WELL DATA COMPILED BY BEDROCK UNIT, PLATE 3 of 7

by

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Symbol	Formation	Description	# of Wells	Mean GPM	St. Dev. GPM	Max GPM	Mean Depth	St. Dev. Depth	Max Depth	GPM/FT
?Ccg	Bull Hill Ggeiss	gneiss	310	11	19	200	289	140	855	0.040
?Ccm	Cavendish Fm.	buff dolomite	65	14	28	200	291	159	805	0.048
?Ccr	Readsboro member	quartz-muscovite schist	491	14	24	250	305	147	1200	0.047
Cbh	Bridgeman Hill Fm.	dolomite, slate and conglomerate	133	13	20	150	291	153	627	0.046
Cbr	Brezee Fm.	black phyllite with limestone and dolomite	495	12	15	100	344	176	900	0.036
Cbrc	Brezee Fm.	quartzose green phyllite	50	11	11	50	371	183	805	0.030
Cc	Cheshire	vitreous quartzite and phyllitic quartzite	1951	17	28	600	257	127	1007	0.065
Ccs	Clarendon Springs, Ticonderoga, and Rock River	gray dolomite with knots of white quartz	951	17	26	500	304	167	999	0.056
Cd	Dunham dolomite	buff-weathered siliceous dolomite	1041	18	33	1041	291	157	1275	0.063
Cda	Potsdam & Danby Fm.	interbedded quartzite and dolomite	436	17	27	200	320	165	960	0.055
Cdt	Dalton Fm.	schistose quartzite	212	14	19	150	270	122	865	0.054
Cf	Forestdale marble	marble	77	16	18	100	273	146	805	0.059
Ch	Hazens Notch Fm.	schist and gneiss	1	14			180			0.078
Chb, Chg	Belvidere Mtn. member	amphibolite and greenstone	34	16	21	100	230	119	600	0.069
Chm	Hazens Notch Fm.	magnetite schist member	135	13	17	100	235	122	765	0.053
Cho	Hoosac Fm.	albite porphyroblast schist	1826	13	22	300	300	148	1600	0.043
Chog	Hoosac Fm.	greenstone	63	11	15	100	301	171	940	0.037
Chop	Plymouth member	quartzite, dolomitic quartzite, & phyllite	221	15	21	200	284	133	822	0.052
Cht	Turkey Mtn. member	amphibolite and greenstone	66	10	18	100	312	135	620	0.031
Chw	Hatch Hill & W. Castleton Fm.	calcareous quartzite & slate	293	12	17	100	351	192	900	0.034
Cm	Monkton quartzite	interlayered red and buff quartzites with dolomite	1257	17	28	400	317	171	1205	0.055
Cmo	Moosalamoo phyllite	black phyllite	17	29			215			0.134
Co	Ottauquechee Fm.	black carbonaceous schist and phyllite with quartzite	1962	12	16	150	257	136	950	0.047
Cog	Ottauquechee Fm.	greenstone and amphibolite	19	4	4	15	356	199	1000	0.011
Cp	Pinnacle Fm.	schistose greywacke, schist, & conglomerate	3826	11	21	600	351	174	1475	0.030
Cpa	Parker slate	micaceous shale & slate	173	19	24	150	267	155	840	0.071
Cpc, Ch	Pinney Hollow & Hazens Notch	carbonaceous phyllite & schist	3287	12	24	725	285	141	1222	0.042
Cpg	Pinney Hollow	greenstone	78	14	18	100	275	142	765	0.050
Cpgc	Chester amphibolite	amphibolite & hornblende schist	215	10	12	100	275	135	705	0.035
Cph	Pinney Hollow	pale green phyllite with magnetite	1565	11	15	150	297	152	1480	0.037
Cpt	Tibbit Hill volcanic member	greenstone	471	17	26	200	278	140	801	0.061
Crb	Rugg Brook Fm.	gray dolomite & conglomerate	221	12	18	200	284	129	720	0.042
Cs	Sweetsburg Fm.	black carbonaceous slate	118	12	17	100	247	150	660	0.049
Csa	St Albans slate member	black or tan micaceous slate	108	13	20	150	322	155	708	0.041
Csb	Saxe Brook dolomite	dolomite and dolomitic sandstone	43	15	15	60	247	108	506	0.059
Csc	St. Catherine Fm.	variegated slate & phyllite with quartzite beds	2382	9	14	200	366	187	1765	0.026
Cscb	Bomoseen graywacke member	green arkose & graywacke	142	11	17	100	374	185	850	0.029
Cscz	Zion Hill quartzite member	vitreous quartzite& graywacke	19	10	11	40	328	207	800	0.030
Csh	Hungerford slate member	black slate	166	16	21	100	304	179	771	0.053
Csr	Rockledge conglomerate member	limestone conglomerate	68	16	26	150	318	140	720	0.050
Cssm	Skeels Corner slate & Mill River conglomerate	black slate, dolomitic sandstone & conglomerate	996	17	25	200	304	153	1150	0.057
