

1 **R655. Natural Resources, Water Rights.**

2 **R655-4. Water Wells-Drillers.**

3 **R655-4-1. Purpose, Scope, and Exclusions.**

4 1.1 Purpose.

5 Under Subsection 73-2-1(4)(b), the State Engineer, as the  
6 Director of the Utah Division of Water Rights, is required to make  
7 rules regarding well construction and related regulated activities  
8 and the licensing of water well drillers and pump installers.

9 These rules are promulgated pursuant to Section 73-3-25.  
10 The purpose of these rules is to assist in the orderly  
11 development of underground water; insure that minimum  
12 construction standards are followed in the drilling,  
13 construction, deepening, repairing, renovating, cleaning,  
14 development, pump installation/repair, and abandonment of water  
15 wells and other regulated wells; prevent pollution of aquifers  
16 within the state; prevent wasting of water from flowing wells;  
17 obtain accurate records of well construction operations; and  
18 insure compliance with the state engineer's authority for  
19 appropriating water.

20 These rules also establish administrative procedures for  
21 applications, approvals, hearings, notices, revocations, orders  
22 and their judicial review, and all other administrative procedures  
23 required or allowed by these rules. These rules shall be  
24 liberally construed to permit the Division to effectuate the  
25 purposes of Utah law.

26 ~~All administrative procedures involving applications,~~  
27 ~~approvals, hearings, notices, revocations, orders and their~~  
28 ~~judicial review, and all other administrative procedures required~~  
29 ~~or allowed by these rules are governed by R655-6 "Administrative~~  
30 ~~Procedures for Informal Proceedings Before the Division of Water~~  
31 ~~Rights".~~

32 1.2 Scope.

33 The drilling, construction, deepening, repair, renovation,  
34 replacement, cleaning, development, or abandonment of the  
35 following types of wells is regulated by these administrative  
36 rules and the work must be permitted by the Utah Division of Water  
37 Rights and completed by a licensed well driller. Moreover, the  
38 installation and repair of pumps for compensation in the following  
39 types of wells is regulated by these administrative rules and the  
40 work must be completed by a licensed well driller or a licensed  
41 pump installer. A person conducting pump installation and repair  
42 work on their own well on their own property is exempt from these  
43 rules and is not required to have a pump installer's license.

44 These rules apply to both vertical, angle and horizontal wells if  
45 they fall within the criteria listed below. The rules contained  
46 herein pertain only to work on or within the well itself. These  
47 rules do not regulate the incidental work ~~around~~ beyond the well  
48 such as ~~pump and motor installation and repair;~~ plumbing,  
49 electrical, and excavation work up to the well; and the building  
50 of well enclosures unless these activities directly impact or  
51 change the construction of the well itself. The process for an  
52 applicant to obtain approval to drill, construct, deepen, repair,  
53 renovate, clean, develop, abandon, or replace the wells listed  
54 below in 1.2.1, 1.2.2, 1.2.3, and 1.2.4 is outlined in Section

55 R655-4-~~97~~ of these rules.

56 1.2.1 Cathodic protection wells which are completed to a  
57 depth greater than 30 feet.

58 1.2.2 Closed-loop and open-loop Heating and/or cooling  
59 exchange wells which are greater than 30 feet in depth and which  
60 encounter formations containing groundwater. If a separate well  
61 or borehole is required for re-injection purposes, it must also  
62 comply with these administrative rules.

63 1.2.3 Monitor, piezometer, and test wells designed for the  
64 purpose of testing and monitoring water level, pressure, quality  
65 and/or quantity which are completed to a depth greater than 30  
66 feet.

67 1.2.4 Other wells (cased or open) which are completed to a  
68 depth greater than 30 feet that can potentially interfere with  
69 established aquifers such as wells to monitor mass movement  
70 (inclinometers), facilitate horizontal utility placement, monitor  
71 man-made structures, house instrumentation to monitor structural  
72 performance, or dissipate hydraulic pressures (dewatering wells).

73 1.2.5 Private water production wells which are completed to  
74 a depth greater than 30 feet.

75 1.2.6 Public water system supply wells.

76 1.2.7 Recharge and recovery wells which are drilled under  
77 the provisions of Title 73, Chapter 3b "Groundwater Recharge and  
78 Recovery Act" Utah Code Annotated.

79 1.3 Exclusions.

80 The drilling, construction, deepening, repair, renovation,  
81 replacement, cleaning, development, pump installation/repair, or  
82 abandonment of the following types of wells or boreholes are  
83 excluded from regulation under these administrative rules:

84 1.3.1 Any wells described in Section 1.2 that are  
85 constructed to a final depth of 30 feet or less. However,  
86 diversion and beneficial use of groundwater from wells at a depth  
87 of 30 feet or less shall require approval through the  
88 appropriation procedures and policies of the state engineer and  
89 Title 73, Chapter 3 of the Utah Code Annotated.

90 1.3.2 Geothermal wells. Although not regulated under the  
91 Administrative Rules for Water Wells ~~s-Drillers~~, geothermal wells  
92 are subject to Section 73-22-1 "Utah Geothermal Resource  
93 Conservation Act" Utah Code Annotated and the rules promulgated by  
94 the state engineer including Section R655-1, Wells Used for the  
95 Discovery and Production of Geothermal Energy in the State of  
96 Utah.

97 1.3.3 Temporary exploratory wells drilled to obtain  
98 information on the subsurface strata on which an embankment or  
99 foundation is to be placed or an area proposed to be used as a  
100 potential source of material for construction.

101 1.3.4 Wells or boreholes drilled or constructed into non-  
102 water bearing zones or which are 30 feet or less in depth for the  
103 purpose of utilizing heat from the surrounding earth.

104 1.3.5 Geotechnical borings drilled to obtain lithologic data  
105 which are not installed for the purpose of utilizing or monitoring  
106 groundwater, and which are properly sealed immediately after  
107 drilling and testing.

108 1.3.6 Oil, gas, and mineral exploration/production wells.

109 These wells are subject to rules promulgated under the Division of  
110 Oil, Gas, and Mining of the Utah Department of Natural Resources.  
111

112 **R655-4-2. Definitions.**

113 ABANDONED WELL - any well which is not in use and has been  
114 sealed or plugged with approved sealing materials so that it is  
115 rendered unproductive and ~~will~~shall prevent contamination of  
116 groundwater. A properly abandoned well will not produce water nor  
117 serve as a channel for movement of water from the well or between  
118 water bearing zones.

119 "ADDRESS" means the current residential or business address  
120 of a well driller as recorded in the Division's files.

121 "ADJUDICATIVE PROCEEDING" means, for the purposes of this  
122 rule, an administrative action or proceeding commenced by the  
123 Division in conjunction with an Infraction Notice; or an  
124 administrative action or proceeding commenced in response to a  
125 well driller's appeal or a Cease and Desist Order or an appeal of  
126 a restriction or denial of a license renewal application.

127 AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) - a nationally  
128 recognized testing laboratory that certifies building products and  
129 adopts standards including those for steel and plastic (PVC)  
130 casing utilized in the well drilling industry. ANSI standards are  
131 often adopted for use by ASTM and AWWA. Current information on  
132 standards can be obtained from: ANSI, 1430 Broadway, New York, NY  
133 10018 (ANSI.org).

134 AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) - an  
135 independent organization concerned with the development of  
136 standards on characteristics and performance of materials,  
137 products and systems including those utilized in the well drilling  
138 industry. Information may be obtained from: ASTM, 1916 Race  
139 Street, Philadelphia, PA 19013 (ASTM.org).

140 AMERICAN WATER WORKS ASSOCIATION (AWWA) - an international  
141 association which publishes standards intended to represent a  
142 consensus of the water supply industry that the product or  
143 procedure described in the standard ~~will~~shall provide  
144 satisfactory service or results. Information may be obtained  
145 from: AWWA, 6666 West Quincy Avenue, Denver CO 80235 (AWWA.org).

146 ANNULAR SPACE - the space between the outer well casing and  
147 the borehole or the space between two sets of casing.

148 AQUIFER - a porous underground formation yielding  
149 withdrawable water suitable for beneficial use.

150 ARTESIAN AQUIFER - a water-bearing formation which contains  
151 underground water under sufficient pressure to rise above the zone  
152 of saturation.

153 ARTESIAN WELL - a well where the water level rises  
154 appreciably above the zone of saturation.

155 BACKFLOW PREVENTER - means a safety device, assembly, or  
156 construction practice used to prevent water pollution or  
157 contamination by preventing flow of a mixture of water and/or  
158 chemicals from the distribution piping into a water well or in  
159 the opposite direction of that intended. This includes but is  
160 not limited to check valves, foot valves, curb stops, or air gaps

161 BENTONITE - a highly plastic, highly absorbent, colloidal  
162 swelling clay composed largely of mineral sodium montmorillonite.

163 Bentonite is commercially available in powdered, granular,  
164 tablet, pellet, or chip form which is hydrated with potable water  
165 and used for a variety of purposes including the stabilization of  
166 borehole walls during drilling, the control of potential or  
167 existing high fluid pressures encountered during drilling below a  
168 water table, well abandonment, and to provide a seal in the  
169 annular space between the well casing and borehole wall.

170 BENTONITE GROUT - a mixture of bentonite and potable water  
171 specifically designed to seal and plug wells and boreholes mixed  
172 at manufacturer's specifications to a grout consistency which can  
173 be pumped through a pipe directly into the annular space of a well  
174 or used for abandonment. Its primary purpose is to seal the  
175 borehole or well in order to prevent the subsurface migration or  
176 communication of fluids.

177 CASH BOND - A type of well driller bond in the form of a  
178 certificate of deposit (CD) submitted and assigned to the State  
179 Engineer by a licensed driller to satisfy the required bonding  
180 requirements.

