IGNIEA.)
Shonkinite	(.AKFSP.)	Shonkinite	(.AKFSH.)	Shonkinite	(.AKFSI.)
Feldspathoidal syenites	(.AKFFP.)	Feldspathoidal syenites	(.AKFFH.)	Feldspathoidal syenites	(.AKFFI.)
Nepheline syenite	(.AKFFNP.)	Nepheline syenite	(.AKFFNH.)	Nepheline syenite	(.AKFFNI.)
Sodalite syenite	(.AKFFSP.)	Sodalite syenite	(.AKFFSH.)	Sodalite syenite	(.AKFFSI.)
Plagioclase feldspar dominant	(.IGNPEP.)	Plagioclase feldspar dominant	(.IGNHEP.)	Plagioclase feldspar dominant	(.IGNIEP.)
Feldspathoidal gabbros	(.PLFGP.)	Feldspathoidal gabbros	(.PLFGH.)	Feldspathoidal gabbros	(.PLFGI.)
Essexite	(.PLFGEP.)	Essexite	(.PLFGEH.)	Essexite	(.PLFGEI.)
Theralite	(.PLFGTP.)	Theralite	(.PLFGTH.)	Theralite	(.PLFGTI.)
Alkaline pyroxenite	(.PLFYP.)	Alkaline pyroxenite	(.PLFYH.)	Alkaline pyroxenite	(.PLFYI.)
Specialized plutonic rock names[2]	(.IGNPS.)	Specialized hypabyssal rock names[2]	(.IGNHS.)	Specialized rock names, unspecified[2]	(.IGNIS.)
Charnokite	(.IGNPSC.)	Charnokite	(.IGNHSC.)	Charnokite	(.IGNISC.)
Jotunite [pyroxene diorite/gabbro]	(.IGNPSJ.)	Jotunite [pyroxene diorite/gabbro]	(.IGNHSJ.)	Jotunite [pyroxene diorite/gabbro]	(.IGNISJ.)
Lamprophyres	(.IGNPSL.)	Lamprophyres	(.IGNHSL.)	Lamprophyres	(.IGNISL.)
Mangerite [pyroxene monzonite]	(.IGNPSM.)	Mangerite [pyroxene monzonite]	(.IGNHSM.)	Mangerite [pyroxene monzonite]	(.IGNISM.)
Norite	(.IGNPSN.)	Norite	(.IGNHSN.)	Norite	(.IGNISN.)
Trondhjemite	(.IGNPST.)	Trondhjemite	(.IGNHST.)	Trondhjemite	(.IGNIST.)

IGNEOUS ROCK (.IGN.)

↓

VOLCANIC ROCK (.IGNV.)

↓

MODAL ROCK CLASSIFICATION

↓

Felsic volcanic rocks [>20% qtz][1]	(.IGNVF.)
Rhyolite	(.IGNVFR.)
Dacite	(.IGNVFD.)
Intermediate volcanic rocks [5-20% qtz][1]	(.IGNVI.)
Andesite	(.IGNVIA.)
Latite	(.IGNVIL.)
Trachyte	(.IGNVIT.)
Mafic volcanic rocks [<5% qtz][1]	(.IGNVM.)
Basalt family	(.IGNVMB.)
Basalt, tholeiitic	(.IGNVMBT.)
Basalt, tholeiitic, olivine-bearing	(.IGNVMBTO.)
Basalt, alkali olivine	(.IGNVMBA.)
Hawaiite	(.IGNVBMAH.)
Mugerite	(.IGNVBMAM.)
Basalt, picritic	(.IGNVMBP.)
Basalt, generic	(.IGNVMBG.)
Basalt, generic, olivine-bearing	(.IGNVMBGO.)
Diabase	(.IGNVMD.)
Feldspathoidal volcanic rocks (0% qtz)[1]	(.IGNVE.)
Alkali feldspar dominant feldspar	(.IGNVEA.)
Phonolite	(.IGNVEAP.)
Plagioclase feldspar dominant spar	(.IGNVEP.)
Trachyandesite	(.IGNVEPA.)
Trachybasalt	(.IGNVEPB.)
Tephrite	(.IGNVEPT.)
Leucitites	(.IGNVEPL.)
Limburgite	(.IGNVEPG.)
Nephelinite	(.IGNVEPN.)
Basinite	(.IGNVEPB.)
Specialized volcanic rock names[1]	(.IGNVS.)

[1] Follows Williams, Turner, and Gilbert, 1982

IGNEOUS-ROCK ATTRIBUTES AND PHYSICAL PROPERTIES

OUTCROP GEOMORPHOLOGY (.OGM.)

Blocky	(.OGMB.)	Regolith developed on outcrop	(.OGMH.)
Cliff forming	(.OGMC.)	Recessive	(.OGMR.)
Fissil	(.OGMF.)	Rounded	(.OGMD.)
Interbedded ledgeforming & slopeforming	(.OGMI.)	Slope forming	(.OGMS.)
Ledgeforming	(.OGML.)	Weathered slightly	(.OGMWSL.)
Massive, blocky	(.OGMMB.)	Weathered substantially	(.OGMWSU.)
Massive, rounded	(.OGMMR.)	Weathered strongly	(.OGMWST.)

COLOR INDEX

Average color index	(.CIN[nn].)
{nn = % dark minerals[2 numbers] ie, (.CIN07) for CI = 7}	
Color index variable	(.CINV.)

IGNEOUS CONTACT ATTRIBUTES (.CATI.)

Igneous-contact character	(.CATIC.)
Contact sharp	(.CATICS.)
Contact gradational	(.CATICG.)
Contact diffuse	(.CATICD.)
Contact lit-par-lit	(.CATICL.)
Contact chilled	(.CATICC.)
Igneous-contact geometry	(.CATIG.)
Contact dip	(.CATIGD.)
Contact dip variable	(.CATIGDV.)
Contacts dip vertically	(.CATIGDT.)
Contacts dip horizontally	(.CATIGDH.)
Contacts dip inward toward body	(.CATIGDI.)
steeply	(.CATIGDIS.)
moderately	(.CATIGDIM.)
shallowly	(.CATIGDIW.)
variably	(.CATIGDIV.)
Contacts dip outward away from body	(.CATIGDO.)
steeply	(.CATIGDOS.)
moderately	(.CATIGDOM.)
shallowly	(.CATIGDOW.)
variably	(.CATIGDOV.)
Contact dip reverses inward-outward	(.CATIGDR.)
Contact dip unspecified	(.CATIGDU.)
Contact concordance	(.CATIGK.)
Contact concordant	(.CATIGKC.)
Contact discordant	(.CATIGKD.)
Contacts parallel-sided	(.CATIGKP.)
parallel-sided, planar	(.CATIGKPP.)
parallel-sided, uneven	(.CATIGKPU.)
Contacts nonparallel-sided	(.CATIGKN.)
nonparallel-sided, planar	(.CATIGKNP.)
nonparallel-sided, uneven	(.CATIGKNU.)
Contacts lensoidal	(.CATIGKL.)
Contacts irregular	(.CATIGKI.)

STRUCTURES AND FABRICS RESULTING FROM IGNEOUS EMPLACEMENT (.STRI.)

Fabric, massive	(.STRIFM.)
Fabric, massive to foliated	(.STRIFMF.)
Fabric, massive to foliated slightly	(.STRIFMFS.)
Fabric, foliated	(.STRIFF.)
slightly	(.STRIFFS.)
slightly to moderately	(.STRIFFSM.)
moderately	(.STRIFFM.)
moderately to well	(.STRIFFMW.)
well	(.STRIFFW.)
Fabric, heterogeneous	(.STRIFE.)
Fabric, homogeneous	(.STRIFO.)
Flow banding	(.STRIB.)
Inclusion-rich	(.STRII.)
local	(.STRIIL.)
widespread	(.STRIIW.)
Intermingled igneous rock and country rock	(.STRIR.)
Layering	(.STRIY.)
cumulate	(.STRIYC.)
gneissose compositional	(.STRIYG.)
migmatitic, magmatic	(.STRIYM.)
Lineated	(.STRIL.)
slightly	(.STRILS.)
moderately	(.STRILM.)
well	(.STRILW.)
Schlieren	(.STRIS.)
Variable	(.STRIV.)

UNMAPPED ROCKS INCLUDED IN POLYGON (.UMR.)

Older included rocks	(.UMRO.)
Country rock	(.UMROC.)
Igneous rock	(.UMROCI.)
Granitic rock	(.UMROCIG.)
Lowe pluton	(.UMROCIGL.)
monzogranite	(.UMROCIGM.)
granodiorite	(.UMROCIGG.)
Dioritic rock	(.UMROCID.)
Metamorphic	(.UMROCM.)
Metasedimentary	(.UMROCMS.)
marble	(.UMROCMSM.)
metaquartzite	(.UMROCMSQ.)
schist	(.UMROCMSS.)
Metaigneous	(.UMROCMI.)
amphibolite	(.UMROCMIA.)
metavolcanic	(.UMROCMIV.)
greenstone	(.UMROCMIVG.)
Strain-dominated rock	(.UMROCD.)
cataclastic rock	(.UMROCDC.)
mylonitic rock	(.UMROCDM.)
sheared rock	(.UMROCDS.)
Earlier phase of intrusive sequence	(.UMROI.)
Coeval included rocks	(.UMRC.)
Igneous rock	(.UMRCI.)
Dikes	(.UMRCIY.)
Aplite dikes	(.UMRCIYA.)
Basalt dikes	(.UMRCIYB.)
Dioritic dikes	(.UMRCIYD.)
Leucogranitic dikes	(.UMRCIYL.)
Mafic dikes	(.UMRCIYM.)
Dioritic rock	(.UMRCID.)
Granitic rock	(.UMRCIG.)
Lowe igneous pluton	(.UMRCIGL.)
monzogranite	(.UMRCIGM.)
granodiorite	(.UMRCIGG.)
Sedimentary rock	(.UMRCS.)
Strain-dominated rock	(.UMRCD.)
cataclastic rock	(.UMRCDC.)
mylonitic rock	(.UMRCDM.)
sheared rock	(.UMRCDS.)
Younger included rocks	(.UMRY.)
Igneous rock	(.UMRYI.)
Dikes	(.UMRYIY.)
Aplite dikes	(.UMRYIYA.)
Basalt dikes	(.UMRYIYB.)
Dioritic dikes	(.UMRYIYD.)
Leucogranitic dikes	(.UMRYIYL.)
Mafic dikes	(.UMRYIYM.)
Dioritic rock	(.UMRYID.)
Granitic rock	(.UMRYIG.)
Lowe igneous pluton	(.UMRYIGL.)
monzogranite	(.UMRYIGM.)
granodiorite	(.UMRYIGG.)
Sedimentary rock	(.UMRYS.)
Strain-dominated rock	(.UMRYD.)
cataclastic rock	(.UMRYDC.)
mylonitic rock	(.UMRYDM.)
sheared rock	(.UMRYDS.)

XENOLITHS and INCLUSIONS (.XEN.)

Cognate zenoliths (inclusions)	(.XENC.)
mafic	(.XENCM.)
biotitic inclusions	(.XENCMB.)
amphibolitic inclusions	(.XENCMA.)
hornblendic inclusions	(.XENCMH.)
olivine	(.XENCO.)
eclogitic	(.XENCE.)
granitic	(.XENCG.)
ultramafic	(.XENCA.)
Accidental xenoliths	(.XENA.)
local country rock	(.XENAL.)
granitic	(.XENALG.)
mafic	(.XENALM.)
biotitic xenoliths	(.XENALMB.)
amphibolitic xenoliths	(.XENALMA.)
hornblenditic xenoliths	(.XENALMH.)
uncharacterized local rock	(.XENALU.)
Unspecified xenolith or inclusion	(.XENU.)
Xenolith shape	(.XENS.)
flattened	(.XENSF.)
oblate	(.XENSO.)
nodular	(.XENSN.)
spheroidal	(.XENSS.)

IGNEOUS-ROCK ATTRIBUTES AND PHYSICAL PROPERTIES

IGNEOUS GRAIN TEXTURE (.TEXI.)

Amygdaloidal	(.TEXIA.)	Pilotaxitic	(.TEXIX.)
Equigranular	(.TEXIE.)	Poikilitic	(.TEXIK.)
Grain overgrowths	(.TEXIW.)	Porphyritic	(.TEXIP.)
Granitic	(.TEXIG.)	locally	(.TEXIPL.)
Graphic	(.TEXIR.)	uniformly	(.TEXIPU.)
Holocrystalline	(.TEXIH.)	Protoclastic	(.TEXIF.)
Hyalocrystalline	(.TEXIQ.)	Ophitic	(.TEXIO.)
Inequigranular	(.TEXIN.)	Seriate	(.TEXIS.)
Intergranular	(.TEXII.)	Scoriaceous	(.TEXIJ.)
Intersertal	(.TEXIT.)	Subophitic	(.TEXIB.)
Megacrystic	(.TEXIC.)	Vesicular	(.TEXIU.)
Myrmekitic	(.TEXIM.)	Vitrophyric	(.TEXIY.)
Pegmatitic	(.TEXIZ.)	Variable	(.TEXIV.)

IGNEOUS GRAIN SHAPE (.GSHI.)

Groundmass	(.GSHIG.)	Phenocrysts	(.GSHIP.)
Euhedral	(.GSHIGU.)	Euhedral	(.GSHIPU.)
Subhedral	(.GSHIGS.)	Subhedral	(.GSHIPS.)
Anhedral	(.GSHIGA.)	Anhedral	(.GSHIPA.)
Embayed margins	(.GSHIGY.)	Equant	(.GSHIPE.)
Equant	(.GSHIGE.)	Prismatic	(.GSHIPP.)
Prismatic	(.GSHIGP.)	Tabular	(.GSHIPT.)
Tabular	(.GSHIGT.)	Variable	(.GSHIPV.)
Variable	(.GSHIGV.)	Diffuse	(.GSHIPF.)

IGNEOUS GRAIN SIZE (.GSZI.)

Groundmass (.GSZIG.)			Phenocrysts (.GSZIP.)		
Aphanitic		(.GSZIGA.)	Fine	(1mm to <2mm)	(.GSZIPF.)
Aphanitic to fine		(.GSZIGAF.)	Fine to medium	(1mm to <3cm)	(.GSZIPFM.)
Fine	(< 1.0mm)	(.GSZIGF.)	Fine to coarse	(1mm to <6cm)	(.GSZIPFC.)
Fine to Medium		(.GSZIGFM.)	Medium	(5mm to <3cm)	(.GSZIPM.)
Fine to coarse		(.GSZIGFC .)	Medium to coarse	(5mm to <6cm)	(.GSZIPMC.)
Medium	(1mm to 5mm)	(.GSZIGM.)	Medium to v coarse	(5mm to >6cm)	(.GSZIPMV.)
Medium to coarse		(.GSZIGMC.)	Coarse	(3cm to <6cm)	(.GSZIPC.)
Coarse	(5mm to 3cm)	(.GSZIGC.)	Coarse to v coarse	(3cm to >6cm)	(.GSZIPCV.)
Coarse to very coarse		(.GSZIGCV.)	Very coarse	(>6cm)	(.GSZIPV.)
Very coarse	(>3cm)	(.GSZIGV.)	Variable		(.GSZIPX.)
Giant	(>10cm)	(.GSZIGG.)			
Bimodal		(.GSZIGB.)			
Trimodal		(.GSZIGT.)			
Variable		(.GSZIGX.)			

Characterizing minerals (.MCH.)

Biotite	(.MCHB.)
Biotite-hornblende	(.MCHBH.)
Biotite-muscovite	(.MCHBM.)
Garnet	(.MCHG.)
Hornblende	(.MCHH.)
Hornblende-biotite	(.MCHHB.)
Hornblende-pyroxene	(.MCHHP.)
Muscovite	(.MCHM.)
Muscovite-biotite	(.MCHMB.)
Muscovite-garnet	(.MCHMG.)
Pyroxene	(.MCHX.)
clinopyroxene	(.MCHXC.)
orthopyroxene	(.MCHXO.)
Pyroxene-hornblende	(.MCHPH.)