Ct	Tyson Fm.	schist, boulder conglomerate and dolomite	174	17	20	150	293	179	1100	0.057
Cu	Underhill Fm.	gray-green schist	3437	13	27	1000	325	162	1222	0.040
Cua	Mt Abraham member	silvery schist	16	10	9	30	471	171	700	0.022
Cub	Battelle member	carbonaceous schist	7	13	12	30	291	73	423	0.045
Cuc	Carbonaceous schist member	carbonaceous schist	73	9	10	45	276	136	725	0.032
Cuf	Forestdale member	sandy dolomite	13	8	6	20	369	162	675	0.021
Cufb	Foot Brook member	sericite schist	44	9	11	60	267	119	524	0.033
Cufp	Fairfield Pond member	quartzitic schist and phyllite	1966	7	16	200	429	208	1700	0.017
Cug	greenstone member	greenstone	70	13	16	75	334	205	1125	0.039
Cuj	Jay Peak member	silver green schist	19	18	17	60	249	115	554	0.072
Cup	Peaked Mtn. member	greenstone	5	7	7	20	334	133	585	0.020
Cuw	White Brook member	sandy dolomite	16	23	30	100	332	158	720	0.070
Cw	Winooski dolomite	dolomite	1150	18	29	339	308	157	1050	0.060
Dg	Gile Mtn. Fm.	gray phyllite, schist, quartzite and micaceous limestone	7294	12	19	500	291	139	1202	0.040
Dga	Amphibolite member	amphibolite	11	12	10	30	215	129	505	0.055
Dgh	Hall Stream member	feldspathic grit & amphibolite	5	23	20	60	206	44	280	0.112
Dgm	Meetinghouse slate member	gray slate or phyllite	314	7	12	112	337	153	860	0.021
Dl	Littleton Fm.	gray slate and phyllites	992	5	11	150	331	159	1545	0.016
Dsn	Northfield Fm.	gray slate or phyllite, some limestone beds	746	15	35	703	234	115	704	0.063
Dw	Waits River Fm.	quartzose, micaceous limestone & quartz-muscovite schist	15338	17	25	1200	258	137	1460	0.064
Dwa	Ayers Cliff limestone member	siliceous crystalline limestone	398	17	26	300	302	145	875	0.057
Dwb	Barton River member	interbedded limestone & phyllite	107	14	20	100	310	118	655	0.046
Dwc	Crow Hill member	quartzite	39	20	25	100	239	146	600	0.082
Dws	Standing Pond volcanic member	amphibolite & garnet schist	806	13	19	200	275	148	860	0.046
hu	Highlandcroft plutonic series	undifferentiated granitic rocks	97	15	23	100	283	140	645	0.052
nhb	Bethlehem gneiss	two mica granodiorite gneiss	2	8	7	15	370	130	500	0.022
nhd	NH series plutonics	metadiorite dikes & sills	10	3			450			0.007
nhu	NH series plutonics	undifferentiated granitic rocks	1858	19	29	735	265	144	1025	0.072
Oa	Ammonoosuuc volcanics	biotite gneiss, greenstone, and amphibolite	84	10	13	70	272	98	505	0.035
Oal	Albee Fm.	quartzite, feldspathic quartzite, gray slates and phyllites	1293	11	16	150	256	131	1020	0.042
Ob	Bascom Fm.	interbedded limestone, dolomite, and marble	1282	20	28	303	317	169	1100	0.063
Obb	Brownell Mtn. phyllite member	calcareous phyllite	23	35	32	100	349	135	620	0.099
Oc	Cutting Fm.	massive gray dolomite with dolomitic sandstone	358	19	26	165	343	165	1001	0.054
Ocb	Burchards member	gray limestone	63	15	23	150	367	200	1100	0.040
Ocbe	Beldens member	interbedded dolomite, marble and limestone	387	15	23	150	377	205	1200	0.039
Ocbr	Bridport dolomite member	dolomite	203	18	25	150	340	178	850	0.054
Och	Cumberland Head Fm.	black, calcareous shale	80	13	18	100	264	125	622	0.050
OCs	Stowe Fm.	quartz-sericite-chlorite phyllite and schist	2136	16	24	320	242	122	1102	0.064
OCsc	Stowe Fm.	carbonaceous schist and phyllite	11	11	13	45	244	121	454	0.046
OCsg	Stowe Fm.	greenstone and amphibolite	1217	16	20	300	216	108	799	0.073
OCu	Pinney Hollow, Ottauquechee & Stowe Fm.	schist, carbonaceous schist, amphibolite & quartzite	161	11	14	100	256	123	697	0.041
Ocw	Weybridge member	gray limestone	111	10	15	100	409	183	1025	0.025
Ogl	Larrabee member	shaly limestone	71	11	14	65	240	141	735	0.047
Ogo	Orwell, Isle LaMotte, & Lowville limestones	thinly and thickly bedded limestones	91	13	16	65	332	179	925	0.039