181 CASING - a tubular retaining and sealing structure that is  
182 installed in the borehole to maintain the well opening.

183 CATHODIC PROTECTION WELL - a well constructed for the purpose  
184 of installing deep anodes to minimize or prevent electrolytic  
185 corrosive action of metallic structures installed below ground  
186 surface, such as pipelines, transmission lines, well casings,  
187 storage tanks, or pilings.

188 "CEASE AND DESIST ORDER" means an order issued by the State  
189 Engineer comprised of a red tag placed on a well rig at the well  
190 drilling location and a letter to the driller requiring that all  
191 well drilling activity at the well drilling location cease until  
192 such time as the order is lifted.

193 CLOSED-LOOP HEATING/COOLING EXCHANGE WELL - means the  
194 subsystem of a geothermal heat pump system that consists of the  
195 drilled vertical borehole into the Earth that is equipped with a  
196 heat exchange media conveyance tube (loop tube), and is grouted  
197 from the bottom of the vertical borehole to the Earth's surface  
198 at the drilling site. Construction of a geothermal heat pump loop  
199 well includes, in continuous order, drilling of the vertical  
200 borehole, placement of the loop tube to the bottom of the  
201 vertical borehole with the grout tremie, and grouting of the  
202 vertical borehole from the bottom of the vertical borehole to the  
203 Earth's surface at the drill site. Closed loop systems circulate  
204 a heat transfer fluid (such as water or a mixture of water and  
205 food grade/non-toxic anti-freeze) to exchange heat with the  
206 subsurface geological environment.

207 CONDUCTOR CASING - means the temporary or permanent casing  
208 used in the upper portion of the well bore to prevent collapse of  
209 the formation during the construction of the well or to conduct  
210 the gravel pack to the perforated or screened areas in the  
211 casing.

212 CONFINING UNIT - a geological layer either of unconsolidated  
213 material, usually clay or hardpan, or bedrock, usually shale,  
214 through which virtually no water moves.

215 CONSOLIDATED FORMATION - bedrock consisting of sedimentary,  
216 igneous, or metamorphic rock (e.g., shale, sandstone, limestone,

217 quartzite, conglomerate, basalt, granite, tuff, etc.).

218 "DEFAULT ORDER" means an order issued by the Presiding  
219 Officer after a well driller fails to attend a hearing in a well  
220 driller adjudicative proceeding. A Default Order constitutes a  
221 Final Judgment and Order.

222 DEWATERING WELL - a water extraction well constructed for the  
223 purpose of lowering the water table elevation, either temporarily  
224 or permanently, around a man-made structure or construction  
225 activity.

226 DISINFECTION - or disinfecting is the use of chlorine or  
227 other disinfecting agent or process approved by the state  
228 engineer, in sufficient concentration and contact time adequate to  
229 inactivate or eradicate bacteria such as coliform or other  
230 organisms.

231 "DIVISION" means the Division of Water Rights. The terms  
232 Division and State Engineer may be used interchangeably in this  
233 rule.

234 DRAWDOWN - the difference in elevation between the static  
235 water level and the pumping water level in a well.

236 DRILL RIG - any power-driven percussion, rotary, boring,  
237 coring, digging, jetting, or augering machine used in the  
238 construction of a well or borehole.

239 EMERGENCY SITUATION - any situation where immediate action is  
240 required to protect life or property. Emergency status would also  
241 extend to any situation where life is not immediately threatened  
242 but action is needed immediately and it is not possible to contact  
243 the state engineer for approval. For example, it would be  
244 considered an emergency if a domestic well needed immediate repair  
245 over a weekend when the state engineer's offices are closed.

246 "FILES" means information maintained in the Division's public  
247 records, which may include both paper and electronic information.

248 "FINAL JUDGMENT AND ORDER" means a final decision issued by  
249 the Presiding Officer on the whole or a part of a well driller  
250 adjudicative proceeding. This definition includes "Default  
251 Orders."

252 GRAVEL PACKED WELL - a well in which filter material such as  
253 sand and/or gravel is placed in the annular space between the well  
254 intakes (screen or perforated casing) and the borehole wall to  
255 increase the effective diameter of the well and to prevent fine-  
256 grained sediments from entering the well.

257 GROUNDWATER - subsurface water in a zone of saturation.

258 GROUT - a fluid mixture of Portland cement or bentonite with  
259 water of a consistency that can be forced through a pipe and  
260 placed as required. Upon approval, various additives such as  
261 sand, bentonite, and hydrated lime may be included in the mixture  
262 to meet different requirements.

263 HEATING/COOLING EXCHANGE SYSTEM - also known as geexchange,  
264 ground-source heat pump, geothermal heat pump, and ground-coupled  
265 heat pump; a heat pump that uses the Earth itself as a heat  
266 source (heating) and heat sink (cooling). It is coupled to the  
267 ground by means of a closed loop heat exchanger installed  
268 vertically underground or by physically pumping water from a well  
269 with an open loop systems and utilizing the thermal properties of  
270 the water to heat or cool.

271 HYDRAULIC FRACTURING - the process whereby water or other  
272 fluid is pumped with sand under high pressure into a well to  
273 fracture and clean-out the rock surrounding the well bore thus  
274 increasing the flow to the well.

275 "INFRACTION NOTICE" means a notice issued by the Division to  
276 the well driller informing him of his alleged act or acts  
277 violating the Administrative Rules for Water Drillers and the  
278 infraction points that have been assessed against him.

279 "ISSUED" means a document executed by an authorized delegate  
280 of the State Engineer (in the case of an Infraction Notice) or by  
281 the Presiding Officer (in the case of a Hearing Notice, Final  
282 Judgment and Order or other order related to a well driller  
283 adjudicative proceeding) and deposited in the mail.

284 "LICENSE" means the express grant of permission or authority  
285 by the State Engineer to carry on the activity of well drilling.

286 LICENSED PUMP INSTALLER - means a qualified individual who  
287 has obtained a license from the Division and who is engaged in  
288 the installation, removal, alteration, or repair of pumps and  
289 pumping equipment for compensation.

290 LOG - means an official document or report that describes  
291 where, when, and how a regulated well was drilled, constructed,  
292 deepened, repaired, renovated, cleaned, developed, tested,  
293 equipped with pumping equipment, and/or abandoned. A Log shall  
294 be submitted to the Division by a licensee on forms provided by  
295 the Division including a Well Driller's Report, Well Abandonment  
296 Report, or Pump Installer's Report.

297 MONITOR WELL - a well, as defined under "well" in this  
298 section, that is constructed for the purpose of determining water  
299 levels, monitoring chemical, bacteriological, radiological, or  
300 other physical properties of ground water or vadose zone water.

301 NATIONAL SANITATION FOUNDATION (NSF) - a voluntary third  
302 party consensus standards and testing entity established under  
303 agreement with the U. S. Environmental Protection Agency (EPA) to  
304 develop testing and adopt standards and certification programs for  
305 all direct and indirect drinking water additives and products.

306 Information may be obtained from: NSF, 3475 Plymouth Road, P  
307 O Box 1468, Ann Arbor, Michigan 48106 ([NSF.org](http://NSF.org)).

308 NEAT CEMENT GROUT - cement conforming to the ASTM Standard  
309 C150 (standard specification of Portland cement), with no more  
310 than six gallons of water per 94 pound sack (one cubic foot) of  
311 cement of sufficient weight density of not less than 15  
312 lbs/gallon.

313 NOMINAL SIZE - means the manufactured commercial designation  
314 of the diameter of a casing. An example would be casing with an  
315 outside diameter of 12 3/4 inches which may be nominally 12-inch  
316 casing by manufactured commercial designation.

317 OPEN-LOOP HEATING/COOLING EXCHANGE WELL - means a well  
318 system in which groundwater is extracted from a typical water  
319 production well and pumped through an above ground heat exchanger  
320 inside the heat pump system. Heat is either extracted or added  
321 by the primary refrigerant loop (primary loop refrigerant does  
322 not come into contact with the pumped water), and then the water  
323 is returned to the same aquifer by injection through the original  
324 extraction well or through a separate injection well.



325 OPERATOR - a drill rig operator or pump rig operator is an  
326 individual who works under the direct supervision of a licensed  
327 Utah Water Well Driller or Pump Installer and who can be left in  
328 responsible charge ~~to construct water wells of regulated well~~  
329 drilling or pump installation/repair activity using equipment that  
330 is under the direct control of the licensee.

331 "PARTY" means the State Engineer, an authorized delegate of  
332 the State Engineer, the well driller, the pump installer, or the  
333 affected well owner.

334 PIEZOMETER - a tube or pipe, open at the bottom in  
335 groundwater, and sealed along its length, used to measure  
336 hydraulic head or water level in a geologic unit.

337 PITLESS ADAPTER ~~OR UNIT~~- an commercially manufactured devise  
338 ~~assembly of parts~~-designed for attachment to a well casing which  
339 allows buried pump discharge from the well and allows access to  
340 the interior of the well casing for installation or removal of the  
341 pump or pump appurtenances, while preventing contaminants from  
342 entering the well. Such devices protect the water and  
343 distribution lines from temperature extremes, permit extension of  
344 the casing above ground as required in Subsection R655-4-~~11~~9.3.2  
345 and allow access to the well, pump or system components within the  
346 well without exterior excavation or disruption of surrounding  
347 earth or surface seal.

348 PITLESS UNIT - a factory-assembled device with cap which  
349 extends the upper end of a well casing to above grade and is o  
350 constructed as to allow for buried pump discharge from the well  
351 and allows access to the interior of the well casing for  
352 installation or removal of the pump or pump appurtenances, while  
353 preventing contaminants from entering the well. Such devices  
354 protect the water and distribution lines from temperature  
355 extremes, permit extension of the casing above ground as required  
356 in Subsection R655-4-11.3.2 and allow access to the well, pump or  
357 system components within the well without exterior excavation or  
358 disruption of surrounding earth or surface seal.

