

Description of Minnesota Geological Survey's Coding System

Paleozoic (pre-Cretaceous) of southeastern
Minnesota

442600	DEVO	DEVONIAN, UNDIFFERENTIATED
442604	DCVA	CEDAR VALLEY
442603	DCOM	CEDAR VALLEY-MAQUOKETA
442602	DCOG	CEDAR VALLEY-GALENA
442606	DWAP	WAPSIPINICON FORMATION
442601	DSPL	SPILLVILLE FORMATION
442608	DSOM	SPILLVILLE-MAQUOKETA
442607	DSOG	SPILLVILLE-GALENA
442530	OMAQ	MAQUOKETA
442531	OMQD	MAQUOKETA-DUBUQUE
442529	OMQG	MAQUOKETA-GALENA
442528	ODUB	DUBUQUE
442527	ODGL	DUBUQUE-GALENA
442526	OGAL	GALENA
442525	OGSV	GALENA/STEWARTVILLE MBR
442524	OGPR	GALENA/PROSSER MBR
442523	OGCM	GALENA/CUMMINGSVILLE MBR
442522	OGDC	GALENA-DECORAH
442521	ODCR	DECORAH
442520	ODPL	DECORAH-PLATTEVILLE
442519	OGDP	GALENA-DECORAH-PLATTEVILLE
442518	OPVL	PLATTEVILLE
442517	OPVC	PLATTEVILLE/CARIMONA MBR
442516	OPVM	PLATTEVILLE/MAGNOLIA MBR
442515	OPVH	PLATTEVILLE/HIDDEN FALLS MBR
442514	OPVF	PLATTEVILLE/MIFFLIN MBR
442513	OPVP	PLATTEVILLE/PECATONICA MBR
442512	OPGW	PLATTEVILLE-GLENWOOD
442511	OGWD	GLENWOOD
442510	OPSP	PLATTEVILLE-ST.PETER
442509	OGSP	GLENWOOD-ST.PETER
442508	OSTP	ST.PETER
442507	OSPC	ST.PETER-PRAIRIE DU CHIEN
442506	OPDC	PRAIRIE DU CHIEN GROUP
442505	OPSH	SHAKOPEE FM(PRAIRIE DU CHIEN)
442504	OPWR	SHAKOPEE/WILLOW RIVER MBR
442503	OPNR	SHAKOPEE/NEW RICHMOND MBR

442502	OPOD	ONEOTA FM(PRAIRIE DU CHIEN)
442501	OPCJ	PRAIRIE DU CHIEN-JORDAN
442500	ORDO	ORDOVICIAN, UNDIFFERENTIATED
442416	CJDN	JORDAN
442415	CJSL	JORDAN-ST.LAWRENCE
442414	CSTL	ST.LAWRENCE
442413	CSLF	ST.LAWRENCE-FRANCONIA
442412	CFRN	FRANCONIA
442411	CFIG	FRANCONIA-IRONTON-GALESVILLE
442410	CFRA	FRANCONIAN STAGE
442409	CIRN	IRONTON
442408	CIGL	IRONTON-GALESVILLE
442407	CIGE	IRONTON-GALESVILLE-EAU CLAIRE
442406	CGSL	GALESVILLE
442405	CGEC	GALESVILLE-EAU CLAIRE
442404	CDRE	DRESBACHIAN STAGE
442403	CECR	EAU CLAIRE
442402	CEMS	EAU CLAIRE-MT.SIMON
442401	CMTS	MT.SIMON
442400	CAMB	CAMBRIAN, UNDIFFERENTIATED
442417	CMSH	MT.SIMON-HINCKLEY
442418	PUDF	PALEOZOIC, UNDIFFERENTIATED
442419	PCRG	PRE-CROIXAN REGOLITH