Accessory minerals (.MAC.)

Allanite	(.MACA.)
Apatite	(.MACP.)
Clinozoisite	(.MACC.)
Epidote	(.MACE.)
Fluorite	(.MACF.)
Monazite	(.MACM.)
Opaque minerals	(.MACO.)
Ilmenite	(.MACOI.)
Magnetite	(.MACOG.)
Rutile	(.MACR.)
Sphene	(.MACS.)
Tourmaline	(.MACT.)
Zircon	(.MACZ.)
Exotic minerals	(.MACX.)

Trace minerals (.MTR.)

Allanite	(.MTRA.)
Apatite	(MTRP.)
Biotite	(MTRB.)
Clinozoisite	(.MTRC.)
Epidote	(.MTRE.)
Fluorite	(.MTRF.)
Garnet	(.MTRG.)
Hornblende	(MTRH.)
Monazite	(.MTRM.)
Muscovite	(.MTRV.)
Opaque minerals	(.MTRO.)
Ilmenite	(.MTROI.)
Magnetite	(.MTROG.)
Potassium feldspar	(.MTRK.)
Pyroxene	(.MTRX.)
Clinopyroxene	(.MTRXC.)
Orthopyroxene	(.MTRXO.)
Rutile	(.MTRR.)
Sphene	(.MTRS.)
Tourmaline	(.MTRT.)
Zircon	(.MTRZ.)

Phenocryst minerals (.PHM.)

Amphibole	(.PHMA.)
Augite	(.PHMG.)
Biotite	(.PHMB.)
Hornblende	(.PHMH.)
Muscovite	(.PHMM.)
Olivine	(.PHMO.)
Plagioclase	(.PHMP.)
Potassium feldspar	(.PHMK.)
Pyroxene	(.PHMY.)
Clinopyroxene	(.PHMYC.)
Orthopyroxene	(.PHMYO.)
Quartz	(.PHMQ.)
Quartz, beta habit	(.PHMQB.)
Rimmed phenos	(.PHMR.)
K-spar rims	(.PHMRK.)
Plagioclase rims	(.PHMRP.)
Reaction rims	(.PHMRR.)
Zoned phenos	(.PHMZ.)

ISOTOPIC AGE (.ISO.)

Isotopic age is emplacement age	(.ISOE.)	U-Pb other	(.ISOUPO.)	K-Ar is 40-39	(.ISOKFT.)
Isotopic age not emplacement age	(.ISON.)	Rb-Sr is isochron age	(.ISORSI.)	K-Ar Biotite	(.ISOKAB.)
Interpretation of isotopic age uncertain	(.ISOIU.)	Rb-Sr is not isochron age	(.ISORSN.)	K-Ar Muscovite	(.ISOKAM.)
Age from inside map area	(.ISOAI.)	Rb-Sr K-spar	(.ISORSK.)	K-Ar Hornblende	(.ISOKAH.)
Age from outside map area	(.ISOAO.)	Rb-Sr Plagioclase	(.ISORSP.)	K-Ar Sanidine	(.ISOKAS.)
Age determined by other workers	(.ISOW.)	Rb-Sr Biotite	(.ISORSB.)	K-Ar K-spar	(.ISOKAK.)
U-Pb is isochron age	(.ISOUPI.)	Rb-Sr Muscovite	(.ISORSM.)	K-Ar Glauconite	(.ISOKAG.)
U-Pb is not isochron age	(.ISOUPN.)	Rb-Sr Glauconite	(.ISORSG.)	K-Ar Whole rock	(.ISOKAW.)
U-Pb zircon	(.ISOUPZ.)	Rb-Sr Whole rock	(.ISORSW.)	Fission-track	(.ISOF.)
U-Pb sphene	(.ISOUPS.)	K-Ar is conventional	(.ISOKAC.)	Tephrochronology	(.ISOT.)
U-Pb monazite	(.ISOUPM.)	K-Ar is conventional	(.ISOKAC.)		
		K-Ar is incremental	(.ISOKAI.)		

IGNEOUS ORIGIN (.IGNO.)

IGNEOUS ORIGIN, BODY TYPE (.IGNOB.)

INTRUSIVE EMPLACEMENT STYLE	
Plutonic	(.IGNOBP.)
Diatreme	(.IGNOBPT.)
Dike	(.IGNOBPK.)
aplite	(.IGNOBPKA.)
diabase	(.IGNOBPKE.)
felsic	(.IGNOBPKF.)
lamprophyre	(.IGNOBPKL.)
mafic	(.IGNOBPKM.)
pegmatite	(.IGNOBPKP.)
quartz	(.IGNOBPKQ.)
Laccolith	(.IGNOBPL.)
Sill	(.IGNOBPS.)
Stock	(.IGNOBPO.)
Pluton	(.IGNOBPP.)
Pipe	(.IGNOBPI.)
Unspecified	(.IGNOBPU.)
Hypabyssal	(.IGNOBH.)
Diatreme	(.IGNOBHT.)
Dike	(.IGNOBHK.)
aplite	(.IGNOBHKA.)
diabase	(.IGNOBHKE.)
felsic	(.IGNOBHKF.)
lamprophyre	(.IGNOBHKL.)
mafic	(.IGNOBHKM.)
pegmatite	(.IGNOBHKP.)
quartz	(.IGNOBHKQ.)
Laccolith	(.IGNOBHL.)
Sill	(.IGNOBHS.)
Stock	(.IGNOBHO.)
Pluton	(.IGNOBHP.)
Pipe	(.IGNOBHI.)
Unspecified	(.IGNOBHU.)
Volcanic feeder	(.IGNOBF.)
Diatreme	(.IGNOBFT.)
Dike	(.IGNOBFK.)
basalt	(.IGNOBFKB.)
diabase	(.IGNOBFKE.)
felsic	(.IGNOBFKF.)
lamprophyre	(.IGNOBFKL.)
mafic	(.IGNOBFKM.)
pegmatite	(.IGNOBFKP.)
quartz	(.IGNOBFKQ.)
unspecified	(.IGNOBFKYU.)
Laccolith	(.IGNOBFKL.)
Sill	(.IGNOBFS.)
Stock	(.IGNOBFO.)
Unspecified	(.IGNOBFU.)
Body shape	(.IGNOBS.)
arcuate	(.IGNOBSA.)
circular	(.IGNOBSC.)
irregular	(.IGNOBSI.)
ovoid	(.IGNOBSO.)
ring dike complex	(.IGNOBSR.)
sheet	(.IGNOBSS.)
EXTRUSIVE EMPLACEMENT STYLE	
Domes	(.IGNOBEM.)
Domes and flows	(.IGNOBEMF.)
Flows	(.IGNOBEF.)
Flows & sedimentary rocks	(.IGNOBEFS.)
Flows & flow breccia	(.IGNOBEFB.)
Flow breccia	(.IGNOBEB.)
Plugs	(.IGNOBEP.)
Unspecified	(.IGNOBEU.)
PYROCLASTIC EMPLACEMENT STYLE	
Cinder cone	(.IGNOBYC.)
Tuff	(.IGNOBYT.)
Ash-flow Tuff	(.IGNOBYTL.)
Air-fall Tuff	(.IGNOBYTA.)
Not-reworked	(.IGNOBYTAN.)
Reworked	(.IGNOBYTAR.)
Bentonite	(.IGNOBYTAB.)
Surge deposit	(.IGNOBYS.)
Lahar deposit	(.IGNOBYL.)
Agglomerate	(.IGNOBYA.)
Unspecified	(.IGNOBYU.)

IGNEOUS ORIGIN, EMPLACEMENT STYLE (.IGNOE.)

INTRUSIVE	(.IGNOEI.)
Forceful	(.IGNOEIF.)
Passive	(.IGNOEIP.)
Magmatic stoping	(.IGNOEIS.)
Intrusive Association	(.IGNOEIA.)
Part of batholith	(.IGNOEIAB.)
Intrusive series	(.IGNOEIABS.)
Igneous complex	(.IGNOEIABC.)
Isolated intrusion	(.IGNOEIAI.)
EXTRUSIVE	(.IGNOEE.)
Extrusive association	(.IGNOEEA.)
Regional volcanogenic complex	(.IGNOEEAR.)
Flood basalt complex	(.IGNOEEARF.)
Volcano complex	(.IGNOEEARV.)
Isolated extrusive event	(.IGNOEEAI.)
PYROCLASTIC	(.IGNOEP.)

IGNEOUS ORIGIN, TECTONIC ENVIRONMENT (.IGNOT.)

Backarc	(.IGNOTB.)
Continental plateau	(.IGNOTP.)
Continental margin	(.IGNOTC.)
Convergent margin	(.IGNOTCC.)
Forearc	(.IGNOTCCF.)
Orogenic belt	(.IGNOTCCO.)
Volcanic arc	(.IGNOTCCV.)
Divergent margin	(.IGNOTCD.)
Failed rift	(.IGNOTCDF.)
Rift valley	(.IGNOTCDR.)
Extensional basin	(.IGNOTE.)
Hot spot	(.IGNOTH.)
Intracontinental orogenic belt	(.IGNOTI.)
Oceanic	(.IGNOTO.)
Island arc	(.IGNOTOI.)
Mid ocean ridge	(.IGNOTOR.)
Oceanic islands	(.IGNOTOO.)

IGNEOUS ORIGIN, CRUSTAL DEPTH (.IGNOD.)

Depth based on geobarometry	(.IGNODG.)
upper crust	(.IGNODGU.)
middle crust	(.IGNODGM.)
lower crust	(.IGNODGL.)
Depth based on field relations	(.IGNODF.)
upper crust	(.IGNODFU.)
middle crust	(.IGNODFM.)
lower crust	(.IGNODFL.)

IGNEOUS ORIGIN, PROVINCIAL AFFINITY (.IGNOP.)

Chocolate Mts affinity	(.IGNOPC.)
Mojave Desert affinity	(.IGNOPM.)
San Bernardino Mts type	(.IGNOPMB.)
Little San Bernardino Mts type	(.IGNOPML.)
Peninsular Ranges affinity	(.IGNOPP.)
San Jacinto Mts type	(.IGNOPPJ.)
Santa Rosa Mts type	(.IGNOPPR.)
San Gabriel Mts affinity	(.IGNOPG.)

IGNEOUS ORIGIN (.IGNO.)

IGNEOUS ORIGIN, STRAIN DEVELOPMENT (.IGNOS.)	
DEFORMATION, SYNPLUTONIC	(.IGNOSDS.)
Rock deformed during plutonic emplacement	(.IGNOSDSP.)
Rock deformed during hypabyssal emplacement	(.IGNOSDSY.)
Rock deformed under brittle conditions	(.IGNOSDSB.)
Rock deformed under brittle-ductile conditions	(.IGNOSDSX.)
Rock deformed under ductile conditions	(.IGNOSDSD.)
Rock deformed under low-strain conditions	(.IGNOSDSL.)
Rock deformed under high-strain conditions	(.IGNOSDSH.)
Rock deformed within contractional strain field	(.IGNOSDSC.)
Rock deformed within extensional strain field	(.IGNOSDSX.)
Rock deformed within transtensional strain field	(.IGNOSDST.)
Rock deformed within shear zone	(.IGNOSDSZ.)
Rock deformed within fault zone	(.IGNOSDSF.)
rock deformed within normal-slip fault zone	(.IGNOSDSFN.)
rock deformed within strike-slip fault zone	(.IGNOSDSFS.)
rock deformed within thrust-slip fault zone	(.IGNOSDSFT.)
deformed above thrust fault	(.IGNOSDSFTA.)
deformed beneath thrust fault	(.IGNOSDSFTB.)
INTRUSION, SYNTECTONIC	(.IGNOSIS.)
Rock intruded under low-strain conditions	(.IGNOSISL.)
Rock intruded under high-strain conditions	(.IGNOSISH.)
Rock intruded under brittle conditions	(.IGNOSISB.)
Rock intruded under brittle-ductile conditions	(.IGNOSISX.)
Rock intruded under ductile conditions	(.IGNOSISD.)
RECRYSTALLIZATION, SYNPLUTONIC	(.IGNOSRS.)
Rock recrystallized under plutonic conditions	(.IGNOSRSP.)
Rock recrystallized under hypabyssal conditions	(.IGNOSRSH.)

DEFORMED PLUTONIC AND HYPABYSSAL ROCKS

[1] Follows IUGS, 1973
[2] Follows Williams, Turner, and Gilbert, 1982

GENERIC FIELD TERMS

Plutonic rock, unspecified	(.IGNPUD.)	Hypabyssal rock, unspecified	(.IGNHUD.)
Granitoid plutonic rock	(.IGNPGD.)	Granitoid hypabyssal rock	(.IGNHGD.)
Granitoid rock, heterogeneous	(.IGNPGHD.)	Granitoid rock, heterogeneous	(.IGNHGHD.)
Granitoid rock, quartz porphyry	(.IGNPGQD.)	Granitoid rock, quartz porphyry	(.IGNHGQD.)
Granitoid rock, unspecified	(.IGNPGUD.)	Granitoid rock, unspecified	(.IGNHGUD.)
Granitoid rock, variable	(.IGNPGVD.)	Granitoid rock, variable	(.IGNHGVD.)
Dioritic plutonic rock	(.IGNPRD.)	Dioritic hypabyssal rock	(.IGNHRD.)
Dioritic rock, heterogeneous	(.IGNPRHD.)	Dioritic rock, heterogeneous	(.IGNHRHD.)
Dioritic rock, variable	(.IGNPRVD.)	Dioritic rock, variable	(.IGNHRVD.)

PLUTONIC ROCK (.IGNPD.)

Felsic plutonic rocks [>20% qtz] [1]	(.IGNPFD.)
Granodiorite	(.GDRPD.)
Granitic rocks	(.GRND.)
Monzogranite	(.GRNMPD.)
Syenogranite	(.GRNSPD.)
Tonalite	(.TONPD.)
Intermediate plutonic rocks [5-20% qtz] [1]	(.IGNPID.)
Dioritic rocks	(.DIOD.)
Diorite, quartz	(.DIOQPD.)
Monzonitic rocks	(.MZND.)
Monzonite, quartz	(.MZNMQPD.)
Monzodiorite, quartz	(.MZNRQPD.)
Syenite, quartz	(.SYNQPD.)
Mafic plutonic rocks [<5% qtz] [1]	(.IGNPMD.)
Anorthosite	(.ANAPD.)
Dioritic rocks	(.DIOD.)
Diorite	(.DIORPD.)
Monzonitic rocks	(.MZND.)
Monzonite	(.MZNMPD.)
Monzodiorite	(.MZNRPD.)
Gabbroic rocks	(.GABD.)
Gabbro	(.GABGPD.)
Gabbro, quartz	(.GABQPD.)
Syenite	(.SYNSPD.)
Ultramafic plutonic rocks [1]	(.IGNPAD.)
Olivine+orthopyx+clinopyx	(.IGNPAOD.)
Peridotites	(.PEROD.)
dunite	(.PEROUPD.)
harzburgite	(.PEROHPD)
lherzolite	(.PEROLPD.)
wherlite	(.PEROWPD.)
Pyroxenites	(.PYROD.)
websterite suite	(.PYROWPD.)
websterite	(.PYROWWPD.)
olivine websterite	(.PYROWOPD.)
Hornblende-bearing association	(.IGNPAHD.)
Peridotites	(.PERHD.)
dunite	(.PERHUPD.)
pyroxene-hornblende peridotite	(.PERHXHPD.)
hornblende peridotite	(.PERHHPD.)
Pyroxenites and hornblendites	(.PHBD.)
Pyroxenites	(.PHBXPD.)
pyroxenite	(.PHBXXPD.)
hornblende pyroxenite	(.PHBXXHPD.)
olivine pyroxenite	(.PHBXXOPD.)
olivine-hornblende pyroxenite	(.PHBXXOHPD.)
Hornblendites	(.PHBHPD.)
hornblendite	(.PHBHHPD.)
pyroxene hornblendeite	(.PHBHHXPD.)
olivine hornblendeite	(.PHBHHOPD.)
olivine-pyroxene hornblendeite	(.PHBHHOXPD.)
Feldspathoidal plutonic rocks [2]	(.IGNPED.)
Alkali feldspar dominant	(.IGNPEAD.)
Shonkinite	(.AKFSPD.)
Feldspathoidal syenites	(.AKFFPD.)
Nepheline syenite	(.AKFFNPD.)
Sodalite syenite	(.AKFFSPD.)
Plagioclase feldspar dominant	(.IGNPEPD.)
Feldspathoidal gabbros	(.PLFGPD.)
Essexite	(.PLFGEPD.)
Theralite	(.PLFGTPD.)
Alkaline pyroxenite	(.PLFYPD.)
Specialized plutonic rock names [2]	(.IGNPSD.)
Charnokite	(.IGNPSCD.)
Jotunite [pyroxene diorite/gabbro]	(.IGNPSJD.)
Lamprophyres	(.IGNPSLD.)
Mangerite [pyroxene monzonite]	(.IGNPSMD.)
Norite	(.IGNPSND.)
Trondhjemite	(.IGNPSTD).