359 POLLUTION - the alteration of the physical, thermal,  
360 chemical, or biological quality of, or the contamination of, any  
361 water that renders the water harmful, detrimental, or injurious to  
362 humans, animals, vegetation, or property, or to public health,  
363 safety, or welfare, or impairs the usefulness or the public  
364 enjoyment of the water for any or reasonable purpose.

365 POTABLE WATER - water supplied for human consumption,  
366 sanitary use, or for the preparation of food or pharmaceutical  
367 products which is free from biological, chemical, physical, and  
368 radiological impurities.

369 "PRESIDING OFFICER" means an authorized delegate of the State  
370 Engineer who conducts a well driller adjudicative proceeding.

371 PRESSURE GROUTING - a process by which grout is confined  
372 within the drillhole or casing by the use of retaining plugs or  
373 packers and by which sufficient pressure is applied to drive the  
374 grout slurry into the annular space or zone to be grouted.

375 PRIVATE WATER PRODUCTION WELL - a privately owned well  
376 constructed to supply water for any purpose which has been  
377 approved by the state engineer (such as irrigation, stockwater,  
378 domestic, commercial, industrial, etc.).

379 PROBATION - A disciplinary action that may be taken by the  
380 state engineer that entails greater review and regulation of well  
381 drilling activities but which does not prohibit a well driller  
382 from engaging in the well drilling business or operating well  
383 drilling equipment.

384 PROVISIONAL WELL - authorization granted by the state  
385 engineer to drill under a pending, unapproved water right, change  
386 or exchange application; or for the purpose of determining  
387 characteristics of an aquifer, or the existence of a useable  
388 groundwater source. Water from a provisional well cannot be put  
389 to beneficial use until the application has been approved.

390 PUBLIC WATER SYSTEM SUPPLY WELL - a well, either publicly or  
391 privately owned, providing water for human consumption and other  
392 domestic uses which has at least 15 service connections or  
393 regularly serves an average of at least 25 individuals daily for  
394 at least 60 days out of the year. Public Water System Supply  
395 Wells are also regulated by the Division of Drinking Water in the  
396 Utah Department of Environmental Quality (Section R309 of the Utah  
397 Administrative Code).

398 PUMP/PUMPING EQUIPMENT - means any equipment or materials  
399 utilized or intended for use in withdrawing or obtaining  
400 groundwater for any use.

401 PUMP INSTALLATION/REPAIR - means the procedure employed in  
402 the placement and preparation for operation of pumps and pumping  
403 equipment at the water well location, including all construction  
404 or repair involved in making entrance to the water well, which  
405 involves the breaking of the well seal.

406 PUMPING WATER LEVEL - the water level in a well after a  
407 period of pumping at a given rate.

408 "RECORD" means the official collection of all written and  
409 electronic materials produced in a well driller adjudicative  
410 proceeding, including but not limited to Infraction Notices,  
411 pleadings, motions, exhibits, orders and testimony produced during  
412 the adjudicative proceedings, as well as the files of the Division  
413 as defined herein.

414 "RED TAG" is a component of a "CEASE AND DESIST ORDER" in  
415 the form of a red colored tag placed on a well at a well drilling  
416 location

417 "REGISTRATION" means the express grant of permission or  
418 authority by the State Engineer to carry on the activity of well  
419 drilling or pump installation under the supervision of a licensed  
420 well driller or pump installer.

421 REPAIRING, RENOVATING, & DEEPENING - means the deepening,  
422 hydrofracturing, re-casing, perforating, re-perforating,  
423 installation of packers or seals, and any other material change  
424 in the design or construction of a well. Material changes include  
425 but are not limited to casing installation or modification  
426 including casing extensions, installation or modification of  
427 liner pipe, reaming or under reaming of the borehole, pitless  
428 unit installation or re-sealing.

429 REVOCATION - A disciplinary action that may be taken by the  
430 state engineer that rescinds the well driller's Utah Water Well  
431 Driller's License

432 SAND - a material having a prevalent grain size ranging from



433 2 millimeters to 0.06 millimeters.

434 SAND CEMENT GROUT - a grout consisting of equal parts of  
435 cement conforming to ASTM standard C150 and sand/aggregate with no  
436 more than six (6) gallons of water per 94 pound sack (one cubic  
437 foot) of cement.

438 STANDARD DIMENSION RATIO (SDR) - the ratio of average outside  
439 pipe diameter to minimum pipe wall thickness.

440 STATE ENGINEER - the director of the Utah Division of Water  
441 Rights or any employee of the Division of Water Rights designated  
442 by the state engineer to act in administering these rules. The  
443 terms Division and State Engineer may be used interchangeably in  
444 this rule.

445 STATIC LEVEL - stabilized water level in a non-pumped well  
446 beyond the area of influence of any pumping well.

447 SURETY BOND - an indemnity agreement in a sum certain and  
448 payable to the state engineer, executed by the licensee as  
449 principal and which is supported by the guarantee of a corporation  
450 authorized to transact business as a surety in the State of Utah.

451 SUSPENSION - A disciplinary action that may be taken by the  
452 state engineer that prohibits the well driller from engaging in  
453 the well drilling business or operating well drilling equipment as  
454 a registered operator for a definite period of time and /or until  
455 certain conditions are met.

456 TEST WELL - authorization granted by the state engineer to  
457 drill under a Non-production well approval for the purpose of  
458 determining characteristics of an aquifer, or the existence of a  
459 useable groundwater source. Water from a Test Well cannot be put  
460 to beneficial use.

461 TREMIE PIPE - a device that carries materials such as seal  
462 material, gravel pack, or formation stabilizer to a designated  
463 depth in a drill hole or annular space.

464 UNCONSOLIDATED FORMATION - loose, soft, incoherent rock  
465 material composed of sedimentary, igneous, or metamorphic rock  
466 which includes sand, gravel, and mixtures of sand and gravel.  
467 These formations are widely distributed and can possess good water  
468 storage and transmissivity characteristics.

469 UNHYDRATED BENTONITE - dry bentonite consisting primarily of  
470 granules, tablets, pellets, or chips that may be placed in a well  
471 or borehole in the dry state and hydrated in place by either  
472 formation water or by the addition of potable water into the well  
473 or borehole containing the dry bentonite. Unhydrated bentonite  
474 can be used for sealing and abandonment of wells.

475 VADOSE ZONE - the zone containing water under less than  
476 atmospheric pressure, including soil water, intermediate vadose  
477 water and capillary water. The zone extends from land surface to  
478 the zone of saturation or water table.

479 WATERTIGHT - a condition that does not allow the entrance,  
480 passage, or flow of water under normal operating conditions.

481 WELL - a horizontal or vertical excavation or opening into  
482 the ground made by digging, boring, drilling, jetting, augering,  
483 or driving or any other artificial method and left cased or open  
484 for utilizing or monitoring underground waters.

485 WELL DRILLER - any person who is licensed by the state  
486 engineer to construct water wells for compensation or otherwise.

487 The licensed driller has total responsibility for the construction  
488 work in progress at the well drilling site.

489 WELL DRILLER BOND - A financial guarantee to the state  
490 engineer, in the form of a surety bond or cash bond, by which a  
491 licensed driller binds himself to pay the penal sum of \$5,000 to  
492 the state engineer in the event of significant noncompliance with  
493 the Administrative Rules for Water Wells-Drillers.

494 WELL DRILLING - the act of drilling, constructing, deepening,  
495 replacing, repairing, renovating, cleaning, developing, or  
496 abandoning a well.

497

### 498 **R655-4-3. Licenses and Registrations.**

#### 499 3.1 General.

500 3.1.1 Section 73-3-25 of the Utah Code requires every person  
501 that drills, constructs, ~~deepens, repairs, renovates, cleans,~~  
502 develops, installs/repairs pumps, and abandons a regulated well  
503 in the state to obtain a license from the state engineer.  
504 Licenses and registrations are not transferable. Applicants for  
505 well driller or pump installer licensure must meet the all  
506 requirements in this subsection, and applicants cannot obtain a  
507 Utah license through reciprocity or comity with a similar license  
508 from other States.

509 3.1.2 Any person found to be performing regulated well  
510 activity ~~drilling a well~~ without a valid ~~well driller's~~ license  
511 (well driller's license or pump installer's license, as  
512 applicable) or operator's registration will be ordered to cease  
513 drilling by the state engineer. The order may be made verbally  
514 but must also be followed by a written order. The order may be  
515 posted at an unattended well drilling site. A person found  
516 drilling performing regulated well activities without a license  
517 will be subject to the state engineer's enforcement powers under  
518 Section 73-2-25 of the Utah Code (Related rules: Section R655-14  
519 UAC) and subject to criminal prosecution under Section 73-3-26 of  
520 the Utah Code annotated, 1953.

#### 521 3.2 Well Driller's License.

522 A Utah Well Driller's License allows an individual to perform  
523 regulated well activity including drilling, construction,  
524 deepening, repairing, renovating, cleaning, development, pump  
525 installation/repair, and abandonment of water wells and other  
526 regulated wells. An applicant must meet the following  
527 requirements to become licensed as a Utah Water Well Driller:

528 3.2.1 Applicants must be 21 years of age or older and be a  
529 citizen of the United States, or be lawfully entitled to remain  
530 and work in the United States in accordance with Section 63G-11-  
531 104 UCA (Applicants must file a Division Lawful Presence  
532 Affidavit with the license application);

533 3.2.2 Complete and submit the application form provided by  
534 the state engineer.

535 3.2.3 Pay the application fee approved by the state  
536 legislature.

537 3.2.4 Provide documentation of experience according to the  
538 following standards:

539 3.2.4.1 Water well drillers shall provide documentation of  
540 at least two (2) years of full time prior water well drilling

541 experience with a licensed driller in good standing OR  
542 documentation of sixteen (16) wells constructed by the applicant  
543 under the supervision of a licensed well driller in good standing.