Cretaceous units; Paleozoic of western

Minnesota

442800	KRET	CRETACEOUS, UNDIFFERENTIATED
442801	KCLR	COLERAINE
442802	KWND	WINDROW
442803	KWOS	WINDROW/OSTRANDER MBR
442804	KWIH	WINDROW/IRON HILL MBR
442805	KREG	CRETACEOUS REGOLITH
442806	KPRR	PIERRE SHALE
442807	KNBR	NIOBRARA
442808	KCRL	CARLILE SHALE
442809	KCBH	CARLILE/BLUE HILL MBR
442810	KCFP	CARLILE/FAIRPORT MBR
442811	KCCD	CARLILE/CODELL SANDSTONE MBR
442812	KGRN	GREENHORN
442813	KGRS	GRANEROS SHALE
442814	KDKT	DAKOTA

442815	KDNB	DAKOTA/NISHNABOTNA MBR
442816	KDWB	DAKOTA/WOODBURY MBR
442817	KSRC	SPLIT ROCK CREEK
442701	JURA	JURASSIC-HALLOCK REDBEDS
442532	OSTW	STONEWALL
442533	OSTM	STONEY MOUNTAIN
442534	ORRV	RED RIVER
442535	ORWN	RED RIVER-WINNIPEG
442536	OWIN	WINNEPEG

Quaternary/Pleistocene deposits

443000	QUUU	PLEISTOCENE UNDIFF.
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In general Pleistocene deposit codes have the form Qxyz or Wxyz where Q indicates Pleistocene and W, more specifically, Wisconsinan deposits. x, y, and z may have a wide range of designations:

x	C	clay
	F	sand
	G	gravel
	I	silt
	H	sand + gravel
	L	clay + sand
	W	clay + sand + silt - pebble free
	P	clay + sand + silt - pebbly
	N	silt + sand + and/or gravel (no clay)
	S	peat, muck, organic-rich material
U	deposit type unknown or undifferentiated	
y	C	contains predominantly calcareous pebbles
	P	contains predominantly Precambrian pebbles
	S	contains predominantly shale pebbles
	U	materials undifferentiated or sorting unknown
	N	unsorted
	O	poorly sorted
	D	moderately sorted
W	well sorted	
z	B	brown
	G	gray

K	black
R	red
U	color unknown or unspecified
Y	yellow

Quaternary/Recent (Holocene) deposits

443099	RMMF	MAN-MADE FILL
443098	RUUU	RECENT DEPOSIT

In general Holocene deposit codes have the form Rxyz where R denotes Recent or Holocene deposits and x, y, and z may have any of the codes specified for Pleistocene deposits.

Precambrian

442100	PCUU	PRECAMBRIAN, UNDIFFERENTIATED
442101	PCCR	PRECAMBRIAN CRYSTALLINE ROCKS

Precambrian (Archean)

[equivalent to old PW-- codes]

442159	PAAU	ALGOMAN GRANITES UNDIVIDED
442105	PAAR	ARGO GNEISS
442106	PABL	BELLINGHAM GRANITE
442107	PABR	BURNTSIDE GNEISS
442108	PADL	DEER LAKE COMPLEX
442109	PAES	SOUDAN IRON-FORMATION
442110	PAEY	ELY GREENSTONE
442111	PAFR	FORT RIDGLEY GRANITE
442112	PAGR	GIANTS RANGE GRANITE UNDIVIDED
442113	PAGF	GRANITE FALLS GNEISS
442114	PAKG	KNIFE LAKE GROUP
442115	PALL	LAC LACROIX GRANITE
442116	PALV	LAKE VERMILION FORMATION
442117	PAMC	MCGRATH GNEISS
442118	PAMV	MONTEVIDEO GNEISS
442119	PAMR	MORTON GNEISS
442120	PANL	NEWTON LAKE FORMATION

442121	PAOD	ODESSA GRANITE
442122	PAOR	ORTONVILLE GRANITE
442123	PARG	RICHMOND GNEISS
442124	PASW	ST.WENDEL METAGABBRO
442125	PASH	SACRED HEART GRANITE
442163	PASG	SAGANAGA TONALITE
442126	PASR	SAUK RAPIDS META. COMPLEX
442127	PAST	SARTELL GNEISS
442128	PASF	SEAFORTH GNEISS
442102	PAUD	ARCHEAN ROCKS UNDIVIDED
442129	PAVC	VERMILION GRANITIC COMPLEX
442130	PAWT	WATAB AMPHIBOLITE
442104	PAGU	ARCHEAN GRANITE PLUTON