Ogs	Shoreham member	interbedded limestone & shale	50	8	10	48	245	139	705	0.032
Oh	Hortonville Fm.	black carbonaceous pyritic slate & phyllite	747	10	19	300	384	198	945	0.025
Oha	Hathaway Fm.	black argillite & chert	4	2			417			0.005
Ohg	Hortonville, Cumberland Head & Glens Falls Fm.	slate, phyllite and limestone	785	12	24	300	401	238	1525	0.031
Ohi	Highgate Fm.	blue limestone and slate	61	16	22	150	305	151	802	0.051
Oi	Iberville Fm.	interbedded non-calcareous & calcareous shale	916	9	15	150	306	176	1048	0.030
Omb	Barnard volcanic member	biotite gneiss, hornblende gneiss, & amphibolite	982	13	16	200	232	125	835	0.057
Omc	phyllite member	carbonaceous phyllite & slate	446	13	15	100	225	121	800	0.056
Omco	Coburn Hill volcanic member	greenstone & amphibolite	93	17	24	100	288	147	825	0.057
Omcr	Cram Hill member	phyllite & slate with volcanics	69	16	18	100	257	141	750	0.061
Omh	Mt. Hamilton Fm.	black, gray,green, purple, and red slates	329	11	14	100	342	167	900	0.032
Omhb	Harlow Bridge quartzite member	buff to green quartzite & phyllite	50	14	22	100	242	111	549	0.059
Omi	Middlebury & Chazy limestones	blue gray limestone & dolomite	268	15	28	200	418	215	1200	0.037
Omic	Crown Point member	limestone	184	17	28	150	320	173	800	0.053
Omid	Day Point member	calcareous sandstone & dolomitic siltstone	45	17	25	150	253	151	798	0.069
Omiv	Valcour member	dark gray calcarenite & limestone	72	16	23	100	224	117	520	0.072
Oml	Morse's Line Fm.	calcareous and non-calcareous slate	496	15	29	435	293	166	921	0.052
Omm	Moretown member	"pinstriped" quartzite, quartz-plagioclase granulite, & phyllite	3464	12	17	402	238	117	1090	0.050
Omu	Umbrella Hill member	quartz and slate pebble phyllitic conglomerate	7	10	16	45	367	158	549	0.028
Omw	Whetstone Hill member	carbonaceous gray phyllite & schist	212	13	15	100	261	124	905	0.051
Oo	Orwell limestone	ashen gray limestone	181	9	14	75	358	228	1200	0.026
Oof	Orfordville Fm.	carbonaceous phyllite & quartzite	173	8	15	150	375	169	1005	0.021
Oop	Post Pond volcanics	greenstone & schist	406	12	22	300	329	167	997	0.036
Oor	Root Pond quartzite	massive quartz sandstone	0							
Oos	Sunday Mtn. volcanics	greenstone and schist	30	4	7	30	456	150	1005	0.008
Op	Partridge Fm.	gray carbonaceous slate & phyllite	247	6	10	80	315	151	1000	0.019
Opa	Pawlet Fm.	black, micaceous silty slate	250	10	11	80	316	173	965	0.030
Opv	Partridge volcanics	gneiss & amphibolite	9	7	6	15	322	173	727	0.021
Os	Shelburne,Whitehall, and Strites Pond Fm.	marble & limestone	1067	18	24	300	313	160	1000	0.058
Osp	Stoney Point Fm.	calcareous black shale & argillaceous limestone	1189	9	18	200	350	203	1300	0.026
ou	Oliverian plutonic series	biotite quartz diorite gneiss	283	9	11	80	273	118	800	0.033
pC	Mt. Holly complex	fine to medium-grained biotitic gneiss	7223	14	22	305	284	143	1465	0.049
pCg	undifferentiated pC rocks	gneiss, quartz monzonite, & granodiorite	44	10	14	433.5	339	104	645	0.029
pCgn	un-named	gneiss & quartzite	2	3	3	5	403	153	555	0.006
pCm	Mt. Holly complex	marble and dolomite	25	15	14	50	251	96	425	0.061
pCsg	Stanford gneiss	granitic biotite gneiss	49	7	7	30	312	147	680	0.022
pCsq	Mt. Holly complex	quartzite	804	13	19	200	320	169	1005	0.041
Sc	Clough Fm.	quartzite, quartz conglomerate, & mica schist	26	6	6	20	312	194	1000	0.018
Sf	Fitch Fm.	sandy limestone	20	10	22	100	421	160	750	0.024
Ss	Shaw Mtn. Fm.	quartzite, quartzose limestone, quartz conglomerate, & schist	32	11	18	100	258	100	472	0.044
udp, us, uu	Ultramafic rocks	serpentinized dunite, peridotite, & talc-carbonate rock	57	15	17	100	229	124	540	0.064
wd, we, wg, wle, ws, wv	White Mountain Series	gabbros and diorites	29	13	17	60	292	161	700	0.044