544 3.2.4.2 Monitor well drillers shall provide documentation of  
545 at least two (2) years of full time prior monitor well drilling  
546 experience with a licensed driller in good standing OR  
547 documentation of thirty two (32) wells constructed by the  
548 applicant under the supervision of a licensed well driller in good  
549 standing.

550 3.2.4.3 Heating/cooling exchange and other non-production  
551 well drillers must provide documentation of at least six (6)  
552 months of full time prior well drilling experience with a licensed  
553 driller in good standing AND documentation of sixteen (16) well  
554 drilling projects constructed by the applicant under the  
555 supervision of a licensed well driller in good standing.

556 3.2.4.4 A copy of the well log for each well constructed  
557 must be provided. The documentation must also show the applicant's  
558 experience with each type of drilling rig to be listed on the  
559 license. Acceptable documentation will include registration with  
560 the Division of Water Rights, letters from licensed well drillers  
561 (Utah or other states), or a water well drilling license granted  
562 by another state, etc.

563 3.2.4.5 Successful completion of classroom study in geology,  
564 well drilling, map reading, and other related subjects may be  
565 substituted for up to, but not exceeding, twenty five percent of  
566 the required drilling experience, and for up to, but not  
567 exceeding, twenty five percent of the required drilled wells or  
568 well drilling projects. The state engineer will determine the  
569 number of months of drilling experience and the number of drilled  
570 wells that will be credited for the classroom study.

571 3.2.4.6 A limited or restricted license can be obtained in  
572 subcategories of activity including well cleaning, well  
573 renovation, well abandonment, and well development/testing.  
574 Testing requirements for these license subcategories will be  
575 reduced or limited in accordance with the level of activity.

576 3.2.5 File a well driller bond in the sum of \$5,000 with the  
577 Division of Water Rights payable to the state engineer. The well  
578 driller bond must be filed under the conditions and criteria  
579 described in Section 4-3.96.

580 3.2.6 Obtain a score of at least 70% on each of the written  
581 licensing examinations required and administered by the state  
582 engineer. The required examinations test the applicant's  
583 knowledge of:

584 a. The Administrative Rules for Water Wells~~—Drillers~~ and  
585 Utah water law as it pertains to underground water;

586 b. The minimum construction standards established by the  
587 state engineer for water well construction;

588 c. Geologic formations and proper names used in describing  
589 underground material types;

590 d. Reading maps and locating points from descriptions based  
591 on section, township, and range;

592 e. Groundwater geology and the occurrence and movement of  
593 groundwater;

594 f. The proper operating procedures and construction methods

595 associated with the various types of water well drilling rigs. (A  
596 separate test is required for each type of water well drilling rig  
597 to be listed on the license).

598 3.2.7 Demonstrate proficiency in resolving problem  
599 situations that might be encountered during the construction of a  
600 water well by passing an oral examination administered by the  
601 state engineer.

602 3.3 Drill Rig Operator's Registration.

603 An applicant must meet the following requirements to become  
604 registered as a drill rig operator:

605 3.3.1 Applicants must be 18 years of age or older and be a  
606 citizen of the United States, or be lawfully entitled to remain  
607 and work in the United States in accordance with Section 63G-11-  
608 104 UCA (Applicants must file a Division Lawful Presence  
609 Affidavit with the operator application).

610 3.3.2 Complete and submit the application form provided by  
611 the state engineer.

612 3.3.3 Pay the application fee approved by the state  
613 legislature.

614 3.3.4 Provide documentation of at least six (6) months of  
615 prior water well drilling experience with a licensed driller in  
616 good standing. The documentation must show the applicant's  
617 experience with each type of drilling rig to be listed on the  
618 registration. Acceptable documentation will include letters from  
619 licensed well drillers or registration as an operator in another  
620 state.

621 3.3.5 Obtain a score of at least 70% on a written  
622 examination of the minimum construction standards established by  
623 the state engineer for water well construction. The test will be  
624 provided to the licensed well driller by the state engineer. The  
625 licensed well driller will administer the test to the prospective  
626 operator and return it to the state engineer for scoring.

627 3.4 Pump Installer's License.

628 A Utah Pump Installer's License allows an individual to  
629 perform regulated pump activity for compensation including pump  
630 removal, installation, and repair of water wells and other  
631 regulated wells. An individual can perform pump installation and  
632 repair work on their own well on their own property without  
633 obtaining a Pump Installer's License. An applicant must meet the  
634 following requirements to become licensed as a Utah Pump  
635 Installer:

636 3.4.1 Applicants must be 21 years of age or older and be a  
637 citizen of the United States, or be lawfully entitled to remain  
638 and work in the United States in accordance with Section 63G-11-  
639 104 UCA (Applicants must file a Division Lawful Presence  
640 Affidavit with the license application).

641 3.4.2 Complete and submit the application form provided by  
642 the state engineer.

643 3.4.3 Pay the application fee approved by the state  
644 legislature.

645 3.4.4 Provide documentation of experience of at least two  
646 (2) years of full time prior water well pump installation and  
647 repair experience with a driller or pump installer in good  
648 standing

649 3.4.4.4 The documentation must show the applicant's  
650 experience with each type of pump rig to be listed on the license.  
651 Acceptable documentation will include registration with the  
652 Division of Water Rights, reference letters from licensed well  
653 drillers/pump installers (Utah or other states), or a license  
654 granted by another state, etc.

655 3.4.4.5 Successful completion of classroom study in pump  
656 installation/repair and other related subjects may be substituted  
657 for up to, but not exceeding, twenty five percent of the required  
658 pump experience. The state engineer will determine the number of  
659 months of drilling experience that will be credited for the  
660 classroom study.

661 3.4.5 File a pump installer bond in the sum of \$5,000 with  
662 the Division of Water Rights payable to the state engineer. The  
663 well driller bond must be filed under the conditions and criteria  
664 described in Section 4-3.9.

665 3.4.6 Obtain a score of at least 70% on each of the written  
666 licensing examinations required and administered by the state  
667 engineer. The required examinations test the applicant's  
668 knowledge of:

669 a. The Administrative Rules for Water Wells and Utah water  
670 law as it pertains to underground water;

671 b. The minimum construction standards established by the  
672 state engineer pertaining to pump installation and repair;

673 c. Groundwater protection procedures and standards  
674 applicable to pump installation and repair work on wells;

675 d. The proper operating procedures and methods associated  
676 with pump installation and repair.

677 3.4.7 Demonstrate proficiency in resolving problem  
678 situations that might be encountered during pump installation and  
679 repair of a water well by passing an oral examination administered  
680 by the state engineer.

### 681 3.5 Pump Rig Operator's Registration.

682 An applicant must meet the following requirements to become  
683 registered as a pump rig operator:

684 3.5.1 Applicants must be 18 years of age or older and be a  
685 citizen of the United States, or be lawfully entitled to remain  
686 and work in the United States in accordance with Section 63G-11-  
687 104 UCA (Applicants must file a Division Lawful Presence  
688 Affidavit with the license application).

689 3.5.2 Complete and submit the application form provided by  
690 the state engineer.

691 3.5.3 Pay the application fee approved by the state  
692 legislature.

693 3.5.4 Provide documentation of at least six (6) months of  
694 prior pump installation and repair experience with a licensed  
695 driller or pump installer in good standing. Acceptable  
696 documentation will include letters from licensed well drillers or  
697 registration as an operator in another state.

698 3.5.5 Obtain a score of at least 70% on a written  
699 examination of the minimum construction standards established by  
700 the state engineer for pump installation and repair. The test  
701 will be provided to the licensed pump installer/well driller by  
702 the state engineer. The licensed pump installer/well driller will

703 administer the test to the prospective operator and return it to  
704 the state engineer for scoring.

705 3.64 Conditional, Restricted, or Limited Licenses.

706 The state engineer may issue a restricted, conditional, or  
707 limited license to an applicant based on prior drilling  
708 experience.

709 3.57 Refusal to Issue a License or Registration.

710 The state engineer may, upon investigation and after a  
711 hearing, refuse to issue a license or a registration to an  
712 applicant if it appears the applicant has not had sufficient  
713 training or experience to qualify as a competent well driller,  
714 pump installer, or operator.

715 3.86 Falsified Applications.

716 The state engineer may, upon investigation and after a  
717 hearing, revoke a license or a registration in accordance with  
718 Section 5.6 if it is determined that the original application  
719 contained false or misleading information.

720 3.97 Well Driller Bond.

721 3.97.1 General

722 3.97.1.1. In order to become licensed and to continue  
723 licensure, ~~a~~well drillers and pump installers must file a well  
724 driller bond in the form of a surety bond or cash bond, approved  
725 by the state engineer, in the sum of five thousand dollars  
726 (\$5,000) with the Division of Water Rights, on a form provided by  
727 the Division, which is conditioned upon proper compliance with the  
728 law and these rules and which is effective for the licensing  
729 period in which the license is to be issued. The bond shall  
730 stipulate the obligee as the "Office of the State Engineer". The  
731 well driller bond is penal in nature and is designed to ensure  
732 compliance by the licensed well driller or pump installer to  
733 protect the groundwater resource, the environment, and public  
734 health and safety. The bond may only be exacted by the state  
735 engineer for the purposes of investigating, repairing, or  
736 abandoning wells in accordance with applicable rules and  
737 standards. No other person or entity may initiate a claim against  
738 the well driller bond. Lack of a current and valid well driller  
739 bond shall be deemed sufficient grounds for denial of a  
740 driller's/pump installer's license. The well driller bond may  
741 consist of a surety bond or a cash bond as described below.

742 3.97.2 Surety Bonds.