HYPABYSSAL ROCKS (.IGNHD.)

Felsic hypabyssal rocks [>20% qtz] [1]	(.IGNHFD.)
Granodiorite	(.GDRHD.)
Granitic rocks	(.GRND.)
Monzogranite	(.GRNMHD.)
Syenogranite	(.GRNSHD.)
Tonalite	(.TONHD.)
Intermediate hypabyssal rocks [5-20% qtz] [1]	(.IGNHID.)
Dioritic rocks	(.DIOD.)
Diorite, quartz	(.DIOQHD.)
Monzonitic rocks	(.MZND.)
Monzonite, quartz	(.MZNMQHD.)
Monzodiorite, quartz	(.MZNRQHD.)
Syenite, quartz	(.SYNQHD.)
Mafic hypabyssal rocks [<5% qtz] [1]	(.IGNHMD.)
Anorthosite	(.ANAHD.)
Dioritic rocks	(.DIOD.)
Diorite	(.DIORHD.)
Monzonitic rocks	(.MZND.)
Monzonite	(.MZNMHD.)
Monzodiorite	(.MZNRHD.)
Gabbroic rocks	(.GABD.)
Gabbro	(.GABGHD.)
Gabbro, quartz	(.GABQHD.)
Syenite	(.SYNSHD.)
Ultramafic hypabyssal rocks [1]	(.IGNHAD.)
Olivine+orthopyx+clinopyx	(.IGNHAOD.)
Peridotites	(.PEROD.)
dunite	(.PEROUHD.)
harzburgite	(.PEROHHD.)
lherzolite	(.PEROLHD.)
wherlite	(.PEROWHD.)
Pyroxenites	(.PYROD.)
websterite suite	(.PYROWHD.)
websterite	(.PYROWWHD.)
olivine websterite	(.PYROWOHD.)
Hornblende-bearing association	(.IGNHAHD.)
Peridotites	(.PERHD.)
dunite	(.PERHUHD.)
pyroxene-hornblende peridotite	(.PERHXHHD.)
hornblende peridotite	(.PERHHHD.)
Pyroxenites and hornblendites	(.PHBD.)
Pyroxenites	(.PHBXHD.)
pyroxenite	(.PHBXXHD.)
hornblende pyroxenite	(.PHBXXHHD.)
olivine pyroxenite	(.PHBXXOHD.)
olivine-hornblende pyroxenite	(.PHBXXOHHD.)
Hornblendites	(.PHBHHD.)
hornblendeite	(.PHBHHHD.)
pyroxene hornblendeite	(.PHBHHXHD.)
olivine hornblendeite	(.PHBHHOHD.)
olivine-pyroxene hornblendeite	(.PHBHHOXHD.)
Feldspathoidal hypabyssal rocks [2]	(.IGNHED.)
Alkali feldspar dominant	(.IGNHEAD.)
Shonkinite	(.AKFSHD.)
Feldspathoidal syenites	(.AKFFHD.)
Nepheline syenite	(.AKFFNHD.)
Sodalite syenite	(.AKFFSHD.)
Plagioclase feldspar dominant	(.IGNHEPD.)
Feldspathoidal gabbros	(.PLFGHD.)
Essexite	(.PLFGEHD.)
Theralite	(.PLFGTHD.)
Alkaline pyroxenite	(.PLFYHD.)
Specialized hypabyssal rock names [2]	(.IGNHSD.)
Charnokite	(.IGNHSCD.)
Jotunite [pyroxene diorite/gabbro]	(.IGNHSJD.)
Lamprophyres	(.IGNHSLD.)
Mangerite [pyroxene monzonite]	(.IGNHSMD.)
Norite	(.IGNHSND.)
Trondhjemite	(.IGNHSTD.)

ATTRIBUTES OF STRAINED IGNEOUS ROCKS

OUTCROP GEOMORPHOLOGY (.OGM.)

Blocky	(.OGMB.)	Recessive	(.OGMR.)
Cliff forming	(.OGMC.)	Regolith on outcrops	(.OGMH.)
Fissil	(.OGMF.)	Rounded	(.OGMD.)
Interbedded ledgeforming & slopeforming	(.OGMI.)	Slope forming	(.OGMS.)
Ledgeforming	(.OGML.)	Weathered slightly	(.OGMWSL.)
Massive, blocky	(.OGMMB.)	Weathered substantially	(.OGMWSU.)
Massive, rounded	(.OGMMR.)	Weathered strongly	(.OGMWST.)

COLOR INDEX

Average color index	(.CIN[nn].)
{nn = % dark minerals[2 numbers] ie, (.CIN07) for CI = 7}	
Color index variable	(.CINV.)

RELICT STRUCTURES AND FABRICS FORMED DURING ORIGINAL IGNEOUS EMPLACEMENT

Fabric, massive	(.STRIFMD.)	moderately to well	(.STRIFFMWD.)	Intermingled igneous rock and country rock	(.STRIRD.)	Lineated	(.STRILD.)
Fabric, massive to foliated	(.STRIFMFD.)	well	(.STRIFFWD.)	Layering	(.STRIY.)	slightly	(.STRILSD.)
Fabric, massive to foliated slightly	(.STRIFMFSD.)	Fabric, heterogeneous	(.STRIFED.)	cumulate	(.STRIYCD.)	moderately	(.STRILMD.)
Fabric, foliated	(.STRIFF.D)	Fabric, homogeneous	(.STRIFOD.)	gneissose compositional	(.STRIYGD.)	well	(.STRILW.)
slightly	(.STRIFFSD.)	Flow banding	(.STRIBD.)	migmatitic, magmatic	(.STRIYMD.)	Schlieren	(.STRISDD.)
slightly to moderately	(.STRIFFSMD.)	Inclusion-rich	(.STRIID.)			Variable	(.STRIVD.)
moderately	(.STRIFFMD.)	local	(.STRIILD.)				
		widespread	(.STRIIWD.)				

PENETRATIVE STRUCTURAL ELEMENTS CREATED DURING DEFORMATION

Boudinage	(.STRDPB.)	Foliation, penetrative	(.STRDPO.)	Microtectonite features	(.STRDPT.)
Cataclasis	(.STRDPC.)	Weak	(.STRDPOW.)	Foliation fish	(.STRDPTF.)
intergranular	(.STRDPCI.)	Weak to moderate	(.STRDPOWM.)	Mica fish	(.STRDPTM.)
seams	(.STRDPCS.)	Moderate	(.STRDPOM.)	Pressure shadows	(.STRDPTP.)
local	(.STRDPCSL.)	Moderate to strong	(.STRDPOMS.)	S-C fabrics	(.STRDPTS.)
pervasive	(.STRDPCSP.)	Strong	(.STRDPOS.)	Winged porphyroclasts	(.STRDPTW.)
Cleavage, slaty	(.STRDPKS.)	cataclastic	(.STRDPOC.)	Milled grains	(.STRDPX.)
Fabric	(.STRDPF.)	gneissose	(.STRDPOG.)	Mylonitic seams	(.STRDPM.)
brittle	(.STRDPFB.)	mylonitic	(.STRDPOM.)	Pseudotachylite seams	(.STRDPU.)
brittle-ductile	(.STRDPFBD.)	Grain flattening	(.STRDPGF.)	Recrystallized	(.STRDR.)
ductile	(.STRDPFD.)	Grain lenticulation	(.STRDPGL.)	slightly	(.STRDRS.)
laminated	(.STRDPFL.)	Grain-size reduction, brittle	(.STRDPGRB.)	moderately	(.STRDRM.)
porphyroclastic	(.STRDPFP.)	Grain-size reduction, ductile	(.STRDPGRD.)	well	(.STRDRW.)
porphyroclastic, locally	(.STRDPFPL.)	Layering, mineral segregation	(.STRDPY.)	S-C structures	(.STRDPSC.)
		Lineation	(.STRDPL.)	Shear planes, local	(.STRDPSPL.)

XENOLITHS and INCLUSIONS

Cognate xenoliths (inclusions)	(.XENCD.)
mafic	(.XENCMD.)
biotitic inclusions	(.XENCMBD.)
amphibolitic inclusions	(.XENCMAD.)
hornblendic inclusions	(.XENCMHD.)
olivine	(.XENCOD.)
eclogitic	(.XENCED.)
granitic	(.XENCGD.)
ultramafic	(.XENCAD.)
Accidental xenoliths	(.XENAD.)
local country rock	(.XENALD.)
granitic	(.XENALGD.)
mafic	(.XENALMD.)
biotitic xenoliths	(.XENALMBD.)
amphibolitic xenoliths	(.XENALMAD.)
hornblendic xenoliths	(.XENALMHD.)
uncharacterized local rock	(.XENALUD.)
Unspecified xenolith or inclusion	(.XENUD.)
Xenolith or inclusion shape	
flattened	(.XENSFD.)
oblate	(.XENSOD.)
nodular	(.XENSND.)
spheroidal	(.XENSSD.)

RELICT GRAIN TEXTURE

Amygdaloidal	(.TEXIAD.)
Equigranular	(.TEXIED.)
Granitic	(.TEXIGD.)
Graphic	(.TEXIRD.)
Holocrystalline	(.TEXIHD.)
Inequigranular	(.TEXIND.)
Intergranular	(.TEXIID.)
Intersertal	(.TEXITD.)
Megacrystic	(.TEXICD.)
Myrmekitic	(.TEXIMD.)
Pegmatitic	(.TEXIZD.)
Pilotaxitic	(.TEXIXD.)
Poikilitic	(.TEXIKD.)
Porphyritic	(.TEXIPD.)
locally	(.TEXIPLD.)
uniformly	(.TEXIPUD.)
Ophitic	(.TEXIOD.)
Seriate	(.TEXISD.)
Subophitic	(.TEXIBD.)
Vitrophyric	(.TEXIYD.)
Variable	(.TEXIVD.)

HIGH-STRAIN IGNEOUS GRAIN SIZE

Groundmass		Porphyroclasts	
Aphanitic	(.GSZIGAD.)	Fine (1mm to <2mm)	(.GSZIPFD.)
Aphanitic to fine	(.GSZIGAFD.)	Fine to medium (1mm to <3cm)	(.GSZIPFMD.)
Fine (< 1.0mm)	(.GSZIGFD.)	Fine to coarse (1mm to <6cm)	(.GSZIPFCD.)
Fine to Medium	(.GSZIGFMD.)	Medium (5mm to <3cm)	(.GSZIPMD.)
Fine to coarse	(.GSZIGFCD.)	Medium to coarse (5mm to <6cm)	(.GSZIPMCD.)
Medium (1mm to 5mm)	(.GSZIGMD.)	Medium to v coarse (5mm to >6cm)	(.GSZIPMVD.)
Medium to coarse	(.GSZIGMCD.)	Coarse (3cm to <6cm)	(.GSZIPCD.)
Coarse (5mm to 3cm)	(.GSZIGCD.)	Coarse to v coarse (3cm to >6cm)	(.GSZIPCVD.)
Coarse to very coarse	(.GSZIGCVD.)	Very coarse (>6cm)	(.GSZIPVD.)
Very coarse (>3cm)	(.GSZIGVD.)	Variable	(.GSZIPXD.)
Giant (>10cm)	(.GSZIGGD.)		
Bimodal	(.GSZIGBD.)		
Trimodal	(.GSZIGTD.)		
Variable	(.GSZIGXD.)		

PORPHYROCLAST MINERALS

Amphibole	(.PHMAD.)
Augite	(.PHMGD.)
Biotite	(.PHMBD.)
Hornblende	(.PHMHD.)
Muscovite	(.PHMMD.)
Olivine	(.PHMOD.)
Plagioclase	(.PHMPD.)
Potassium feldspar	(.PHMKD.)
Pyroxene	(.PHMYD.)
Clinopyroxene	(.PHMYCD.)
Orthopyroxene	(.PHMYOD.)
Quartz	(.PHMQD .)
Quartz, beta habit	(.PHMQBD.)
Rimmed phenos	(.PHMRD.)
K-spar rims	(.PHMRKD.)
Plagioclase rims	(.PHMRPD.)
Reaction rims	(.PHMRRD.)
Zoned phenos	(.PHMZD.)

ACCESSORY MINERALS

Allanite	(.MACAD.)
Apatite	(.MACPD.)
Clinozoisite	(.MACCD.)
Epidote	(.MACED.)
Fluorite	(.MACFD.)
Monazite	(.MACMD.)
Opaque minerals	(.MACOD.)
Ilmenite	(.MACOID.)
Magnetite	(.MACOMD.)
Rutile	(.MACRD.)
Sphene	(.MACSD.)
Tourmaline	(.MACTD.)
Zircon	(.MACZD.)

CHARACTERIZING MINERALS

Biotite	(.MCHBD.)
Biotite-hornblende	(.MCHBHD.)
Biotite-muscovite	(.MCHBMD.)
Garnet	(.MCHGD.)
Hornblende	(.MCHHD.)
Hornblende-biotite	(.MCHHBD.)
Hornblende-pyroxene	(.MCHHPD.)
Muscovite	(.MCHMD.)
Muscovite-biotite	(.MCHMBD.)
Muscovite-garnet	(.MCHMGD.)
Pyroxene	(.MCHXD.)
clinopyroxene	(.MCHXCD.)
orthopyroxene	(.MCHXOD.)
Pyroxene-hornblende	(.MCHPHD.)

HIGH-STRAIN GRAIN SHAPE

Groundmass	(.GSHIGD.)
Euhedral	(.GSHIGUD.)
Subhedral	(.GSHIGSD.)
Anhedral	(.GSHIGAD.)
Equant	(.GSHIGED.)
Prismatic	(.GSHIGPD.)
Tabular	(.GSHIGTD.)
Variable	(.GSHIGVD.)
Porphyroclasts	(.GSHIPD.)
Euhedral	(.GSHIPUD.)
Subhedral	(.GSHIPSD.)
Anhedral	(.GSHIPAD.)
Equant	(.GSHIPED.)
Prismatic	(.GSHIPPD.)
Tabular	(.GSHIPTD.)
Variable	(.GSHIPVD.)
Diffuse	(.GSHIPFD.)