THIS MAP AND DATA ARE A SUMMARY OF WATER WELL DATA COMPILED BY VARIOUS GEOLOGIC FEATURES.
THE MAP IS NOT PROBABALISTIC AND SHOULD NOT BE USED TO PREDICT YIELD OR DEPTH VALUES IN SPECIFIC LOCATIONS.

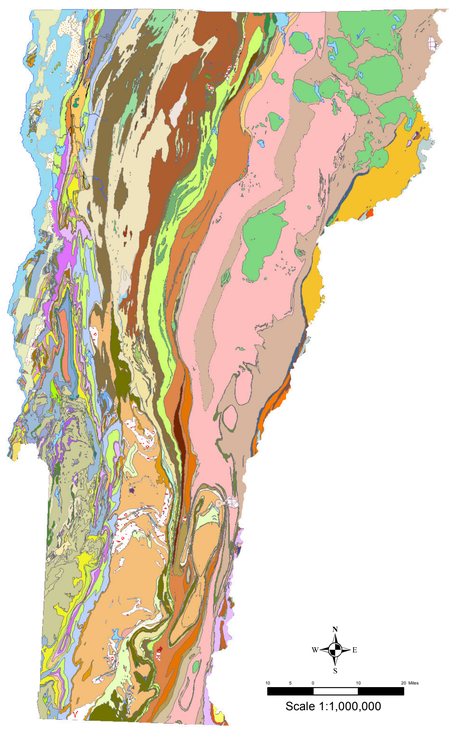
Data and data sources

Number of wells: 92,315
Number of located wells: 10,807
Mean yield, all wells: 13.76 gpm
Median yield, all wells: 6 gpm
Maximum yield, all wells: 1200 gpm
Mean depth, all wells: 293.02 ft.
Median depth, all wells: 260 ft.
Maximum depth, all wells: 1765 ft

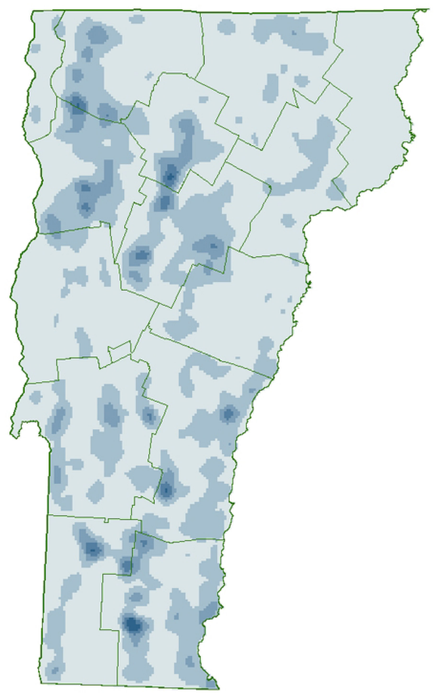
The data points used to calculate values for each bedrock unit are from the Vermont Dept. of Environmental Conservation Water Supply Division (WSD) well driller database.
The location of the data points is from 1) well driller maps and written descriptions, 2) E911 addresses (3100 wells), and 3) GPS measurements (7707 wells).
Of the 92,315 wells, most are completed in bedrock, although many have no entry in the "well type" data field. Some corrections were made to the database where numerical errors were obvious and could be reconciled with a driller report.
Some yield data may be inflated due to the difficulty of measuring high yield wells.
Point density is shown in shades of blue, with deeper shades reflecting higher point density.

Bedrock map units are from the USGS digital data of the 1961 Centennial Geologic Map of Vermont, scale 1:250,000.
Reference:
USGS Open-File Report 2006-1272
Preliminary Integrated Geologic Map Databases for the United States: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, Rhode Island and Vermont
http://pubs.usgs.gov/of/2006/1272/

Brief unit descriptions were provided by the Vermont Geological Survey.



Centennial Geologic Map of Vermont, C. Doll, 1961



Distribution of data points, Vermont

Point density of 92,315 wells is shown in shades of blue, with deeper shades reflecting higher point density.

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