743 3.97.2.1. The licensee~~d well driller~~ and a surety company or  
744 corporation authorized to do business in the State of Utah as  
745 surety shall bind themselves and their successors and assigns  
746 jointly and severally to the state engineer for the use and  
747 benefit of the public in full penal sum of five thousand dollars  
748 (\$5,000). The surety bond shall specifically cover the licensee's  
749 compliance with the Administrative Rules for Water Wells~~-Drillers~~  
750 found in R655-4 of the Utah Administrative Code. Forfeiture of  
751 the surety bond shall be predicated upon a failure to drill,  
752 construct, repair, renovate, deepen, clean, develop, perform pump  
753 work, or abandon a regulated well in accordance with these rules  
754 (R655-4 UAC). The bond shall be made payable to the 'Utah State  
755 Engineer' upon forfeiture. The surety bond must be effective and  
756 exactable in the State of Utah.



757 3.97.2.2. The bond and any subsequent renewal certificate  
758 shall specifically identify the licensed individual covered by  
759 that bond. The licensee shall notify the state engineer of any  
760 change in the amount or status of the bond. The licensee shall  
761 notify the state engineer of any cancellation or change at least  
762 thirty (30) days prior to the effective date of such cancellation  
763 or change. Prior to the expiration of the 30-days notice of  
764 cancellation, the licensee shall deliver to the state engineer a  
765 replacement surety bond or transfer to a cash bond. If such a  
766 bond is not delivered, all activities covered by the license and  
767 bond shall cease at the expiration of the 30 day period.  
768 Termination shall not relieve the licensee or surety of any  
769 liability for incidences that occurred during the time the bond  
770 was in force.

771 3.97.2.3. Before the bond is forfeited by the licensee  
772 ~~driller~~ and exacted by the state engineer, the licensee ~~driller~~  
773 shall have the option of resolving the noncompliance to standard  
774 either by personally doing the work or by paying to have another  
775 licensed driller do the work. If the driller chooses not to  
776 resolve the problem that resulted in noncompliance, the entire  
777 bond amount of five thousand dollars (\$5,000) shall be forfeited  
778 by the surety and expended by the state engineer to investigate,  
779 repair or abandon the well(s) in accordance with the standards in  
780 R655-4 UAC. Any excess there from shall be retained by the state  
781 engineer and expended for the purpose of investigating, repairing,  
782 or abandoning wells in accordance with applicable rules and  
783 standards. All claims initiated by the state engineer against the  
784 surety bond will be made in writing.

785 3.97.2.4. The bond of a surety company that has failed,  
786 refused or unduly delayed to pay, in full, on a forfeited bond is  
787 not approvable.

### 788 3.97.3 Cash Bonds.

789 3.97.3.1. The requirements for the well driller bond may  
790 alternatively be satisfied by a cash bond in the form of a  
791 certificate of deposit (CD) for the amount of five thousand  
792 dollars (\$5,000) issued by a federally insured bank or credit  
793 union with an office(s) in the State of Utah. The cash bond must  
794 be in the form of a CD. Savings accounts, checking accounts,  
795 letters of credit, etc., are not acceptable cash bonds. The CD  
796 shall specifically identify the licensed individual covered by  
797 that fund. The CD shall be automatically renewable and fully  
798 assignable to the state engineer. CD shall state on its face that  
799 it is automatically renewable.

800 3.97.3.2. The cash bond shall specifically cover the  
801 licensee's compliance with well drilling rules found in R655-4 of  
802 the Utah Administrative Code. The CD shall be made payable or  
803 assigned to the state engineer and placed in the possession of the  
804 state engineer. If assigned, the state engineer shall require the  
805 bank or credit union issuing the CD to waive all rights of setoff  
806 or liens against those CD. The CD, if a negotiable instrument,  
807 shall be placed in the state engineer's possession. If the CD is  
808 not a negotiable instrument, the CD and a withdrawal receipt,  
809 endorsed by the licensee, shall be placed in the state engineer's  
810 possession.

811 3.97.3.3. The licensee shall submit CDs in such a manner |  
812 which will allow the state engineer to liquidate the CD prior to  
813 maturity, upon forfeiture, for the full amount without penalty to  
814 the state engineer. Any interest accruing on a CD shall be for  
815 the benefit of the licensee.

816 3.97.3.4. The period of liability for a cash bond is five |  
817 (years) after the expiration, suspension, or revocation of the  
818 license. The cash bond will be held by the state engineer until  
819 the five year period is over, then it will be relinquished to the  
820 licensed driller. In the event that a cash bond is replaced by a  
821 surety bond, the period of liability, during which time the cash  
822 bond will be held by the state engineer, shall be five (5) years  
823 from the date the new surety bond becomes effective.

824 3.97.4 Exacting a Well Driller Bond.

825 3.97.4.1. If the state engineer determines, following an |  
826 investigation and a hearing in accordance with the process defined  
827 in Sections 4-5, 4-6, and 4-7, that the licensee has failed to  
828 comply with the Administrative Rules for Water Wells ~~s-Drillers~~ and  
829 refused to remedy the noncompliance, the state engineer may  
830 suspend or revoke a ~~well-driller's~~ license and fully exact the  
831 well driller bond and deposit the money as a non-lapsing dedicated  
832 credit.

833 3.97.4.2. The state engineer may expend the funds derived |  
834 from the bond to investigate or correct any deficiencies which  
835 could adversely affect the public interest resulting from non-  
836 compliance with the Administrative Rules by any well driller.

837 3.97.4.3. The state engineer shall send written notification |  
838 by certified mail, return receipt requested, to the licensee and  
839 the surety on the bond, if applicable, informing them of the  
840 determination to exact the well driller bond. The state  
841 engineer's decision regarding the noncompliance will be attached  
842 to the notification which will provide facts and justification for  
843 bond exaction. In the case of a surety bond exaction, the surety  
844 company will then forfeit the total bond amount to the state  
845 engineer. In the case of a cash bond, the state engineer will  
846 cash out the CD. The exacted well driller bond funds may then be  
847 used by the state engineer to cover the costs of well  
848 investigation, repair, and/or abandonment.

849  
850 **R655-4-4. Administrative Requirements and General Procedures.**

851 4.1 Authorization to Drill.

852 The well driller shall make certain that a valid  
853 authorization or approval to drill exists before engaging in  
854 regulated well drilling activity. Authorization to drill shall  
855 consist of a valid 'start card' based on any of the approvals  
856 listed below. Items 4.1.1 through 4.1.12 allow the applicant to  
857 contract with a well driller to drill, construct, deepen, replace,  
858 repair, renovate, clean, develop, or abandon exactly one well at  
859 each location listed on the start card or approval form. The  
860 drilling of multiple borings/wells at an approved location/point  
861 of diversion is not allowed without authorization from the state  
862 engineer's office. Most start cards list the date when the  
863 authorization to drill expires. If the expiration date has  
864 passed, the start card and authorization to engage in regulated

865 drilling activity is no longer valid. If there is no expiration  
866 date on the start card, the driller must contact the state  
867 engineer's office to determine if the authorization to drill is  
868 still valid. When the work is completed, the permission to drill  
869 is terminated. Preauthorization or pre-approval of pump  
870 installation/repair work is not required.

871 4.1.1 An approved application to appropriate.

872 4.1.2 A provisional well approval letter.

873 An approved provisional well letter grants authority to drill  
874 but allows only enough water to be diverted to determine the  
875 characteristics of an aquifer or the existence of a useable  
876 groundwater source.

877 4.1.3 An approved permanent change application.

878 4.1.4 An approved exchange application.

879 4.1.5 An approved temporary change application.

880 4.1.6 An approved application to renovate or deepen an  
881 existing well.

882 4.1.7 An approved application to replace an existing well.

883 4.1.8 An approved monitor well letter.

884 An approved monitor well letter grants authority to drill but  
885 allows only enough water to be diverted to monitor groundwater.

886 4.1.9 An approved heat exchange well letter.

887 4.1.10 An approved cathodic protection well letter.

888 4.1.11 An approved non-production well construction  
889 application.

890 4.1.12 Any letter or document from the state engineer  
891 directing or authorizing a well to be drilled or work to be done  
892 on a well.

893 4.2 Start Cards.

894 4.2.1 Prior to commencing ~~any work to drill, construct,~~  
895 ~~deepen, replace, repair, renovate, clean, or develop (other than~~  
896 ~~abandonment, see 4.2.4) on any well governed by these~~  
897 administrative rules, the driller must notify the state engineer  
898 of that intention by transmitting the information on the "Start  
899 Card" to the state engineer by telephone, by facsimile (FAX), by  
900 hand delivery, or by e-mail. A completed original Start Card must  
901 be sent to the state engineer by the driller after it has been  
902 telephoned or E-mailed. A copy of the Start Card should be kept  
903 at the drill site at all times regulated activity is being  
904 conducted.

905 4.2.2 A specific Start Card is printed for each well  
906 drilling approval and is furnished by the state engineer to the  
907 applicant or the well owner. The start card is preprinted with  
908 the water right or non-production well number, owner name/address,  
909 and the approved location of the well. The state engineer marks  
910 the approved well drilling activity on the card. The driller must  
911 put the following information on the card:

912 a. The date on which work on the well will commence;

913 b. The projected completion date of the work;

914 c. The well driller's license number;

915 d. The well driller's signature.

916 4.2.3 When a single authorization is given to drill wells at  
917 more than one point of diversion, a start card shall be submitted  
918 for each location to be drilled.

919 4.2.4 Following the submittal of a start card, if the actual  
920 start date of the drilling activity is postponed beyond the date  
921 identified on the start card, the licensed driller must notify the  
922 state engineer of the new start date.