STRAIN-DOMINATED IGNEOUS ROCKS: IGNEOUS & DEFORMATIONAL HISTORY

IGNEOUS HISTORY, EMPLACEMENT STYLE

INTRUSIVE	(.IGNOEID.)
Forceful	(.IGNOEIFD.)
Passive	(.IGNOEIPD.)
Magmatic stoping	(.IGNOEISD.)
Intrusive Association	(.IGNOEIAD.)
Part of batholith	(.IGNOEIABD.)
Intrusive series	(.IGNOEIABSD.)
Igneous complex	(.IGNOEIABCD.)
Isolated intrusion	(.IGNOEIAID.)
EXTRUSIVE	(.IGNOEED.)
Extrusive association	(.IGNOEEAD.)
Regional volcanogenic complex	(.IGNOEEARD.)
Flood basalt complex	(.IGNOEEARFD.)
Volcano complex	(.IGNOEEARVD.)
Isolated extrusive event	(.IGNOEEAID.)
PYROCLASTIC	(.IGNOEPD.)

IGNEOUS ORIGIN, BODY TYPE

INTRUSIVE EMPLACEMENT STYLE	
Plutonic	(.IGNOBP.)
Diatreme	(.IGNOBPTD.)
Dike	(.IGNOBPKD.)
aplite	(.IGNOBPKAD.)
diabase	(.IGNOBPKED.)
felsic	(.IGNOBPKFD.)
lamprophyre	(.IGNOBPKLD.)
mafic	(.IGNOBPKMD.)
pegmatite	(.IGNOBPKPD.)
quartz	(.IGNOBPKQD.)
Laccolith	(.IGNOBPLD.)
Sill	(.IGNOBPSD.)
Stock	(.IGNOBPOD.)
Pluton	(.IGNOBPPD.)
Pipe	(.IGNOBPID.)
Unspecified	(.IGNOBPUD.)
Hypabyssal	(.IGNOBHD.)
Diatreme	(.IGNOBHTD.)
Dike	(.IGNOBHKD.)
aplite	(.IGNOBHKAD.)
diabase	(.IGNOBHKED.)
felsic	(.IGNOBHKFD.)
lamprophyre	(.IGNOBHKLD.)
mafic	(.IGNOBHKMD.)
pegmatite	(.IGNOBHKPD.)
quartz	(.IGNOBHKQD.)
Laccolith	(.IGNOBHLD.)
Sill	(.IGNOBHSD.)
Stock	(.IGNOBHOD.)
Pluton	(.IGNOBHPD.)
Pipe	(.IGNOBHID.)
Unspecified	(.IGNOBHUD.)
Volcanic feeder	(.IGNOBFD.)
Diatreme	(.IGNOBFTD.)
Dike	(.IGNOBFKD.)
basalt	(.IGNOBFKBD.)
diabase	(.IGNOBFKED.)
felsic	(.IGNOBFKFD.)
lamprophyre	(.IGNOBFKLD.)
mafic	(.IGNOBFKMD.)
pegmatite	(.IGNOBFKPD.)
quartz	(.IGNOBFKQD.)
unspecified	(.IGNOBFKYUD.)
Laccolith	(.IGNOBFKLD.)
Sill	(.IGNOBFSD.)
Stock	(.IGNOBFOD.)
Unspecified	(.IGNOBFUD.)
Body shape	(.IGNOBSD.)
arcuate	(.IGNOBSAD.)
circular	(.IGNOBSCD.)
irregular	(.IGNOBSID.)
ovoid	(.IGNOBSOD.)
ring-dike complex	(.IGNOBSRD.)
sheet	(.IGNOBSSD.)
EXTRUSIVE EMPLACEMENT STYLE	
Domes	(.IGNOBEMD.)
Domes and flows	(.IGNOBEMFD.)
Flows	(.IGNOBEFD.)
Flows & sedimentary rocks	(.IGNOBEFSD.)
Flows & flow breccia	(.IGNOBEFBD.)
Flow breccia	(.IGNOBEBD.)
Plugs	(.IGNOBEPD.)
Unspecified	(.IGNOBEUD.)
PYROCLASTIC EMPLACEMENT STYLE	
Cinder cone	(.IGNOBYCD.)
Tuff	(.IGNOBYTD.)
Ash-flow Tuff	(.IGNOBYTLD.)
Air-fall Tuff	(.IGNOBYTAD.)
Not-reworked	(.IGNOBYTAND.)
Reworked	(.IGNOBYTARD.)
Bentonite	(.IGNOBYTABD.)
Surge deposit	(.IGNOBYSD.)
Lahar deposit	(.IGNOBYLD.)
Agglomerate	(.IGNOBYAD.)
Unspecified	(.IGNOBYUD.)

UNMAPPED ROCKS INCLUDED IN POLYGON (.UMR.)

Older included rocks	(.UMRO.)
Country rock	(.UMROC.)
Igneous rock	(.UMROCI.)
Granitic rock	(.UMROCIG.)
Lowe pluton	(.UMROCIGL.)
monzogranite	(.UMROCIGM.)
granodiorite	(.UMROCIGG.)
Dioritic rock	(.UMROCID.)
Metamorphic	(.UMROCM.)
Metasedimentary	(.UMROCMS.)
marble	(.UMROCMSM.)
metaquartzite	(.UMROCMSQ.)
schist	(.UMROCMSS.)
Metaigneous	(.UMROCMI.)
amphibolite	(.UMROCMIA.)
metavolcanic	(.UMROCMIV.)
greenstone	(.UMROCMIVG.)
Strain-dominated rock	(.UMROCD.)
cataclastic rock	(.UMROCDC.)
mylonitic rock	(.UMROCDM.)
sheared rock	(.UMROCDS.)
Earlier phase of intrusive sequence	(.UMROI.)
Coeval included rocks	(.UMRC.)
Igneous rock	(.UMRCI.)
Dikes	(.UMRCIY.)
Aplite dikes	(.UMRCIYA.)
Basalt dikes	(.UMRCIYB.)
Dioritic dikes	(.UMRCIYD.)
Leucogranitic dikes	(.UMRCIYL.)
Mafic dikes	(.UMRCIYM.)
Dioritic rock	(.UMRCID.)
Granitic rock	(.UMRCIG.)
Lowe igneous pluton	(.UMRCIGL.)
monzogranite	(.UMRCIGM.)
granodiorite	(.UMRCIGG.)
Sedimentary rock	(.UMRCS.)
Strain-dominated rock	(.UMRCD.)
cataclastic rock	(.UMRCDC.)
mylonitic rock	(.UMRCDM.)
sheared rock	(.UMRCDS.)
Younger included rocks	(.UMRY.)
Igneous rock	(.UMRYI.)
Dikes	(.UMRYIY.)
Aplite dikes	(.UMRYIYA.)
Basalt dikes	(.UMRYIYB.)
Dioritic dikes	(.UMRYIYD.)
Leucogranitic dikes	(.UMRYIYL.)
Mafic dikes	(.UMRYIYM.)
Dioritic rock	(.UMRYID.)
Granitic rock	(.UMRYIG.)
Lowe igneous pluton	(.UMRYIGL.)
monzogranite	(.UMRYIGM.)
granodiorite	(.UMRYIGG.)
Sedimentary rock	(.UMRYS.)
Strain-dominated rock	(.UMRYD.)
cataclastic rock	(.UMRYDC.)
mylonitic rock	(.UMRYDM.)
sheared rock	(.UMRYDS.)

STRAIN-DOMINATED IGNEOUS ROCKS: IGNEOUS & DEFORMATIONAL HISTORY

IGNEOUS ORIGIN, CRUSTAL DEPTH (.IGNOD.)

Depth based on field relations	(.IGNODF.)
upper crust	(.IGNODFU.)
middle crust	(.IGNODFM.)
lower crust	(.IGNODFL.)
Depth based on geobarometry	(.IGNODG.)
upper crust	(.IGNODGU.)
middle crust	(.IGNODGM.)
lower crust	(.IGNODGL.)

IGNEOUS ORIGIN, PROVINCIAL AFFINITY (.IGNOP.)

Chocolate Mts affinity	(.IGNOPC.)
Mojave Desert affinity	(.IGNOPM.)
San Bernardino Mts type	(.IGNOPMB.)
Little San Bernardino Mts type	(.IGNOPML.)
Peninsular Ranges affinity	(.IGNOPP.)
San Jacinto Mts type	(.IGNOPPJ.)
Santa Rosa Mts type	(.IGNOPPR.)
San Gabriel Mts affinity	(.IGNOPG.)

ISOTOPIC AGE (.ISO.)

Isotopic age is emplacement age	(.ISOE.)	U-Pb other	(.ISOUPO.)	K-Ar is 40-39	(.ISOKFT.)
Isotopic age not emplacement age	(.ISON.)	Rb-Sr is isochron age	(.ISORSI.)	K-Ar Biotite	(.ISOKAB.)
Interpretation of isotopic age uncertain	(.ISOIU.)	Rb-Sr is not isochron age	(.ISORSN.)	K-Ar Muscovite	(.ISOKAM.)
Age from inside map area	(.ISOAI)	Rb-Sr K-spar	(.ISORSK.)	K-Ar Hornblende	(.ISOKAH.)
Age from outside map area	(.ISOAO)	Rb-Sr Plagioclase	(.ISORSP.)	K-Ar Sanidine	(.ISOKAS.)
U-Pb is isochron age	(.ISOUPI.)	Rb-Sr Biotite	(.ISORSB.)	K-Ar K-spar	(.ISOKAK.)
U-Pb is not isochron age	(.ISOUPN.)	Rb-Sr Muscovite	(.ISORSM.)	K-Ar Glauconite	(.ISOKAG.)
U-Pb zircon	(.ISOUPZ.)	Rb-Sr Glauconite	(.ISORSG.)	K-Ar Whole rock	(.ISOKAW.)
U-Pb sphene	(.ISOUPS.)	Rb-Sr Whole rock	(.ISORSW.)	Fission track	(.ISOF.)
U-Pb monazite	(.ISOUPM.)	K-Ar is conventional	(.ISOKAC.)	Fission track=emplacement age	(.ISOFE.)
		K-Ar is incremental	(.ISOKAI.)	Fission track=uplift age	(.ISOFU.)

METAMORPHIC ROCKS (.MET.)

CLASSIFICATION

METAMORPHIC ROCK, METASOMATIC (.METM.)

Calcsilicate rock	(.METMC.)
Gneiss	(.METMG.)
Schist	(.METMS.)
Garnet schist	(.METMSG.)
Muscovite schist	(.METMSM.)
Tourmaline schist	(.METMST.)
Skarn (tactite)	(.METMK.)
Talc	(.METMT.)

METAMORPHIC ROCK, GENERIC (.METG.)

Calcsilicate rock	(.METGC.)
Gneiss	(.METGG.)
Gneiss, augen	(.METGGA.)
Gneiss, banded	(.METGGD.)
Gneiss, biotitic	(.METGGB.)
Gneiss, granitic	(METGGG.)
Gneiss, laminated	(.METGGL.)
Gneiss, layered	(.METGGY.)
Gneiss, quartzitic	(.METGGQ.)
Gneiss, quartzo-feldspathic	(.METGGQF.)
Hornfels	(.METGH.)
Phyllite	(.METGP.)
Phyllonite	(.METGY.)
Schist	(.METGS.)
Schist, spotted	(.METGSP.)

METAIGNEOUS ROCK (.METI.)

Amphibolite	(.METIA.)
Gneiss	(.METIG.)
Gneiss, augen	(.METIGA.)
Gneiss, banded	(.METIGB.)
Gneiss, laminated	(.METIGL.)
Gneiss, layered	(.METIGY.)
Gneiss, orthogneiss	(.METIGO.)
Granitic rock, gneissic	(.METIRG.)
Greenstone	(.METIE.)
Hornfels	(.METIH.)
Metaplutonic	(.METIP.)
Metagranite	(.METIPG.)
Metavolcanic	(.METIV.)
Metabasalt	(.METIVB.)
Metatuff	(.METIVT.)
Serpentinite	(.METISP.)

For metaigneous rocks that have recognizable primary igneous features, use code from appropriate igneous code tree.

METASEDIMENTARY ROCK (.METS.)

Argillite	(.METSA.)
Calcsilicate	(.METSI.)
Gneiss	(.METSG.)
Gneiss, banded	(.METSGD.)
Gneiss, biotitic	(.METSGB.)
Gneiss, paragneiss	(.METSGP.)
Gneiss, quartzitic	(.METSGQ.)
Hornfels	(.METSF.)
Metacarbonate rocks	(.METSC.)
Marble, all kinds	(.METSCM.)
Marble, calcareous	(.METSCMC.)
Marble, limestone	(.METSCMCL.)
Marble, limestone, dolomitic	(.METSCMCLD.)
Marble, limestone, heterogeneous	(.METSCMCLH.)
Marble, dolomitic	(.METSCMD.)
Marble, dolostone	(.METSCMDD.)
Marble, dolostone, calcareous	(.METSCMDC .)
Marble, dolostone, heterogeneous	(.METSCMDH.)
Marble, mixed limestone & dolostone	(.METSCMXL.)
Marble, mixed dolostone & limestone	(.METSCMXD.)
Marble, impure carbonate	(.METSCMI.)
Marble, argillaceous carbonate	(.METSCMIA.)
Marble, argillaceous limestone	(.METSCMIAL.)
Marble, argillaceous dolomite	(.METSCMIAD.)
Marble, silty carbonate	(.METSCMIL.)
Marble, silty limestone	(.METSCMILL.)
Marble, silty dolostone	(.METSCMILD.)
Marble, sandy carbonate	(.METSCMIS.)
Marble, sandy limestone	(.METSCMISL.)
Marble, sandy dolostone	(.METSCMISD.)
Marble, conglomeratic carbonate	(.METSCMIC.)
Marble, conglomeratic limestone	(.METSCMICL.)
Marble, conglomeratic dolostone	(.METSCMICD.)
Marble, cherty carbonate	(.METSCMIH.)
Marble, cherty limestone	(.METSCMIHL.)
Marble, cherty dolostone	(.METSCMIHD.)
Marble, pure &impure carbonate mixed	(.METSCMIX.)
Marble, pure dominant over impure	(.METSCMIXP.)
Marble, impure dominant over pure	(.METSCMIXI.)
Marble and non-carbonate rocks, mixed	(.METSCMB.)
Marble & interbedded chert	(.METSCMBH.)
Marble & intermingled intrusive rock	(.METSCMBI.)
Marble & interbedded siliclastic rock	(.METSCMBS.)
Marble & interbedded volcanic rock	(.METSCMBV.)
Marble & interbedded volcaniclastic rx	(.METSCMBK.)
Marble, uncharacterized	(.METSCMU.)
Metachert	(.METSH.)
Metaconglomerate	(.METSC.)
Metagraywacke	(.METSW.)
Metamudstone	(.METSM.)
Metaquartzite	(.METSQ.)
Metasandstone	(.METSD.)
Metasiltstone	(.METSL.)
Phyllite	(.METSY.)
Schist	(.METSS.)
Schist, biotite	(.METSSB.)
Schist, muscovite	(.METSSM.)
Schist, quartzose	(.METSSQ.)
Schist, quartzofeld	(.METSSF.)
Schist, spotted	(.METSSS.)
Slate	(.METSE.)

For metasedimentary rocks that have recognizable primary sedimentary features, use code from appropriate sedimentary code tree.

STRAIN-DOMINATED METAMORPHIC ROCK (.METD.)

Cataclasite	(.METDC.)
Gneiss	(.METDG.)
Gneiss, cataclastic	(.METDGC.)
Gneiss, mylonitic	(.METDGM.)
Phyllonite	(.METDP.)
Mylonite	(.METDM.)

POLYMETAMORPHIC (.METP.)