Precambrian (Early Proterozoic)
[equivalent to old PX-- codes]

442251	PEAG	ANIMIKIE GROUP
442252	PEBI	BIWABIK IRON-FORMATION
442253	PEBC	BRADBURY CREEK GRANODIORTE
442254	PECM	CEDAR MOUNTAIN COMPLEX
442255	PEDN	DENHAM FORMATION
442256	PEFH	FREEDHEM GRANODIORITE
442257	PEGT	GLEN TOWNSHIP FORMATION
442258	PEGI	GUNFLINT IRON-FORMATION
442259	PEHL	HILLMAN MIGMATITE
442260	PEIL	ISLE GRANITE
442261	PELF	LITTLE FALLS FORMATION
442262	PEMN	MAHNOMEN FORMATION
442263	PEML	MILLE LACS GROUP
442264	PEPZ	PIERZ GRANITE
442265	PEPK	POKEGAMA QUARTZITE
442266	PERB	RABBIT LAKE FORMATION
442267	PERL	RABBIT LK.FM-LOWER MEMBER
442268	PERE	RABBIT LK.FM-EMILY MEMBER
442269	PERU	RABBIT LK.FM-UPPER MEMBER
442270	PERF	REFORMATORY GRANIT
442271	PERK	ROCKVILLE GRANIT
442272	PERD	RANDALL FORMATION
442273	PERV	ROVE FORMATION
442274	PESC	ST.CLOUD GRANITE
442275	PEST	STEARNS GRANITIC COMPLEX

442280	PETM	THOMSON FORMATION
442281	PETR	TROMMALD FORMATION
442282	PETL	TROUT LAKE FORMATION
442200	PEUD	EARLY PROTEROZOIC ROCKS UND.
442283	PEVR	VIRGINIA FORMATION
442284	PEWR	WARMAN GRANITE
442285	PEGU	E.PROTEROZOIC GRANITE PLUTON
442286	PEYV	PROTEROZOIC BASALT DIKES

Precambrian (Middle Proterozoic)
[equivalent to old PY-- codes]

442331	PMBB	BEAVER BAY COMPLEX
442332	PMCV	CHENGWATANA VOLCANIC GROUP
442302	PMDC	DULUTH COMPLEX
442322	PMDA	DULUTH CPLX-ANORTH.SERIES
442311	PMDF	DULUTH CPLX-FELSIC SERIES
442321	PMDT	DULUTH CPLX-TROCT.SERIES
442343	PMFL	FOND DU LAC FORMATION
442303	PMHF	HINCKLEY-FOND DU LAC
442304	PMHN	HINCKLEY SANDSTONE
442301	PMLG	LOGAN INTRUSIONS
442305	PMNP	NOPEMING SANDSTONE
442341	PMNS	NORTH SHORE VOLCANIC GROUP
442306	PMPK	PUCKWUNGE FORMATION
442307	PMRC	RED CLASTIC SERIES
442276	PMSX	SIOUX QUARTZITE
442308	PMSC	SOLOR CHURCH FORMATION
442309	PMPR	PIGEON RIVER INTRUSIONS
442300	PMUD	MIDDLE PROTEROZOIC ROCKS UND.
442342	PMVU	KEWEENAWAN VOLCANICS UND.
442310	PMSU	MID.PROTEROZOIC SEDIMENTARY

Miscellaneous codes

440040	AQUI	NON-SPECIFIED AQUIFER UNIT
440041	BRAQ	NON-SPEC. BEDROCK AQUIFER
440042	QUAQ	NON-SPEC. QUATERNARY AQUIFER
440043	QBAA	QUAT. BURIED ARTES. AQUIFER
440044	QBPA	QUAT. BURIED PERCHED AQUIFER
440045	QBUA	QUAT. BURIED UNCONF. AQUIFER

440046	QTTA	QUAT. AQUITARD
440047	QWPA	QUAT. PERCHED AQUIFER
440048	QWTA	QUAT. WATER TABLE AQUIFER
440049	MTPL	MULTIPLE AQUIFER
442190	UREG	WEATHERING RESIDUUM