923 4.2.5 A start card is not required to abandon a well.  
924 However, prior to commencing well abandonment work, the driller is  
925 required to notify the state engineer by telephone, by facsimile,  
926 or by e-mail of the proposed abandonment work. The notice must  
927 include the location of the well. The notice should also include  
928 the water right or non-production well number associated with the  
929 well and the well owner if that information is available.

930 4.2.6 A start card or pre-notification is not required to  
931 perform pump installation and repair work on a well.

932 4.3 General Requirements During Construction.

933 4.3.1 The well driller or pump installer shall have the  
934 required penal bond continually in effect during the term of the  
935 ~~well driller's~~ license.

936 4.3.2 The well driller's /pump installer's license number or  
937 ~~the well driller's~~ company name exactly as shown on the ~~well~~  
938 ~~drilling~~ license must be prominently displayed on each well  
939 drilling/pump rig operated under the ~~well driller's~~ license. If  
940 the ~~well driller's~~ company name is changed the ~~well~~  
941 ~~driller~~ licensee must immediately inform the state engineer of the  
942 change in writing.

943 4.3.3 A licensed well driller or a registered drill rig  
944 operator must be at the well site whenever the following aspects  
945 of well construction are in process: advancing the borehole,  
946 setting casing and screen, placing a filter pack, constructing a  
947 surface seal, or similar activities involved in well deepening,  
948 renovation, repair, cleaning, developing, or abandoning. All  
949 registered drill rig operators working under a well driller's  
950 license must be employees of the well driller and must use  
951 equipment either owned by or leased by the licensed well driller.

952 4.3.3.1 A licensed pump installer/well driller or a  
953 registered drill rig or pump rig operator must be at the well site  
954 whenever the following aspects of pump work are in process: pump  
955 removal, pump installation, modification to the well head  
956 including capping, sealing, and pitless adapter/unit installation,  
957 or similar activities on and within the well involving pump  
958 installation/repair. All registered pump rig operators working  
959 under a pump installer's/well driller's license must be employees  
960 of the pump installer/well driller and must use equipment either  
961 owned by or leased by the licensed pump installer/well driller.

962 4.3.3.2 A registered drill rig operator who is left in  
963 responsible charge of advancing the borehole, setting casing and  
964 screen, placing a filter pack, constructing a surface seal, or  
965 similar activities involved in well deepening, renovation, repair,  
966 cleaning, developing, or abandoning must have a working knowledge  
967 of the minimum construction standards and the proper operation of  
968 the drilling rig. The licensed well driller is responsible to  
969 ensure that a registered operator is adequately trained to meet  
970 these requirements.

971 4.3.3.3 A registered drill rig or pump rig operator who is  
972 left in responsible charge of pump installation or repair must

973 have a working knowledge of the minimum construction standards and  
974 the proper operation of the pump rig. The licensed well driller  
975 or pump installer is responsible to ensure that a registered  
976 operator is adequately trained to meet these requirements.

977 4.3.45 State engineer provisions for issuing cease and  
978 desist orders (Red Tags)

979 4.3.45.1 Construction Standards: The state engineer or  
980 staff of the Division of Water Rights may order that regulated  
981 work on a well cease if a field inspection reveals that the  
982 construction does not meet the minimum construction standards to  
983 the extent that the public interest might be adversely affected.

984 4.3.45.2 Licensed Drilling Method: A cease work order may  
985 also be issued if the well driller is not licensed for the  
986 drilling method being used for the well construction.

987 4.3.45.3 Incompetent Registered Operator: If, during a  
988 field inspection by the staff of the Division of Water Rights, it  
989 is determined that a registered operator in responsible charge  
990 does not meet these requirements, a state engineer's red tag (see  
991 Section 4.3.45) ~~will~~shall be placed on the drilling rig or pump  
992 rig and the drilling/pump operation ~~will~~shall be ordered to shut  
993 down. The order to cease work ~~will~~shall remain effective until a  
994 qualified person is available to perform the work.

995 4.3.54.4 No licenseed driller or registered operator on  
996 site: If, during a field inspection by the staff of the Division  
997 of Water Rights, it is determined that neither a licenseed driller  
998 or registered operator are one site when regulated ~~drilling-well~~  
999 activity is occurring, the state engineer may order regulated well  
1000 ~~drilling~~ work to cease.

1001 4.3.54.5 General: The state engineer's order ~~will~~shall be  
1002 in the form of a red tag which ~~will~~shall be attached to the  
1003 drilling/pump rig. A letter from the state engineer ~~will~~shall be  
1004 sent to the licenseed driller to explain the sections of the  
1005 administrative rules which were violated. The letter ~~will~~shall  
1006 also explain the requirements that must be met before the order  
1007 can be lifted.

1008 4.3.4.6 A licensee may appeal a Cease and Desist order  
1009 by:

1010 4.3.4.6.1 submitting to the Division a written statement  
1011 clearly and concisely stating the specific disputed facts, the  
1012 supporting facts, and the relief sought; or

1013 4.3.4.6.2 requesting a hearing on the issue according to  
1014 the provisions of R655-4-7.

1015 4.3.4.7 A Cease and Desist Order shall remain in force  
1016 during the pendency of the appeal.

1017 4.3.56 When required by the state engineer, the well driller  
1018 or registered operator shall take lithologic samples at the  
1019 specified intervals and submit them in the bags provided by the  
1020 state engineer.

1021 4.3.67 A copy of the current Administrative Rules for Water  
1022 Wells ~~Drillers~~ should be available at each well construction site  
1023 for review by the construction personnel. Licensed well  
1024 drillers/pump installers and registered operators must have proof  
1025 of licensure or registration with them on site during regulated  
1026 ~~drilling-well~~ activity.

1027 4.3.78 Prior to starting construction of a new well, the  
1028 licensed driller shall investigate and become familiar with the  
1029 drilling conditions, geology of potential aquifers and overlying  
1030 materials, anticipated water quality problems, and know  
1031 contaminated water bearing zones that may be encountered in the  
1032 area of the proposed drilling activity.

1033 4.4 Removing Drill Rig From Well Site.

1034 4.4.1 A well driller shall not remove his drill rig from a  
1035 well site unless the well drilling activity is properly completed  
1036 or abandoned in accordance with the construction standards in  
1037 Sections 9 thru 12.

1038 4.4.2 For the purposes of these rules, the regulated work on  
1039 a well will be considered completed when the well driller removes  
1040 his drilling rig from the well site.

1041 4.4.3 The well driller may request a variance from the state  
1042 engineer to remove a drill rig from a well prior to completion or  
1043 abandonment. This request must be in written form to the state  
1044 engineer. The written request must provide justification for  
1045 leaving the well incomplete or un-abandoned and indicate how the  
1046 well will be temporarily abandoned as provided in Section R655-4-  
1047 142 and must give the date when the well driller plans to continue  
1048 work to either complete the well or permanently abandon it.

1049 4.5 Official Well Driller's Report (Well Log).

1050 4.5.1 Within 30 days of the completion of regulated work on  
1051 any well, the driller shall file an official well driller's report  
1052 (well log) with the state engineer. The blank well log form will  
1053 be mailed to the licensed well driller upon receipt of the  
1054 information on the Start Card as described in Subsection 4.2.

1055 4.5.2 The water right number or non-production well number,  
1056 owner name/address, and the approved location of the well will be  
1057 preprinted on the blank well log provided to the well driller.  
1058 The driller is required to verify this information and make any  
1059 necessary changes on the well log prior to submittal. The state  
1060 engineer will mark the approved activity (e.g., new, replace,  
1061 repair, deepen) on the well log. The driller must provide the  
1062 following information on the well log:

1063 a. The start and completion date of work on the well;

1064 b. The nature of use for the well (e.g., domestic,  
1065 irrigation, stock watering, commercial, municipal, provisional,  
1066 monitor, cathodic protection, heat pump, etc.;

1067 c. The borehole diameter, depth interval, drilling method  
1068 and drilling fluids utilized to drill the well;

1069 d. The lithologic log of the well based on strata samples  
1070 taken from the borehole as drilling progresses;

1071 e. Static water level information to include date of  
1072 measurement, static level, measurement method, reference point,  
1073 artesian flow and pressure, and water temperature;

1074 f. The size, type, description, joint type, and depth  
1075 intervals of casing, screen, and perforations;

1076 g. A description of the filter pack, surface and interval  
1077 seal material, and packers used in the well along with necessary  
1078 related information such as the depth interval, quantity, and mix  
1079 ratio;

1080 h. A description of the finished wellhead configuration;



1081 i. The date and method of well development;  
1082 j. The date, method, yield, drawdown, and elapsed time of a  
1083 well yield test;  
1084 k. A description of pumping equipment (if available);  
1085 l. Other comments pertinent to the well activity completed;  
1086 m. The well driller's statement to include the driller name,  
1087 license number, signature, and date.

1088 4.5.3 Accuracy and completeness of the submitted well log  
1089 are required. Of particular importance is the lithologic section  
1090 which should accurately reflect the geologic strata penetrated  
1091 during the drilling process. Sample identification must be logged  
1092 in the field as the borehole advances and the information  
1093 transferred to the well log form for submission to the state  
1094 engineer.

1095 4.5.4 An amended well log shall be submitted by the licensed  
1096 driller if it becomes known that the original report contained  
1097 inaccurate or incorrect information, or if the original report  
1098 requires supplemental data or information. Any amended well log  
1099 must be accompanied by a written statement, signed and dated by  
1100 the licensed well driller, attesting to the circumstances and the  
1101 reasons for submitting the amended well log.

1102 4.6 Official Well Abandonment Reports (Abandonment Logs).

1103 4.6.1 Whenever a well driller is contracted to replace an  
1104 existing well under state engineer's approval, it shall be the  
1105 responsibility of the well driller to inform the well owner that  
1106 it is required by law to permanently abandon the old well in  
1107 accordance with the provisions of Section R655-4-12.