Amphibolite	(.METPA.)
Calcsilicate	(.METPI.)
Cataclasite	(.METPCA.)
Gneiss	(.METPG.)
Gneiss, augen	(.METPGA.)
Gneiss, banded	(.METPGD.)
Gneiss, ortho	(.METPGO.)
Gneiss, para	(.METPGP.)
Hornfels	(.METPH.)
Marble	(.METPM.)
Metaquartzite	(.METPQ.)
Mylonite	(.METPY.)
Phyllite	(.METPP.)
Phyllonite	(.METPPH.)
Schist	(.METPS.)
Serpentinite	(.METPT.)
Slate	(.METPL.)

METAMORPHIC ROCKS (.MET.)

LITHOLOGIC AND PETROGRAPHIC ATTRIBUTES

OUTCROP GEOMORPHOLOGY (.OGM.)

Blocky	(.OGMB.)
Cliff forming	(.OGMC.)
Fissil	(.OGMF.)
Interbedded ledge forming & recessive	(.OGMI.)
Ledge forming	(.OGML.)
Massive, blocky	(.OGMMB.)
Massive, rounded	(.OGMMR.)
Recessive	(.OGMR.)
Rounded	(.OGMD.)
Slope forming	(.OGMS.)
Weathered slightly	(.OGMWSL.)
Weathered substantially	(.OGMWSU)
Weathered strongly	(.OGMWST.)

STRUCTURE AND FABRIC (.STRM.)

Boudinage	(.STRMB.)	Foliation, schistose	(.STRMOS.)	Recrystallization	(.STRMR.)
Cataclasis, intergranular	(.STRMCI.)	Grain flattening	(.STRMGF.)	slight	(.STRMRS.)
Fabric, blastoporphyritic	(.STRMFT.)	Grain lenticulation	(.STRMGL.)	slight to moderate	(.STRMRSM.)
Fabric, brittle	(.STRMFB.)	Grain-size reduction, brittle	(.STRMGRB.)	moderate	(.STRMRM.)
Fabric, brittle-ductile	(.STRMFBD.)	Grain-size reduction, ductile	(.STRMGRD.)	moderate to high	(.STRMRMH.)
Fabric, ductile	(.STRMFD.)	Layering	(.STRMY.)	high	(.STRMRH.)
Fabric, granoblastic	(.STRMFG.)	Layering, migmatitic	(.STRMYM.)	S-C structures	(.STRMSC.)
Fabric, laminated	(.STRMFL.)	Layering, mineral-segregation	(.STRMYS.)	Slaty cleavage	(.STRMK.)
Fabric, massive	(.STRMFM.)	Lineate	(.STRML.)		
Fabric, poikiloblastic	(.STRMFK.)	Mineral over-growths	(.STRMV.)		
Fabric porphyroblastic	(.STRMFP.)	Mullions	(.STRMM.)		
Fabric porphyroclastic	(.STRMFC.)				
Foliate	(.STRMO.)				
Foliation, cataclastic	(.STRMOC.)				
Foliation, gneissic	(.STRMOG.)				
Foliation, mylonitic	(.STRMOM.)				

METAMORPHIC GRAIN SIZE (.GSZM.)

Groundmass	(.GSZMG.)
Fine	(.GSZMGF.)
Fine to medium	(.GSZMGFM.)
Fine to coarse	(.GSZMGFC.)
Medium	(.GSZMGM.)
Medium to coarse	(.GSZMGMC.)
Coarse	(.GSZMGC.)
Very coarse	(.GSZMGV.)
Variable	(.GSZMGX.)
Porphyroclasts (relict crystals)	(.GSZMC.)
Fine (2mm to <5mm)	(.GSZMCF.)
Medium (5mm to <1cm)	(.GSZMCM.)
Med to coarse (1cm to <3cm)	(.GSZMCMC.)
Coarse (3cm to <6cm)	(.GSZMCC.)
Very coarse (>6cm)	(.GSZMCV.)
Variable	(.GSZMCX.)
Porphyroblasts (crystal growth during metamorphism)	(.GSZMB.)
Fine (2mm to <5mm)	(.GSZMBF.)
Medium (5mm to <1cm)	(.GSZMBM.)
Med to coarse (1cm to <3cm)	(.GSZMBMC.)
Coarse (3cm to <6cm)	(.GSZMBC.)
Very coarse (>6cm)	(.GSZMBV.)
Variable	(.GSZMBX.)

METAMORPHIC GRAIN SHAPE (.GSHM.)

Idioblastic	(.GSHMI.)
Xenoblastic	(.GSHMX.)

METAMORPHIC MINERALS (.MMM.)

Actinolite	(.MMMAC.)	Dolomite	(.MMMD.)	Microcline	(.MMMMI.)	Sericite	(.MMMSE.)
Albite	(.MMMAL.)	Epidote	(.MMME.)	Muscovite	(.MMMMU.)	Sillimanite	(.MMMSI.)
Andalusite	(.MMMA.)	Forsterite	(.MMMF.)	Orthoclase	(.MMMO.)	Staurolite	(.MMMST.)
Biotite	(.MMMB.)	Garnet	(.MMMG.)	Piemontite	(.MMMPI.)	Stilpnomelane	(.MMMS.)
Calcite	(.MMMCA.)	Hornblende	(.MMMH.)	Plagioclase	(.MMMPL.)	Talc	(.MMMTA.)
Chlorite	(.MMMCH.)	Jadeite	(.MMMJ.)	Prehnite	(.MMMPR.)	Tourmaline	(.MMMT.)
Clinozoisite	(.MMMC.)	Kyanite	(.MMMK.)	Pumpellyite	(.MMMP.)	Tremolite	(.MMMTR.)
Cordierite	(.MMMCO.)	Lawsonite	(.MMML.)	Pyroxene	(.MMMPX.)	Wollastonite	(.MMMW.)
Corundum	(.MMMCR.)	Magnetite	(.MMMM.)	Quartz	(.MMMQZ.)	Zoisite	(.MMMZ.)
Diopside	(.MMMDI.)			Rutile	(.MMMR.)		
				Scapolite	(.MMMSC.)		

Porphyroblast phase (.HABB.) Porphyroclast phase (.HABK.) Groundmass phase (.HABG)

METAMORPHIC ORIGIN (METO.)

METAMORPHIC STYLE (.METOS.)

Thermal	(.METOST.)
Dynamothermal	(.METOSD.)
Dynamic	(.METOSY.)
Type unspecified	(.METOSU.)

METAMORPHIC EPISODES (.METOE.)

Single episode	(.METOES.)
Multiple episodes	(.METOEM.)
Event 1	(.METOEM1.)
Event 2	(.METOEM2.)
Event 3	(.METOEM3.)
Last event	(.METOEML.)
Episodes uncertain	(.METOEU.)

PROTOLITH (.METOP.)

Protolith heterogeneous	(.METOPH.)
Protolith unspecified	(.METOPU.)
Protolith unknown	(.METOPK.)
Sedimentary protolith	(.METOPS.)
Marine protolith	(.METOPSM.)
Nonmarine protolith	(.METOPSN.)
Igneous protolith	(.METOPI.)
Plutonic protolith	(.METOPIP.)
Granitoid	(.METOPIPG.)
Equigranular granitoid	(.METOPIPGE.)
Leucocratic granitoid	(.METOPIPGL.)
Mafic Granitoid	(.METOPIPGM.)
Porphyritic granitoid	(.METOPIPGP.)
Volcanic protolith	(.METOPIV.)
Felsic volcanic protolith	(.METOPIVF.)
Mafic volcanic protolith	(.METOPIVM.)
Metamorphic protolith	(.METOPM.)

For specific protolith rock types, use non-metamorphic rock name (e.g., sandstone protolith=.SEDGS.)

METAMORPHIC GRADE AND CONFIDENCE

METAMORPHIC GRADE (.METOG.)

Prograde or Retrograde unspecified	(.METOGU.)	Prograde Metamorphism	(.METOGP.)	Retrograde Metamorphism	(.METOGR.)
Zeolite	(.METOGUZ.)	Zeolite	(.METOGPZ.)	Zeolite	(.METOGRZ.)
Prehnite-pumpellyite	(.METOGUP.)	Prehnite-pumpellyite	(.METOGPP.)	Prehnite-pumpellyite	(.METOGRP.)
Blueschist	(.METOGUB.)	Blueschist	(.METOGPB.)	Blueschist	(.METOGRB.)
Greenschist	(.METOGUG.)	Greenschist	(.METOGPG.)	Greenschist	(.METOGRG.)
Lower greenschist	(.METOGUGL.)	Lower greenschist	(.METOGPGL.)	Lower greenschist	(.METOGRGL.)
Upper greenschist	(.METOGUGU.)	Upper greenschist	(.METOGPGU.)	Upper greenschist	(.METOGRGU.)
Amphibolite	(.METOGUA.)	Amphibolite	(.METOGPA.)	Amphibolite	(.METOGRA.)
Lower amphibolite	(.METOGUAL.)	Lower amphibolite	(.METOGPAL.)	Lower amphibolite	(.METOGRAL.)
Upper amphibolite	(.METOGUAU.)	Upper amphibolite	(.METOGPAU.)	Upper amphibolite	(.METOGRAU.)
Pyroxene hornfels	(.METOGUY.)	Pyroxene hornfels	(.METOGPY.)	Pyroxene hornfels	(.METOGRY.)

INTERPRETIVE CONFIDENCE (.METOGC.)

Prograde	(.METOGCP.)	Retrograde	(.METOGCR.)
Documented	(.METOGCPD.)	Documented	(.METOGCRD.)
Probable	(.METOGCPP.)	Probable	(.METOGCRP.)
Uncertain	(.METOGCPC.)	Uncertain	(.METOGCRC.)
None	(.METOGCPN.)	None	(.METOGCRN.)
Unknown	(.METOGCPU.)	Unknown	(.METOGCRU.)

CONTINUE METAMORPHIC HISTORY

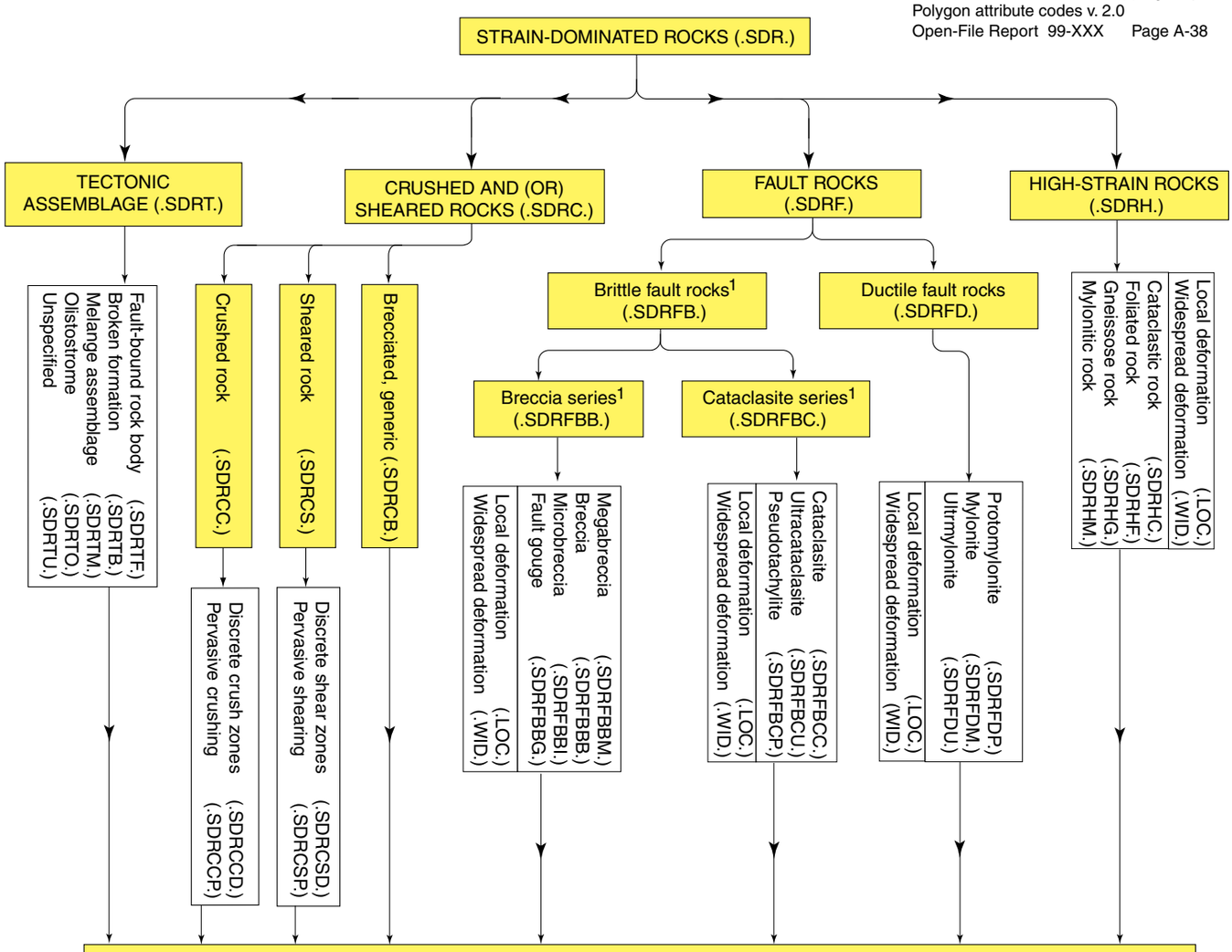
METAMORPHIC ORIGIN (continued) (METO.)

ROCK-UNIT DEFORMATIONAL AND THERMAL HISTORY (.METOD.)

Rock metamorphosed under low-strain conditions	(.METODL.)
Rock metamorphosed under high-strain conditions	(.METODH.)
Rock metamorphosed under brittle conditions	(.METODB.)
Rock metamorphosed under brittle-ductile conditions	(.METODBD.)
Rock metamorphosed under ductile conditions	(.METODD.)
Rock metamorphosed during pluton emplacement	(.METODP.)
Rock metamorphosed within shear zone	(.METODS.)
Rock metamorphosed within fault zone	(.METODF.)
normal-slip fault zone	(.METODFN.)
strike-slip fault zone	(.METODFS.)
thrust-slip fault zone	(.METODFT.)
beneath thrust fault	(.METODFTB.)
above thrust fault	(.METODFTA.)
Rock metamorphosed within extensional strain field	(.METODE.)
Rock metamorphosed within contractional strain field	(.METODC.)
Rock metamorphosed within transtensional strain field	(.METODT.)
Rock metamorphosed under plutonic conditions	(.METODRP.)
Rock has more than one metamorphism	(.METODM.)
Prograde followed by retrograde	(.METODME.)
Retrograde followed by prograde	(.METODMO.)
Regional followed by contact	(.METODMR.)
Regional followed by strain-dominant	(.METODMS.)
Metamorphism synchronous with deformation	(.METODX.)
Metamorphism synchronous with folding	(.METODXO.)
Metamorphism synchronous with faulting	(.METODXF.)

AGE OF METAMORPHISM (.AMM.)

AGE OF METAMORPHISM KNOWN	(.AMMK.)
Age of first metamorphic event	(.AMMK1.)
Age of second metamorphic event	(.AMMK2.)
Age of third metamorphic event	(.AMMK3.)
Age of last metamorphic event	(.AMMKL.)
Limiting age of metamorphic event	(.AMML.)
Lower delimiting age (age Max)	(.AMMLL.)
Upper delimiting age (age Min)	(.AMMLU.)
AGE OF METAMORPHISM UNKNOWN	(.AMMU.)
Age Confidence	(.AMMKC.)
age certain	(.AMMKCC.)
age likely but not confirmed	(.AMMKCL.)
age questionable	(.AMMKCQ.)
Metamorphism Tertiary, late	(.AMMCTL.)
Metamorphism Tertiary, middle	(.AMMCTM.)
Metamorphism Tertiary, early	(.AMMCTY.)
Metamorphism Mesozoic, late	(.AMMML.)
Metamorphism Mesozoic, middle	(.AMMMM.)
Metamorphism Mesozoic, early	(.AMMME.)