1108 4.6.2 Within 30 days of the completion of abandonment work  
1109 on any well, the driller shall file an abandonment log with the  
1110 state engineer. The blank abandonment log will be mailed to the  
1111 licensed well driller upon notice to the state engineer of  
1112 commencement of abandonment work as described in Subsection R655-  
1113 4-4(4.2.4).

1114 4.6.3 The water right number or non-production well number,  
1115 owner name/address, and the well location (if available) will be  
1116 preprinted on the blank abandonment log provided to the well  
1117 driller. The driller is required to verify this information and  
1118 make any necessary changes on the abandonment log prior to  
1119 submitting the log. The driller must provide the following  
1120 information on the abandonment log:

1121 a. Existing well construction information;  
1122 b. Date of abandonment;  
1123 c. Reason for abandonment;  
1124 d. A description of the abandonment method;  
1125 e. A description of the abandonment materials including  
1126 depth intervals, material type, quantity, and mix ratio;  
1127 f. Replacement well information (if applicable);  
1128 g. The well driller's statement to include the driller  
1129 name, license number, signature, and date.

1130 4.6.4 When a well is replaced and the well owner will not  
1131 allow the driller to abandon the existing well, the driller must  
1132 briefly explain the situation on the abandonment form and submit  
1133 the form to the state engineer within 30 days of completion of the  
1134 replacement well.

1135 4.7 Official Pump Installation Report (Pump Log).  
1136 4.7.1 Within 30 days of the completion of regulated pump  
1137 work on any well, the licensee shall file an official pump  
1138 installation report (pump log) with the state engineer. Blank  
1139 pump log forms will be available to the licensee at any Division  
1140 office, requested by mail, or downloaded from the Division's  
1141 website (www.waterrights.utah.gov).  
1142 4.7.2 Pertinent information to be included on the pump log  
1143 by the licensee shall consist of:  
1144 a. The water right number or non-production well number;  
1145 b. the well owner name and address;  
1146 c. The approved point of diversion or location of the well;  
1147 d. The start and completion date of work on the well;  
1148 e. The nature of use for the well (e.g., domestic,  
1149 irrigation, stock watering, commercial, municipal, provisional,  
1150 monitor, cathodic protection, heat pump, etc.);  
1151 f. Pertinent well details including casing diameters/depths,  
1152 total well depth, well intake depth intervals, wellhead  
1153 configuration including pitless adapter/unit configuration if  
1154 applicable;  
1155 g. A detailed description of pump-related work performed on  
1156 or in the well including pump setting depth, pump type, pumping  
1157 rate, valving, drop piping, jointing, capping, testing, sealing,  
1158 disinfection, and pitless adapter/unit installation;  
1159 h. Static water level information to include date of  
1160 measurement, static level, measurement method, reference point,  
1161 artesian flow and pressure, and water temperature;  
1162 i. A description of the finished wellhead configuration;  
1163 j. The date, method, yield, drawdown, and elapsed time of a  
1164 well yield test;  
1165 k. Other comments pertinent to the well activity completed;  
1166 m. The pump installer's statement to include the licensee  
1167 name, license number, signature, and date.

1168 4.8~~7~~ Incomplete or Incorrectly Completed Reports.  
1169 An incomplete ~~well/abandonment~~-log or a ~~well/abandonment~~-log  
1170 that has not been completed correctly will be returned to the  
1171 licensee ~~ed well-driller~~ to be completed or corrected. The ~~well~~-log  
1172 will not be considered filed with the state engineer until it is  
1173 complete and correct.

1174 4.8 Extensions of Time.  
1175 The well driller may request an extension of time for filing  
1176 the well log if there are circumstances which prevent the driller  
1177 from obtaining the necessary information before the expiration of  
1178 the 30 days. The extension request must be submitted in writing  
1179 before the end of the 30-day period.

1180 4.9 Late Well Logs - Lapsed License  
1181 All outstanding well logs or abandonment logs shall be  
1182 properly submitted to the state engineer prior to the lapsing of a  
1183 license. A person with a lapsed license who has failed to submit  
1184 all well/abandonment logs within 90 days of lapsing will be  
1185 subject to the state engineer's enforcement powers under Section  
1186 73-2-25 of the Utah Code (Related rules: Section R655-14 UAC)

1187  
1188 **R655-4-5. ~~Well Driller Disciplinary Procedures~~ Administrative Rule**

1189 Infractions.  
 1190 ~~5.1 Well driller disciplinary procedures will be conducted~~  
 1191 ~~informally and are governed by Sections 63G-4-202 (Designation of~~  
 1192 ~~Adjudicative Proceedings as Informal) and 63G-4-203 (Procedures~~  
 1193 ~~for Informal Adjudicative Proceedings) of the Utah Code and by~~  
 1194 ~~Section R655-6 (Administrative Procedures for Informal Proceedings~~  
 1195 ~~Before the Division of Water Rights) of the Utah Administrative~~  
 1196 ~~Code.~~

1197 5.1<sup>2</sup> List of Infractions and Points.  
 1198 Licensed well drillers who commit the infractions listed  
 1199 below in Table 1 shall have assessed against their well drilling  
 1200 record the number of points assigned to the infraction.

1201  
 1202 TABLE 1

1203  
 1204 Level I Infractions of Administrative Requirements

	Points
1206 Well log submitted late	10
1207 <u>Pump log submitted late</u>	<u>10</u>
1208 Well abandonment report submitted	
1209 late	10
1210 <del>Well driller</del> <u>License number</u> or <del>well driller</del> <u>company</u>	
1211 name not clearly posted on well	
1212 drilling/ <u>pump</u> rig	10
1213 Failing to notify the state engineer	
1214 of a change in the well	
1215 <del>driller</del> <u>licensee</u> 's company name	10
1216 Failure to properly notify the	
1217 state engineer before the	
1218 proposed start date shown	
1219 on the start card	20
1220 Failure to notify the state engineer	
1221 of a change of start date	50
1222 Constructing a replacement well	
1223 further than 150 ft from the	
1224 original well without the	
1225 authorization of an approved	
1226 change application	50
1227 Failure to drill at the state engineer	
1228 approved location as identified	
1229 on the start card	50
1230 Removing the well drilling rig from	
1231 the well site before completing the	
1232 well or temporarily or permanently	
1233 abandoning the well	50

1234  
 1235  
 1236 TABLE 2

1237  
 1238 Level II Infractions of Administrative Requirements

	Points
1240 Employing an operator who is not	
1241 registered with the state	75

1243	Contracting out work to an	
1244	unlicensed driller (using the	
1245	unlicensed driller's rig) without	
1246	prior written approval from the state	75
1247	Performing any well drilling activity without	
1248	valid authorization (except in	
1249	emergency situations)	100
1250	Intentionally making a material	
1251	misstatement of fact in an official	
1252	well driller's report/ <a href="#">pump log</a> or amended	
1253	official well driller's report	
1254	(well log)	100

TABLE 3

Level III Infractions of Construction Standards / Conditions		Points
1258	Level III Infractions of Construction Standards / Conditions	
1259		
1260		Points
1261	Approvals	
1262	Using a method of drilling not listed	
1263	on the well driller's license	30
1264	Failing to comply with any conditions	
1265	included on the well approval such as	
1266	minimum or maximum depths, specified	
1267	locations of perforations, etc.	50
1268	Performing any well construction	
1269	activity in violation of a red tag	
1270	cease work order	100
1271		
1272	Casing	
1273	Failure to extend well casing at least	
1274	18" above ground	30
1275	Failure to install a protective casing	
1276	around a PVC well at the surface	50
1277	Using improper casing joints	100
1278	Using or attempting to use sub-standard	
1279	well casing	100
1280		
1281	Surface Seals	
1282	Using improper products or procedures	
1283	to install a surface seal	100
1284	Failure to seal off artesian flow on	
1285	the outside of casing	100
1286	Failure to install surface seal to	
1287	adequate depth based on formation type	100
1288	Failure to install interval seals to	
1289	eliminate aquifer commingling	
1290	or cross contamination	100
1291		
1292	Well Abandonment	
1293	Using improper procedures to abandon	
1294	a well	100
1295	Using improper products to abandon a	
1296	well	100

1297		
1298	Construction Fluids	
1299	Using water of unacceptable quality	
1300	in the well drilling operation	40
1301	Using an unacceptable mud pit	40
1302	Failure to use treated or disinfected	
1303	water for drilling processes	40
1304	Using improper circulation materials	
1305	or drilling chemicals	100
1306		
1307	<u>Filter/Gravel Packs and Formation Stabilizers</u>	
1308	Failure to disinfect filter pack	40
1309	Failure to install filter pack properly	75
1310	<u>Failure to install formation stabilizer</u>	
1311	<u>    according to standard</u>	75
1312		
1313		
1314	Well Completion	
1315	Failure to make well accessible to	
1316	water level or pressure head measurements	30
1317	Failure to install casing annular seals,	
1318	cap, and valving, and to control	
1319	artesian flow	30
1320	Failure to disinfect a well upon	
1321	completion of well drilling activity	40
1322	<u>Failure to install sanitary well capping</u>	
1323	<u>    according to standard</u>	75
1324	Failure to install a pitless adapter/unit	
1325	according to standard	75
1326	Failure to develop and test a well	
1327	according to standard	75
1328	<u>Failure to hydrofracture a well</u>	
1329	<u>    according to standard</u>	75
1330	<u>Failure to install packers/plugs</u>	
1331	<u>    according to standard</u>	75
1332	<u>Failure to install well intakes(screens,</u>	
1333	<u>    perforations, open bottom) according to standard</u>	75
1334	<u>Failure install non-production wells</u>	
1335	<u>    according to standard</u>	100
1336		
1337		
1338	<u>Pump Installation and Repair</u>	
1339	<u>Failure to extend well casing at least</u>	
1340	<u>    18" above ground</u>	30
1341	<u>Failure to make well accessible to</u>	
1342	<u>    water level or pressure head measurements</u>	30
1343	<u>Failure to install casing annular seals,</u>	
1344	<u>    cap, and valving, and to control</u>	
1345	<u>    artesian flow</u>	30
1346	<u>Failure to disinfect a well upon</u>	
1347	<u>    completion of pump activity</u>	40
1348	<u>Failure to install a protective casing</u>	
1349	<u>    around a PVC well at the surface</u>	50
1350	<u>Failure to maintain surface</u>	