STRUCTURE AND FABRIC OF STRAINED ROCKS

NON-PENETRATIVE STRUCTURE & FABRIC

Brecciated, locally	(.STRDNK.)
Faults, local, small	(.STRDNFL.)
Faults, widespread, small	(.STRDNFW.)
Fissures	(.STRDNZ.)
Fractures	(.STRDNR.)
Fracture density	(.STRDNRD.)
locally abundant	(.STRDNRDL.)
sparse	(.STRDNRDS.)
widespread	(.STRDNRDW.)
Fracture condition	(.STRDNRC.)
caliche-filled	(.STRDNRCA.)
closed	(.STRDNRCC.)
closed, partly	(.STRDNRCP.)
open	(.STRDNRCO.)
Fracture orientation	(.STRDNRO.)
oriented	(.STRDNROT.)
conjugate	(.STRDNROTC.)
orthogonal	(.STRDNROTO.)
parallel	(.STRDNROTP.)
subparallel	(.STRDNROTS.)
random	(.STRDNROR.)
Fracture type	(.STRDNRT.)
tension	(.STRDNRTT.)
unspecified	(.STRDNRTU.)
Joints, local	(.STRDNJL.)
Joints, widespread	(.STRDNJW.)
Shear planes, local	(.STRDNSPL.)

PENETRATIVE STRUCTURE & FABRIC

Boudinage	(.STRDPB.)
Brecciation	(.STRDPK.)
Cataclasis, intergranular	(.STRDPCI.)
Cataclastic seams	(.STRDPCS.)
Cataclastic seams, local	(.STRDPCSL.)
Cataclastic seams, pervasive	(.STRDPCSP.)
Cleavage, slaty	(.STRDPKS.)
Fabric, brittle	(.STRDPFB.)
Fabric, brittle-ductile	(.STRDPFBD.)
Fabric, ductile	(.STRDPFD.)
Fabric, heterogeneous	(.STRDPFE.)
Fabric, homogeneous	(.STRDPFO.)
Fabric, laminated	(.STRDPFL.)
Fabric, porphyroclastic	(.STRDPFP.)
Fabric, porphyroclastic, locally	(.STRDPFPL.)
Fabric, recrystallized	(.STRDFPR.)
Slight	(.STRDPFRS.)
Slight to moderate	(.STRDPFRSM.)
Moderate	(.STRDPFRM.)
Moderate to high	(.STRDPFRMH.)
High	(.STRDPFRH.)
Foliation, penetrative	(.STRDPO.)
Weak	(.STRDPOW.)
Weak to moderate	(.STRDPOWM.)
Moderate	(.STRDPOM.)
Moderate to strong	(.STRDPOMS.)
Strong	(.STRDPOS.)
Foliation, cataclastic	(.STRDPOC.)
Foliation, gneissose	(.STRDPOG.)
Foliation, mylonitic	(.STRDPOY.)
Folds, minor	(.STRDPD.)
Fractures, penetrative	(.STRDPR.)
Grain flattening	(.STRDPGF.)
Grain lenticulation	(.STRDPGL.)
Grain-size reduction, brittle	(.STRDPGRB.)
Grain-size reduction, ductile	(.STRDPGRD.)
Layering	(.STRDPY.)
Layering, mineral segregation	(.STRDPYS.)
Lineation	(.STRDPL.)
Weak	(.STRDPLW.)
Moderate	(.STRDPLM.)
Strong	(.STRDPLS.)
Microtectonite features [1]	(.STRDPT.)
Foliation fish	(.STRDPTF.)
Mica fish	(.STRDPTM.)
Pressure shadows	(.STRDPTP.)
S-C fabrics	(.STRDPTS.)
Winged porphyroclasts	(.STRDPTW.)
Milled grains	(.STRDPX.)
Mullions	(.STRDPQ.)
Mylonitic seams	(.STRDPM.)
Pseudotachylite seams	(.STRDPP.)
Shear planes, local	(.STRDPSL.)

[1] From Davis and Reynolds, 1996

GEOLOGIC STRUCTURES (.STR.)

STRUCTURES RELATED TO SEDIMENTARY ORIGIN (.STRS.)

Bedding character	(.STRSB.)
amalgamated	(.STRSBA.)
channelate	(.STRSBC.)
crudely bedded	(.STRSBR.)
graded	(.STRSBG.)
graded, inverse	(.STRSBGI.)
indistinctly bedded	(.STRSBI.)
lenticular	(.STRSBL.)
non-bedded	(.STRSBX.)
parallel	(.STRSBP.)
non-parallel	(.STRSBN.)
Bioturbated	(.STRST.)
Bouma sequences	(.STRSZ.)
Bouma A	(.STRSZA.)
Bouma B	(.STRSZB.)
Bouma C	(.STRSZC.)
Bouma D	(.STRSZD.)
Bouma AB	(.STRSZAB.)
Bouma ABC	(.STRSZABC.)
Bouma ABCD	(.STRSZABCD.)
Bouma BC	(.STRSZBC.)
Bouma BCD	(.STRSZBCD.)
Bouma CD	(.STRSZCD.)
Clast imbrication	(.STRSCI.)
Fenestrate	(.STRSE.)
Flaser structures	(.STRSF.)
Lamination	(.STRSL.)
algal	(.STRSLA.)
algal, laterally linked heads	(.STRSLAL.)
algal, cryptalgal	(.STRSLAC.)
convolute	(.STRSLC.)
cross	(.STRSLX.)
cross, hummocky	(.STRSLXH.)
cross, planar	(.STRSLXP.)
cross, trough	(.STRSLXT.)
flat	(.STRSLF.)
flat to cross laminated	(.STRSLFX.)
ripple	(.STRSLR.)
ripple, climbing	(.STRSLRC.)
Massive	(.STRSM.)
Massive to flat laminated	(.STRSMFL.)
Massive to mottled	(.STRSMO.)
Mottled	(.STRSO.)
Mud cracks	(.STRSK.)
Pillow and ball	(.STRSP.)
Sole marks	(.STRSS.)
Unconformities locally present	(.STRSU.)
Variable	(.STRSV.)

POST-DEPOSITIONAL STRUCTURES (.STRP.)

Calcite fillings	(.STRPC.)
Blebs	(.STRPCB.)
Fractures	(.STRPCF.)
Stringers	(.STRPCS.)
Vugs	(.STRPCV.)
Dewatering structures	(.STRPW.)
Dissolution breccia	(.STRPD.)
Fenestrae	(.STRPF.)
Karst collapse structures	(.STRPK.)
Tepee structures	(.STRPT.)

STRUCTURES AND FABRICS RESULTING FROM IGNEOUS EMPLACEMENT (.STRI.)

Fabric, massive	(.STRIFM.)
Fabric, massive to foliated	(.STRIFMF.)
Fabric, massive to foliated slightly	(.STRIFMFS.)
Fabric, foliated	(.STRIFF.)
slightly	(.STRIFFS.)
slightly to moderately	(.STRIFFSM.)
moderately	(.STRIFFM.)
moderately to well	(.STRIFFMW.)
well	(.STRIFFW.)
Fabric, heterogeneous	(.STRIFE.)
Fabric, homogeneous	(.STRIFO.)
Flow banding	(.STRIB.)
Layering	(.STRIY.)
gneissose compositional	(.STRIYG.)
cumulate	(.STRIYC.)
Inclusions	(.STRII.)
inclusion-rich zone	(.STRIIR.)
local	(.STRIIL.)
Intermingled igneous rock & country rock	(.STRIR.)
Lineated	(.STRIL.)
slightly	(.STRILS.)
moderately	(.STRILM.)
well	(.STRILW.)
Magmatic migmatite	(.STRIM.)
Schlieren	(.STRIS.)
Variable	(.STRIV.)

CONTINUE GEOLOGIC STRUCTURES

GEOLOGIC STRUCTURES (Continued) (.STR.)

STRUCTURES RESULTING FROM METAMORPHISM (.STRM.)

Boudinage	(.STRMB.)
Cataclasis, intergranular	(.STRMCI.)
Fabric, blastoporphyritic	(.STRMFT.)
Fabric, info about	(.STRMF.)
blastiporphyritic	(.STRMFT.)
brittle	(.STRMFB.)
brittle-ductile	(.STRMFBD.)
ductile	(.STRMFD.)
granoblastic	(.STRMFG.)
laminated	(.STRMFL.)
massive	(.STRMFM.)
poikiloblastic	(.STRMFK.)
porphyroblastic	(.STRMFP.)
Foliate	(.STRMO.)
Foliation, cataclastic	(.STRMOC.)
Foliation, gneissic	(.STRMOG.)
Foliation, mylonitic	(.STRMOM.)
Foliation, schistose	(.STRMOS.)
Grain flattening	(.STRMGF.)
Grain lenticulation	(.STRMGL.)
Grain-size reduction, brittle	(.STRMGRB.)
Grain-size reduction, ductile	(.STRMGRD.)
Layering	(.STRMY.)
Layering, migmatitic	(.STRMYM.)
Layering, mineral-segregation	(.STRMYS.)
Lineate	(.STRML.)
Mineral overgrowths	(.STRMV.)
Mullions	(.STRMM.)
Recrystallization	(.STRMR.)
slight	(.STRMRS.)
slight to moderate	(.STRMRSM.)
moderate	(.STRMRM.)
moderate to high	(.STRMRMH.)
high	(.STRMRH.)
S-C structures	(.STRMSC.)
Slaty cleavage	(.STRMK.)

STRUCTURES RESULTING FROM DEFORMATION, Penetrative style not specified (.STRDS.)

Boudinage	(.STRDSB.)
Brecciation	(.STRDSK.)
Cataclasis, intergranular	(.STRDSCI.)
Cataclastic seams	(.STRDSCS.)
local	(.STRDSCSL.)
pervasive	(.STRDSCSP.)
Cleavage, slaty	(.STRDSV.)
Fabric, info about	(.STRDSF)
brittle	(.STRDSFB.)
brittle-ductile	(.STRDSFBD.)
ductile	(.STRDSFD.)
heterogeneous	(.STRDSFE.)
homogeneous	(.STRDSFO.)
laminated	(.STRDSFL.)
porphyroclastic	(.STRDSFP.)
porphyroclastic, locally	(.STRDSFPL.)
recrystallized	(.STRDSR.)
slight	(.STRDSRS.)
slight to moderate	(.STRDSRSM.)
moderate	(.STRDSRM.)
moderate to high	(.STRDSRMH.)
high	(.STRDSRH.)
Faults	(.STRDSA.)
local, small	(.STRDSAL.)
widespread, small	(.STRDSAW.)
Fissures	(.STRDSZ.)
Folds, minor	(.STRDSD.)
drag folds	(.STRDSDD.)
slump folds	(.STRDSDS.)
Foliation, penetrative	(.STRDSO.)
Weak	(.STRDSOW.)
Weak to moderate	(.STRDSOWM.)
Moderate	(.STRDSOM.)
Moderate to strong	(.STRDSOMS.)
Strong	(.STRDSOS.)
Foliation, cataclastic	(.STRDSOC.)
Foliation, gneissose	(.STRDSOG.)
Foliation, mylonitic	(.STRDSOM.)
Fractures	(.STRDSR.)
Condition	(.STRDSRC.)
caliche-filled	(.STRDSRCA.)
closed	(.STRDSRCC.)
open	(.STRDSRCO.)
closed, partly	(.STRDSRCCP.)
Density	(.STRDSRD.)
sparse	(.STRDSRDS.)
locally abundant	(.STRDSRDL.)
widespread	(.STRDSRDW.)
Orientation	(.STRDSRO.)
Oriented	(.STRDSROT.)
conjugate	(.STRDSROTC.)
orthogonal	(.STRDSROTO.)
parallel	(.STRDSROTP.)
subparallel	(.STRDSROTS.)
Random	(.STRDSROR.)
Type	(.STRDSRT.)
tension	(.STRDSRTT.)
Grain flattening	(.STRDSGF.)
Grain lenticulation	(.STRDSGL.)
Grain-size reduction, brittle	(.STRDSGRB.)
Grain-size reduction, ductile	(.STRDSGRD.)
Layering, mineral segregation	(.STRDSY.)
Lineation	(.STRDSL.)
Weak	(.STRDSLW.)
Moderate	(.STRDSLM.)
Strong	(.STRDSLS.)
Microtectonite features[1]	(.STRDST.)
Foliation fish	(.STRDSTF.)
Mica fish	(.STRDSTM.)
Pressure shadows	(.STRDSTP.)
S-C structures	(.STRDSTS.)
Winged porphyroclasts	(.STRDSTW.)
Milled grains	(.STRDSX.)
Mullions	(.STRDSQ.)
Mylonitic seams	(.STRDSM.)
Pseudotachylite seams	(.STRDSP.)
Shear planes, local	(.STRDSSL.)
Uncharacterized	(.STRDSU.)

[1]From Davis and Reynolds, 1996

CONTINUE GEOLOGIC STRUCTURES

GEOLOGIC STRUCTURES (Continued) (.STR.)

STRUCTURES RELATED TO GROUND-SURFACE DEFORMATION (.STRG.)

Ground fissures	(.STRDGF.)
origin unspecified	(.STRDGFU.)
desiccation-related fissures	(.STRDGFD.)
ground-subsidence fissures	(.STRDGFS.)
related to ground-water withdrawal	(.STRDGFSW.)
related to tectonic subsidence	(.STRDGFST.)
subsidence-origin unspecified	(.STRDGFSU.)
ground-shaking-related fissures	(.STRDGFK.)
expansion-contraction fissures	(.STRDGFE.)
slope-failure fissures	(.STRDGFF.)

Non-penetrative structural elements (.STRDN.)

Boudinage	(.STRDNB.)
Brecciation	(.STRDNK.)
Cataclastic seams	(.STRDNCS.)
local	(.STRDNCSL.)
widespread	(.STRDNCSW.)
Faults	(.STRDNA.)
local, small	(.STRDNAL.)
widespread, small	(.STRDNAW.)
Fissures	(.STRDNZ.)
Folds, minor	(.STRDND.)
drag folds	(.STRDNDD.)
slump folds	(.STRDNDS.)
Fractures	(.STRDNR.)
Condition	(.STRDNRC.)
caliche-filled	(.STRDNRCA.)
closed	(.STRDNRCC.)
closed, partly	(.STRDNRCCP.)
open	(.STRDNRCO.)
Density	(.STRDNRD.)
locally abundant	(.STRDNRDL.)
sparse	(.STRDNRDS.)
widespread	(.STRDNRDW.)
Orientation	(.STRDNRO.)
oriented	(.STRDNROT.)
conjugate	(.STRDNROTC.)
orthogonal	(.STRDNROTT.)
parallel	(.STRDNROTP.)
subparallel	(.STRDNROTS.)
random	(.STRDNROR.)
Type	(.STRDNRT.)
tension	(.STRDNRTT.)
Joints	(.STRDNJ.)
Mullions	(.STRDNM.)
Shear planes, local small	(.STRDNS.)

Penetrative structural elements (.STRDP.)

Brecciation	(.STRDPK.)
Boudinage	(.STRDPB.)
Cataclasis	(.STRDPC.)
intergranular	(.STRDPCI.)
seams	(.STRDPCS.)
local	(.STRDPCSL.)
widespread	(.STRDPCSW.)
Cleavage, slaty	(.STRDPV.)
Fabric	(.STRDPF.)
brittle	(.STRDPFB.)
brittle-ductile	(.STRDPFBD.)
ductile	(.STRDPFD.)
heterogeneous	(.STRDPFE.)
homogeneous	(.STRDPFO.)
laminated	(.STRDPFL.)
porphyroclastic	(.STRDPFP.)
porphyroclastic, locally	(.STRDPFPL.)
recrystallization	(.STRDPFR.)
slight	(.STRDPFRS.)
slight to moderate	(.STRDPFRSM.)
moderate	(.STRDPFRM.)
moderate to high	(.STRDPFRMH.)
high	(.STRDPFRH.)
Foliation	(.STRDPO.)
Weak	(.STRDPOW.)
Weak to moderate	(.STRDPOWM.)
Moderate	(.STRDPOM.)
Moderate to strong	(.STRDPOMS.)
Strong	(.STRDPOS.)
Foliation, cataclastic	(.STRDPOC.)
Foliation, gneissose	(.STRDPOG.)
Foliation, mylonitic	(.STRDPOY.)
Grain flattening	(.STRDPGF.)
Grain lenticulation	(.STRDPGL.)
Grain-size reduction, brittle	(.STRDPGRB.)
Grain-size reduction, ductile	(.STRDPGRD.)
Layering	(.STRDPY.)
mineral segregation	(.STRDPYS.)
Lineation	(.STRDPL.)
Microtectonite features[1]	(.STRDPT.)
Foliation fish	(.STRDPTF.)
Mica fish	(.STRDPTM.)
Pressure shadows	(.STRDPTP.)
S-C fabrics	(.STRDPTS.)
Winged porphyroclasts	(.STRDPTW.)
Milled grains	(.STRDPX.)
Mylonitic seams	(.STRDPM.)
Pseudotachylite seams	(.STRDPP.)
Shear planes, local	(.STRDPSL.)

[1] From Davis and Reynolds (1996)

DEFORMATION STRUCTURES, ORIGIN UNSPECIFIED (.STRDU.)

Banding	(.STRDUB.)
Cataclastic fabric	(.STRDUC.)
Foliation, generic	(.STRDUFO.)
Weak	(.STRDUFOW.)
Moderate	(.STRDUFOM.)
Strong	(.STRDUFOS.)
Gneissose layering	(.STRDUYG.)
Lineation	(.STRDUL.)
Mylonitic fabric	(.STRDUM.)

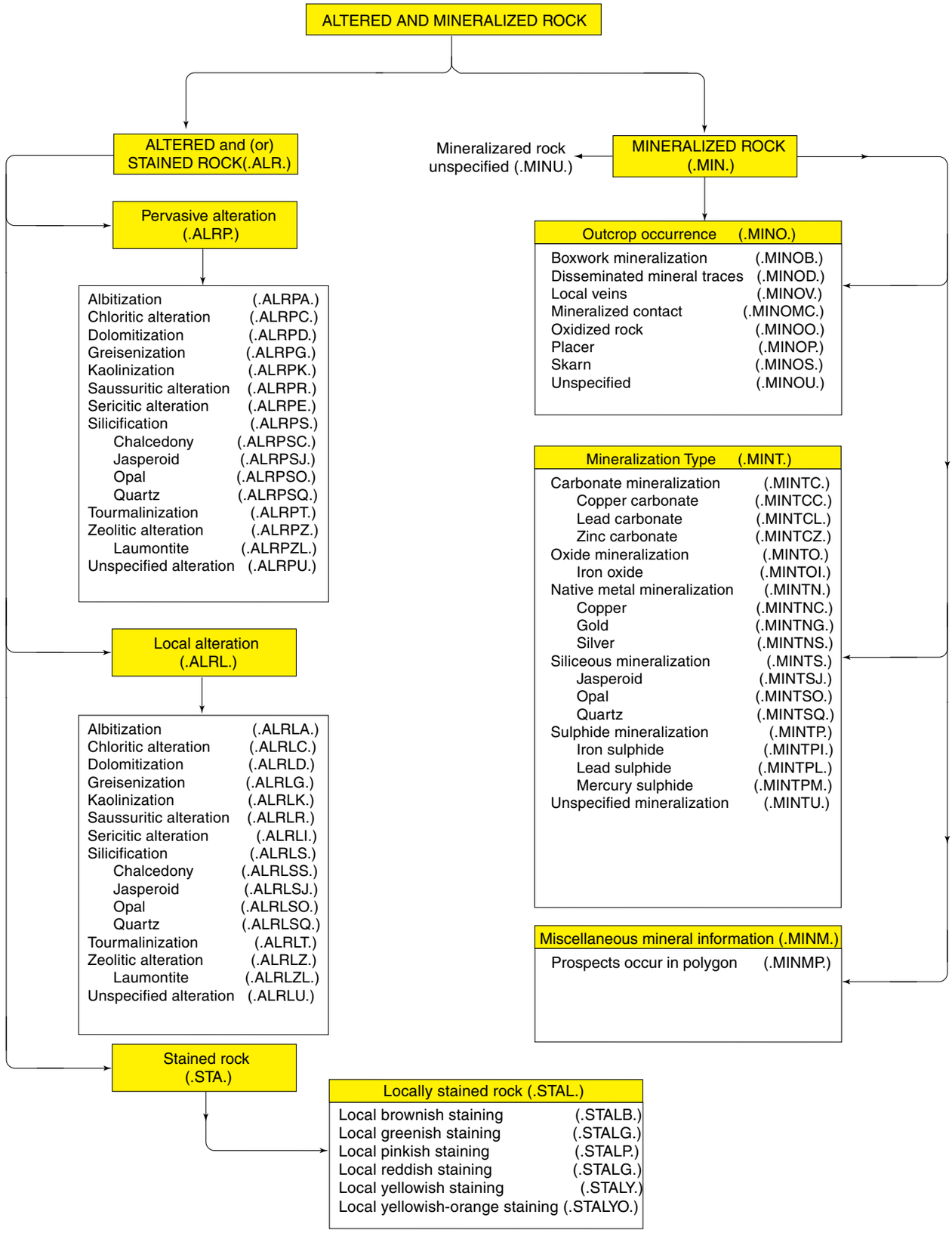
DEFORMATION HISTORY OF STRAINED ROCKS

ROCK-UNIT DEFORMATIONAL HISTORY (.DEF.)

Rock deformed under low-strain conditions	(.DEFL.)
Rock deformed under high-strain conditions	(.DEFH.)
Rock deformed under brittle conditions	(.DEFB.)
Rock deformed under brittle-ductile conditions	(.DEFBD.)
Rock deformed under ductile conditions	(.DEFD.)
Rock deformed during pluton emplacement	(.DEFP.)
Rock deformed within shear zone	(.DEFS.)
Rock deformed within fault zone	(.DEFF.)
deformed within normal-slip fault zone	(.DEFFN.)
deformed within strike-slip fault zone	(.DEFFS.)
deformed within thrust-slip fault zone	(.DEFFT.)
deformed beneath thrust fault	(.DEFFTB.)
deformed above thrust fault	(.DEFFTA.)
Rock deformed within fold belt	(.DEFO.)
Rock deformed within fold-and-thrust belt	(.DEFOT.)
Rock deformed within extensional strain field	(.DEFE.)
Rock deformed within contractional strain field	(.DEFC.)
Rock deformed within transtensional strain field	(.DEFT.)
Rock deformed during metamorphism	(.DEFM.)
Rock has multiple deformations	(.DEFU.)
Rock intruded under low-strain conditions	(.DEFIL.)
Rock intruded under high-strain conditions	(.DEFIH.)
Deformation style	(.DEFY.)
rock is folded	(.DEFYO.)
open folds	(.DEFYOO.)
tight folds	(.DEFYOT.)
tight folds broken by thrust faults	(.DEFYOTB.)
overturned folds	(.DEFYOV.)
assymetric folds	(.DEFYOA.)
rock is folded and faulted	(.DEFYOF.)
rock is faulted	(.DEFYF.)

AGE OF DEFORMATION (.ADF.)

Age of deformation known	(.ADFK.)
Age of faulting	(.ADFKF.)
Age of faulting certain	(.ADFKFC.)
Age of faulting likely, but not certain	(.ADFKFL.)
Age of faulting questionable	(.ADFKFQ.)
Age of folding	(.ADFKO.)
Age of folding certain	(.ADFKOC.)
Age of folding likely, but not certain	(.ADFKOL.)
Age of folding questionable	(.ADFKOQ.)
Age of penetrative deformation	(.ADFKP.)
Age of penetrative deformation certain	(.ADFKPC.)
Age of penetrative deformation likely, but not certain	(.ADFKPL.)
Age of penetrative deformation questionable	(.ADFKPQ.)
Age of brecciation or shearing	(.ADFKB.)
Age of brecciation or shearing certain	(.ADFKBC.)
Age of brecciation or shearing likely, but not certain	(.ADFKBL.)
Age of brecciation or shearing questionable	(.ADFKBQ.)
Age of fracturing	(.ADFKR.)
Age of fracturing certain	(.ADFKRC.)
Age of fracturing likely, but not certain	(.ADFKRL.)
Age of fracturing questionable	(.ADFKRQ.)
Age of first deformation event	(.ADFK1.)
Age of second deformation event	(.ADFK2.)
Age of third deformation event	(.ADFK3.)
Age of fourth deformation event	(.ADFK4.)
Age of last deformation event	(.ADFKL.)
Limiting age of deformation event	(.ADFL.)
Lower delimiting age (age Max)	(.ADFLL.)
Upper delimiting age (age Min)	(.ADFLU.)
Age Confidence	(.ADFKC.)
age certain	(.ADFKCC.)
age likely but not confirmed	(.ADFCL.)
age questionable	(.ADFCQ.)
Deformation Tertiary, late	(.ADFCTL.)
Deformation Tertiary, middle	(.ADFCTM.)
Deformation Tertiary, early	(.ADFCTY.)
Deformation Mesozoic, late	(.ADFML.)
Deformation Mesozoic, middle	(.ADFMM.)
Deformation Mesozoic, early	(.ADFME.)
Age of deformation unknown	(.ADFU.)


ALTERED AND MINERALIZED ROCK
ALTERED and (or) STAINED ROCK(.ALR.)
Mineralizared rock unspecified (.MINU.)
MINERALIZED ROCK (.MIN.)
Pervasive alteration (.ALRP.)
Albitization (.ALRPA.)
Chloritic alteration (.ALRPC.)
Dolomitization (.ALRPD.)
Greisenization (.ALRPG.)
Kaolinization (.ALRPK.)
Saussuritic alteration (.ALRPR.)
Sericitic alteration (.ALRPE.)
Silicification (.ALRPS.)
Chalcedony (.ALRPSC.)
Jasperoid (.ALRPSJ.)
Opal (.ALRPSO.)
Quartz (.ALRPSQ.)
Tourmalinization (.ALRPT.)
Zeolitic alteration (.ALRPZ.)
Laumontite (.ALRPZL.)
Unspecified alteration (.ALRPU.)
Local alteration (.ALRL.)
Albitization (.ALRLA.)
Chloritic alteration (.ALRLC.)
Dolomitization (.ALRLD.)
Greisenization (.ALRLG.)
Kaolinization (.ALRLK.)
Saussuritic alteration (.ALRLR.)
Sericitic alteration (.ALRLI.)
Silicification (.ALRLS.)
Chalcedony (.ALRLSS.)
Jasperoid (.ALRLSJ.)
Opal (.ALRLSO.)
Quartz (.ALRLSQ.)
Tourmalinization (.ALRLT.)
Zeolitic alteration (.ALRLZ.)
Laumontite (.ALRLZL.)
Unspecified alteration (.ALRLU.)
Stained rock (.STA.)
Locally stained rock (.STAL.)
Local brownish staining (.STALB.)
Local greenish staining (.STALG.)
Local pinkish staining (.STALP.)
Local reddish staining (.STALG.)
Local yellowish staining (.STALY.)
Local yellowish-orange staining (.STALYO.)
Outcrop occurrence (.MINO.)
Boxwork mineralization (.MINOB.)
Disseminated mineral traces (.MINOD.)
Local veins (.MINOV.)
Mineralized contact (.MINOMC.)
Oxidized rock (.MINOO.)
Placer (.MINOP.)
Skarn (.MINOS.)
Unspecified (.MINOU.)
Mineralization Type (.MINT.)
Carbonate mineralization (.MINTC.)
Copper carbonate (.MINTCC.)
Lead carbonate (.MINTCL.)
Zinc carbonate (.MINTCZ.)
Oxide mineralization (.MINTO.)
Iron oxide (.MINTOI.)
Native metal mineralization (.MINTN.)
Copper (.MINTNC.)
Gold (.MINTNG.)
Silver (.MINTNS.)
Siliceous mineralization (.MINTS.)
Jasperoid (.MINTSJ.)
Opal (.MINTSO.)
Quartz (.MINTSQ.)
Sulphide mineralization (.MINTP.)
Iron sulphide (.MINTPI.)
Lead sulphide (.MINTPL.)
Mercury sulphide (.MINTPM.)
Unspecified mineralization (.MINTU.)
Miscellaneous mineral information (.MINM.)
Prospects occur in polygon (.MINMP.)

MINERALIZATION AND ALTERATION HISTORY

AGE OF ALTERATION (.AAL.)

Age of alteration known	(.AALK.)
Age of first alteration event	(.AALK1.)
Age of second alteration event	(.AALK2.)
Age of third alteration event	(.AALK3.)
Age of fourth alteration event	(.AALK4.)
Age of last alteration event	(.AALKL.)
Limiting age of alteration event	(.AALL.)
Lower delimiting age (age Max)	(.AALLL.)
Upper delimiting age (age Min)	(.AALLU.)
Age Confidence	(.AALKC.)
age certain	(.AALKCC.)
age likely but not confirmed	(.AALCL.)
age questionable	(.AALCQ.)
Alteration Tertiary, late	(.AALCTL.)
Alteration Tertiary, middle	(.AALCTM.)
Alteration Tertiary, early	(.AALCTY.)
Alteration Mesozoic, late	(.AALML.)
Alteration Mesozoic, middle	(.AALMM.)
Alteration Mesozoic, early	(.AALME.)
Age of alteration unknown	(.AALU.)

AGE OF ALTERATION (.AMN.)

Age of mineralization known	(.AMNK.)
Age of first mineralization event	(.AMNK1.)
Age of second mineralization event	(.AMNK2.)
Age of third mineralization event	(.AMNK3.)
Age of fourth mineralization event	(.AMNK4.)
Age of last mineralization event	(.AMNKL.)
Limiting age of mineralization event	(.AMNL.)
Lower delimiting age (age Max)	(.AMNLL.)
Upper delimiting age (age Min)	(.AMNLU.)
Age Confidence	(.AMNKC.)
age certain	(.AMNKCC.)
age likely but not confirmed	(.AMNCL.)
age questionable	(.AMNCQ.)
Mineralization Tertiary, late	(.AMNCTL.)
Mineralization Tertiary, middle	(.AMNCTM.)
Mineralization Tertiary, early	(.AMNCTY.)
Mineralization Mesozoic, late	(.AMNML.)
Mineralization Mesozoic, middle	(.AMNMM.)
Mineralization Mesozoic, early	(.AMNME.)
Age of mineralization unknown	(.AMNU.)

MISCELLANEOUS GEOLOGIC ATTRIBUTES

Identity of unmapped units included in mapped unit (.UMR.)

Older included rocks	(.UMRO.)
Country rock for igneous intrusion	(.UMROC.)
Igneous	(.UMROCI.)
Granitic rock	(.UMROCIG.)
Lowe pluton	(.UMROCIGL.)
monzogranite	(.UMROCIGM.)
granodiorite	(.UMROCIGG.)
Dioritic rock	(.UMROCID.)
Metamorphic	(.UMROCM.)
Metasedimentary	(.UMROCMS.)
marble	(.UMROCMSM.)
metaquartzite	(.UMROCMSQ.)
schist	(.UMROCMSS.)
Metaigneous	(.UMROCMI.)
amphibolite	(.UMROCMIA.)
Strain-dominated rock	(.UMROCD.)
Cataclastic rock	(.UMROCDC.)
Mylonitic rock	(.UMROCDM.)
Sheared rock	(.UMROCDS.)
Unspecified country rock	(.UMROCU.)
Older rocks are earlier intrusive phase	(.UMROI.)
Older rocks are metamorphic	(.UMROM.)
Older rocks are sedimentary	(.UMROS.)
Older included rocks are unspecified	(.UMROU.)
Coeval (same age) included rocks	(.UMRC.)
Igneous	(.UMRCI.)
Dikes	(.UMRCIY.)
Aplite dikes	(.UMRCIYA.)
Basalt dikes	(.UMRCIYB.)
Dioritic dikes	(.UMRCIYD.)
Leucogranitic dikes	(.UMRCIYL.)
Mafic dikes	(.UMRCIYM.)
Dioritic rock	(.UMRCID.)
Granitic rock	(.UMRCIG.)
monzogranite	(.UMRCIGM.)
granodiorite	(.UMRCIGG.)
Coeval rocks are intrusive phase	(.UMRCII.)
Metamorphic	(.UMRCM.)
Metasedimentary	(.UMRCMS.)
marble	(.UMRCMSM.)
metaquartzite	(.UMRCMSQ.)
schist	(.UMRCMSS.)
Metaigneous	(.UMRCMI.)
amphibolite	(.UMRCMIA.)
metavolcanic	(.UMRCMIV.)
greenstone	(.UMRCMIVG.)
Strain-dominated rock	(.UMRCD.)
cataclastic rock	(.UMRCDC.)
mylonitic rock	(.UMRCDM.)
sheared rock	(.UMRCDS.)
Coeval included rocks are unspecified	(.UMRCU.)
Younger included rocks	(.UMRY.)
Igneous rock	(.UMRYI.)
Dikes	(.UMRYIY.)
Aplite dikes	(.UMRYIYA.)
Basalt dikes	(.UMRYIYB.)
Dioritic dikes	(.UMRYIYD.)
Leucogranitic dikes	(.UMRYIYL.)
Mafic dikes	(.UMRYIYM.)
Dioritic rock	(.UMRYID.)
Granitic rock	(.UMRYIG.)
Lowe igneous pluton	(.UMRYIGL.)
monzogranite	(.UMRYIGM.)
granodiorite	(.UMRYIGG.)
Sedimentary rock	(.UMRYS.)
Strain-dominated rock	(.UMRYD.)
cataclastic rock	(.UMRYDC.)
mylonitic rock	(.UMRYDM.)
sheared rock	(.UMRYDS.)
Igneous rock	(.UMRYI.)
Younger included rocks are unspecified	(.UMRYU.)

Man-made entities (.MAN.)

Flood-control entities	(.MANF.)
Engineered channel	(.MANFC.)
Flood-control dike	(.MANFK.)
Flood-control dam	(.MANFD.)
Transportation entities	(.MANT.)
Railroad cut and(or) fill	(.MANTR.)
Roadway cut and(or) fill	(.MANTW.)
Commercial or residential cut and (or) fill	(.MANC.)
Reservoir dam and(or) spillway	(.MANR.)

NOTE: The following tables are an alternative way to organize and code attributes for geologic process and geologic environment. Compare with other pages in this document that deal with these topics in a different way (for e.g., p. A-19 through A-22, and p. A-28 and A-29).

GEOLOGIC PROCESSES (.GPR.)

Deformation	(.GPRD.)
Brecciation	(.GPRDB.)
Faulting	(.GPRDF.)
Folding	(.GPRDO.)
Fracturing	(.GPRDR.)
Jointing	(.GPRDJ.)
Penetrative deformation	(.GPRDP.)
Cataclasis	(.GPRDPC.)
Mylonitization	(.GPRDPM.)
Shearing	(.GPRDH.)
Erosion	(.GPRE.)
Igneous crystallization	(.GPRI.)
Emplacement style	(GPRIE.)
Intrusive	(.GPRIEI.)
Extrusive	(.GPRIEE.)
Pyroclastic	(.GPRIEP.)
Emplacement setting	(GPRIE.)
Metamorphism	(.GPRM.)
prograde	(.GPRMP.)
retrograde	(.GPRMR.)
Pedogenesis	(.GPRP.)
Sedimentary deposition	(.GPRS.)
Sedimentary environment	
Sedimentary process	
Sedimentary Lithification	(.GPRL.)
Uplift	(.GPRU.)
Weathering and regolith development	(.GPRW.)

GEOLOGIC ENVIRONMENT (.ENV.)

Igneous environment	(.ENVI.)
Hypabyssal environment	(.ENVIH.)
Plutonic environment	(.ENVIP.)
Volcanic environment	(.ENVIV.)
Extrusive environment	(.ENVIVE.)
Pyroclastic environment	(.ENVIVP.)
Metamorphic environment	(.ENVM.)
Sedimentary environment	(.ENVS.)
Marine environment	(.ENVSM.)
Oceanic environment	(.ENVSMO.)
Abyssal plain	(.ENVSMOA.)
Plateau	(.ENVSMOP.)
Seamount	(.ENVSMOS.)
Continental-margin environment	(.ENVSMM.)
Continental rise-slope	(.ENVSMMR.)
Continental shelf	(.ENVSMMS.)
Continental borderland	(.ENVSMMB.)
Continental interior environment	(.ENVSMI.)
Interior shelf-basin complex	(.ENVSMIS.)
Epicontinental seaway	(.ENVSMIE.)
Nonmarine environment	(.ENVSN.)
Coastal plain	(.ENVSNC.)
Alluvial plain	(.ENVSNA.)
Mountain-margin	(.ENVSNM.)
Intermontane	(.ENVSNI.)
Glacial plain	(.ENVSNG.)
Volcanogenic complex	(.ENVSNV.)

MINERALOGY (.MIN.) (Silicate minerals)

SILICATE MINERALS	(.MINS.)
Chain silicates	(.MINSC.)
Amphibole group	(.MINSCA.)
Clinoamphibole	(.MINSCAC.)
Actinolite	(.MINSCACA.)
Crossite	(.MINSCACC.)
Glaucophane	(.MINSCACG.)
Hornblende	(.MINSCACH.)
Riebeckite	(.MINSCACR.)
Tremolite	(.MINSCACT.)
Orthoamphibole	(.MINSCAO.)
Anthophyllite	(.MINSCAOA.)
Pyroxene group	(.MINSCP.)
Clinopyroxene	(.MINSCPC.)
Augite	(.MINSCPCA.)
Diopside	(.MINSCPCD.)
Hedenbergite	(.MINSCPCH.)
Jadeite	(.MINSCPCJ.)
Omphacite	(.MINSCPCO.)
Orthopyroxene	(.MINSCPO.)
Bronzite	(.MINSCPOB.)
Enstatite	(.MINSCPOE.)
Hypersthene	(.MINSCPOH.)
Wollastonite	(.MINSCW.)
Framework silicates	(.MINSF.)
Feldspar group	(.MINSFF.)
Alkali feldspars	(.MINSFFA.)
Microcline	(.MINSFFAM.)
Orthoclase	(.MINSFFAO.)
Perthite	(.MINSFFAP.)
Sanidine	(.MINSFFAS.)
Plagioclase feldspar	(.MINSFFP.)
Albite	(.MINSFFPA1.)
Oligoclase	(.MINSFFPO.)
Andesine	(.MINSFFPA2.)
Labradorite	(.MINSFFPL.)
Bytownite	(.MINSFFPB.)
Anorthite	(.MINSFFPA3.)
Feldspathoid group	(.MINSFD.)
Leucite	(.MINSFDL.)
Nepheline group	(.MINSFDN.)
Nepheline	(.MINSFDNN.)
Kalsilite	(.MINSFDNK.)
Pentalite	(.MINSFDP.)
Scapolite	(.MINSFDS.)
Sodalite group	(.MINSFDO.)
Sodalite	(.MINSFDOS.)
Helvite	(.MINSFDOH.)
Silica minerals	(.MINSFS.)
Chalcedony	(.MINSFSC3.)
Coesite	(.MINSFSC1.)
Cristobalite	(.MINSFSC2.)
Opal	(.MINSFSO.)
Quartz	(.MINSFSQ.)
Tridymite	(.MINSFST.)
Zeolites	(.MINSFZ.)
Chabazite	(.MINSFZC.)
Erionite	(.MINSFZE.)
Heulandite	(.MINSFZH.)
Laumontite	(.MINSFZL.)
Mordenite	(.MINSFZM.)
Natrolite	(.MINSFZN.)
Stilbite	(.MINSFZS.)
Ortho and Ring silicates	(.MINSO.)
Aluminosilicate group	(.MINSOA.)
Andalusite	(.MINSOAA.)
Kyanite	(.MINSOAK.)
Mullite	(.MINSOAM.)
Sillimanite	(.MINSOAS.)
Beryl	(.MINSOB.)
Chloritoid	(.MINSOC1.)
Cordierite	(.MINSOC2.)
Epidote group	(.MINSOE.)
Allanite	(.MINSOEA.)
Clinozoisite	(.MINSOEC.)
Epidote	(.MINSOEE.)
Piemontite	(.MINSOEP.)
Zoisite	(.MINSOEZ.)
Garnet group	(.MINSOG.)
Pyralspite	(.MINSOGP.)
Almandine	(.MINSOGPA.)
Pyrope	(.MINSOGPP.)
Spessartine	(.MINSOGPS.)
Ugrandite	(.MINSOGU.)
Andradite	(.MINSOGUA.)
Grossularite	(.MINSOGUG.)
Uvarovite	(.MINSOGUU.)
Idocrase	(.MINSOI.)
Lawsonite	(.MINSOL.)
Melilite	(.MINSOM.)
Olivine	(.MINSOO.)
Fayalite	(.MINSOOA.)
Forsterite	(.MINSOOO.)
Pumpellyite	(.MINSOP2.)
Sphene	(.MINSOS1.)
Staurolite	(.MINSOS2.)
Tourmaline	(.MINSOT.)
Zircon	(.MINSOZ.)
Sheet silicates	(.MINSS.)
Chlorite	(.MINSSC1.)
Clay	(.MINSSC2.)
Illite	(.MINSSC2I.)
Kaolinite	(.MINSSC2K.)
Montmorillonite	(.MINSSC2M.)
Glaucophane	(.MINSCACG.)
Hornblende	(.MINSCACH.)
Tremolite	(.MINSCACT.)
Micas	(.MINSSM.)
Biotite	(.MINSSMB.)
Glauconite	(.MINSSMG.)
Lepidolite	(.MINSSML.)
Muscovite	(.MINSSMM.)
Phlogopite	(.MINSSMP1.)
Pyrophyllite	(.MINSSMP2.)
Sericite	(.MINSSMS.)
Prehnite	(.MINSSP.)
Serpentine	(.MINSSS1.)
Antigorite	(.MINSSS1A.)
Chrysotile	(.MINSSS1C.)
Lizardite	(.MINSSS1L.)
Stilpnomelane	(.MINSSS2.)
Talc	(.MINSST.)

MINERALOGY (.MIN.) (non-silicate minerals)

BORATES	(.MINB.)
Borax	(.MINBB.)
CARBONATES	(.MINC.)
Aragonite	(.MINCA.)
Azurite	(.MINCZ.)
Calcite	(.MINCC1.)
Cerrusite	(.MINCC2.)
Dolomite	(.MINCD.)
Malachite	(.MINCK.)
Magnesite	(.MINCM.)
Rhodochrosite	(.MINCR.)
Siderite	(.MINCS1.)
Smithsonite	(.MINCS2.)
Strontianite	(.MINCS3.)
HALIDES	(.MINH.)
Fluorite	(.MINHF.)
Halite	(.MINHH.)
Sylvite	(.MINHS.)
HYDROXIDES	(.MINX.)
Brucite	(.MINXB.)
Goethite	(.MINXG.)
NATIVE METALS	(.MINM.)
Copper	(.MINMC.)
Gold	(.MINMG.)
Silver	(.MINMS.)
OXIDES	(.MINO.)
Carnotite	(.MINOC1.)
Cassiterite	(.MINOC2.)
Corundum	(.MINOC3.)
Hematite	(.MINOH.)
Ilmenite	(.MINOI.)
Rutile	(.MINOR.)
Spinel Group	(.MINOS.)
Chromite	(.MINOSC.)
Magnetite	(.MINOSM.)
Spinel	(.MINOSS.)
Uraninite	(.MINOU.)
Wulfenite	(.MINOW.)
PHOSPHATES	(.MINP.)
Apatite	(.MINPA.)
Monazite	(.MINPM.)
SULPHATES	(.MINF.)
Anhydrite	(.MINFA.)
Barite	(.MINFB.)
Celestite	(.MINFC.)
Gypsum	(.MINFG.)
SULFIDES	(.MIND.)
Arsenopyrite	(.MINDA.)
Bornite	(.MINDB.)
Chalcopyrite	(.MINDC.)
Galena	(.MINDG.)
Marcasite	(.MINDM1.)
Molybdenite	(.MINDM2.)
Pyrite	(.MINDP.)
Pyrrhotite	(.MINDY.)
Sphalerite	(.MINDS.)
TUNGSTATES	(.MINT.)
Scheelite	(.MINTS.)
MISCELLANEOUS MINERALS	(.MINL.)
Graphite	(.MINLG.)

ORGANIZATION OF POLYGON ATTRIBUTES

INFORMATION ABOUT ROCK NAME (ROCK CLASSIFICATION)

- Igneous classification
- Metamorphic classification
- Sedimentary classification

→ IS FOUND IN THIS TABLE → LITHOLOGY

ROCK-TYPE PHYSICAL PROPERTIES (LIKE THESE)

IGNEOUS ROCKS
- Contact relations
  - Contact character
  - Contact dip
- Fabric
- Geomorphic expression
- Igneous-flow structures
- Mineralogic composition
- Rock color
- Texture
  - Grain size
  - Grain shape
  - Grain relations

METAMORPHIC ROCKS
- Contact relations
  - Contact character
  - Contact dip
- Fabric
- Metamorphic structures
- Geomorphic expression
- Mineralogic composition
- Rock color
- Texture
  - Grain size
  - Grain shape
  - Grain relations

SEDIMENTARY ROCKS
- Bedding features
  - Bedding character
  - Bedding thickness
  - Bedding surfaces
- Contact relations
- Particle description
  - Grain properties
    - Grain composition
    - Grain relations
    - Grain size
    - Grain shape
  - Clast properties
    - Clast composition
    - Clast relations
    - Clast size
    - Clast shape
  - Particle Texture
    - Grain relations
    - Clast relations
    - Clast-to-matrix ratio
- Particle sorting
- Rock color
- Rock hardness or consolidation
- Sedimentary structures
- Surface features
  - Geomorphic expression
  - Pedogenic soil
  - Surface weathering and dissection

ARE STORED IN "BOOKS" (DATA TABLES) LIKE THESE

- LITHOLOGY
- STRUCTURE
- MINERALOGY
- PETROGRAPHY
- PALEONTOLOGY
- ENGINEERING PROPERTIES
- GEOPHYSICAL PROPERTIES

INFORMATION ABOUT
How a feature was formed
When a feature was formed
Where a feature was formed
Under what conditions a feature was formed

→ ARE FOUND IN THESE TABLES →
- AGE
- GENETIC PROCESS

INFORMATION ABOUT
Stratigraphic position of one map unit relative to another
The nature of contact boundaries between map units

→ ARE FOUND IN THESE TABLES →
- STRATIGRAPHIC RELATIONS
- STACKING STRATIGRAPHY

INFORMATION ABOUT
The map-maker's confidence in the scientific identity of a geologic feature
The map-makers confidence in an attribute ascribed to a geologic feature

→ ARE FOUND IN THESE TABLES → FEATURE CONFIDENCE

NOTE: This page illustrates how the geologic attributes on pages A-1 through A-48 are organized into the SCAMP data model proposed by Kennedy and Matti (1999, USGS Open-File Report 99-145)