1351	<u>completion and security standards</u>	75
1352	<u>Failure to install or maintain</u>	
1353	<u>Backflow protection</u>	75
1354	<u>Failure to develop and test a well</u>	
1355	<u>according to standard</u>	75
1356	<u>Failure to install sanitary well capping</u>	
1357	<u>according to standard</u>	75
1358	<u>Failure to install a pitless adapter/unit</u>	
1359	<u>according to standard</u>	75
1360	<u>Failure to prevent contamination from entering a well</u>	
1361	<u>through placement, products, tools, and materials</u>	100
1362	<u>Failure to repair a well's surface seal</u>	100
1363		
1364		
1365	General	
1366	Failure to securely cover an	
1367	unattended well during construction	30
1368	Failure to engage in well drilling	
1369	activity in accordance with accepted	
1370	industry practices	100

TABLE 4  
Level IV Infractions of Application Requirements

	<u>POINTS</u>
<u>Submitting an initial license or</u>	
<u>registration application that</u>	
<u>contains false or misleading information</u>	100

5.23 When Points Are Assessed.

Points will be assessed against a driller's record upon verification by the state engineer that an infraction has occurred. Points will be assessed at the time the state engineer becomes aware of the infraction regardless of when the infraction occurred.

5.3 Infraction Notice

When infraction points are assessed against a well driller's record, the State Engineer shall issue an infraction notice to the well driller. The notice shall include an explanation of the administrative rule(s) violated, the date the alleged violations were discovered and the approximate date of occurrence, the number of points assessed for each infraction, the total number of points on the well drillers record, an explanation of the adjudicative process to appeal a cease and desist order and or infraction notice, and an explanation of how to delete points from the driller record, an any other information deemed pertinent by the state engineer.

5.4 Appeal of Infractions.

5.4.1 If the infraction points do not require a hearing, a well driller may appeal an infraction within 30 days of the date the Infraction Notice was issued. The appeal shall be made in writing to the state engineer and shall state clearly and concisely the disputed facts, the supporting facts, and the relief



1405 sought.

1406 5.4.2 A well driller may request reconsideration of a denied  
1407 appeal by requesting a hearing before the Presiding Officer within  
1408 20 days of the denial. If the Presiding Officer does not respond  
1409 within 20 days after the request is submitted, then it is deemed  
1410 denied. ~~Well drillers may appeal each infraction in writing~~  
1411 ~~within 30 days of written notification by the state engineer.~~

1412 5.5 Warning Letter.

1413 5.5 Deleting Points from the Driller Record.

1414 Points assessed against a well driller's record shall remain  
1415 on the record unless deleted through any of the following options:

1416 5.8.1 Points shall be deleted three years after the date  
1417 when the infraction is noted by the state engineer and the points  
1418 are assessed against the driller's record.

1419 5.8.2 One half the points on the record shall be deleted if  
1420 the well driller is free of infractions for an entire year.

1421 5.8.3 Thirty (30) points shall be deleted for obtaining six  
1422 (6) hours of approved continuing education credits in addition to  
1423 the credits required to renew the water well driller's license. A  
1424 driller may exercise this option only once each year.

1425 5.8.4 Twenty (20) points shall be deleted for taking and  
1426 passing (with a minimum score of 70%) the test covering the  
1427 administrative requirements and the minimum construction  
1428 standards. A driller may exercise this option only every other  
1429 year.

1430 ~~When the number of points assessed against the well driller's~~  
1431 ~~record equals seventy-five (75) points, a warning letter will be~~  
1432 ~~sent to the well driller. The letter will notify the driller that~~  
1433 ~~if he continues to violate the administrative requirements or~~  
1434 ~~minimum construction standards contained in the Administrative~~  
1435 ~~Rules for Water Well Drillers, a hearing will be held to determine~~  
1436 ~~if his license should be suspended or revoked or the bond exacted.~~  
1437 ~~The letter will also describe the options available to the~~  
1438 ~~driller to delete points from the record as described in~~  
1439 ~~Subsection R655 4 5.7. A copy of the driller's infraction record~~  
1440 ~~will be included with the letter. In the event numerous points~~  
1441 ~~are assessed against the well drillers record so that the total~~  
1442 ~~surpasses seventy five (75) and one hundred (100) points at the~~  
1443 ~~same time, no warning letter will be sent.~~

1444 5.6 Well Driller Hearings.

1445 When the number of infraction points assessed against the  
1446 well driller's record equals or exceeds 100, the state engineer  
1447 shall submit a request to the Presiding Officer for a hearing.  
1448 The requested purpose of the hearing shall be to determine if  
1449 administrative penalties should be levied against the water well  
1450 driller including fines and probation, suspension, or revocation  
1451 of the water well driller's.

1452 ~~5.6.1 When the number of points assessed against the well~~  
1453 ~~driller's record equals 100, a Notice of Agency Action (NAA) will~~  
1454 ~~be sent to the well driller. The NAA will set forth the alleged~~  
1455 ~~facts, provide an opportunity for a response from the well~~  
1456 ~~driller, and provide notice of the hearing scheduled to consider~~  
1457 ~~the issues. The hearing will be scheduled at least 10 days from~~  
1458 ~~the date the NAA is mailed. The NAA will indicate the date, time,~~

1459 ~~and place of the hearing.~~

1460 ~~5.6.2 A NAA may also be sent and a hearing may also be~~  
1461 ~~convened as a result of a complaint filed by a well owner~~  
1462 ~~regardless of the total number of points shown on the well~~  
1463 ~~driller's record.~~

1464 ~~5.6.3 A NAA may be sent and a hearing may be convened if~~  
1465 ~~there is evidence that a license or registration application~~  
1466 ~~submitted to the state engineer contains intentionally false or~~  
1467 ~~misleading information.~~

1468 ~~5.6.4 The purpose of the hearing will be to determine if~~  
1469 ~~disciplinary action is necessary regarding the water well~~  
1470 ~~driller's Utah Water Well License. The hearing will be recorded.~~  
1471 ~~At the hearing, testimony will be taken under oath regarding the~~  
1472 ~~alleged facts included in the NAA. Those providing testimony may~~  
1473 ~~include the water well driller, the well owner, Division of Water~~  
1474 ~~Rights staff, and others as deemed necessary. Evidence that is~~  
1475 ~~pertinent to the alleged facts may also be presented at the~~  
1476 ~~hearing. After considering the testimony and the evidence~~  
1477 ~~presented at the hearing, the State Engineer may determine either~~  
1478 ~~that there is no cause for action against the well driller's~~  
1479 ~~license or that disciplinary action is necessary.~~

#### 1480 5.7 Lack of Knowledge Not an Excuse.

1481 Lack of knowledge of the law or the administrative  
1482 requirements and minimum construction standards related to well  
1483 drilling shall not constitute an excuse for violation thereof.

### 1484 R655-4-6 Administrative Penalties

#### 1485 ~~5.7 Administrative Penalties.~~

1486 Administrative penalties ordered against a licensed driller  
1487 by the ~~state engineer~~Presiding Officer following a hearing can  
1488 include probation, administrative fines, license suspension, and  
1489 license revocation. Administrative penalties are ordered based on  
1490 the severity of the infraction (Level I, II, III from Tables 1-3  
1491 of Section 5.1) as well as the recurrence of an infraction. The  
1492 maximum administrative fine per infraction shall be capped at  
1493 \$1000.

1494 65.7.1 Level I Administrative Penalties: Level I  
1495 administrative penalties ~~will~~shall be levied against Level I  
1496 administrative infractions (see Table 1 of Section 5.1). The  
1497 Level I administrative penalty structure is as follows:

1498 65.7.1.1 At the first conviction of Level I infractions, the  
1499 disciplinary action for the infractions shall be probation.

1500 65.7.1.2 Second conviction shall result in probation and a  
1501 fine at a rate of \$2.50 per infraction point.

1502 65.7.1.3 Third conviction shall result in probation and an  
1503 elevated fine at a rate of \$5.00 per infraction point.

1504 65.7.1.4 Fourth conviction shall result in an elevated fine  
1505 at a rate of \$10.00 per infraction point and possible suspension.

1506 65.7.1.5 Continued and repeated convictions beyond the  
1507 fourth conviction may result in an elevated fine at a rate of  
1508 \$10.00 per infraction point and possible suspension or revocation.

1509 65.7.1.6 Fines for late well logs and abandonment logs shall  
1510 be calculated separately and added to fines calculated for other  
1511  
1512

1513 infractions. For late well log infractions, the points associated  
1514 with each infraction ~~will~~ shall be multiplied by a factor based on  
1515 the lateness of the well log. The infraction point multipliers  
1516 are as follows:

1517  
1518 TABLE 54  
1519

1520 Tardiness of the log	1520 Infraction Point Multiplier
1521 1-2 weeks	0.50
1522 2-4 weeks	1.00
1523 1-3 months	1.50
1524 3-6 months	2.00
1525 6-9 months	2.50
1526 9-12 months	3.00
1527 Over 12 months	4.00

1528  
1529 65.7.2 Level II Administrative Penalties: Level II  
1530 administrative penalties ~~will~~ shall be levied against Level II  
1531 administrative infractions (see Table 2 of Section 5.1). The  
1532 Level II administrative penalty structure is as follows:

1533 65.7.2.1 At the first conviction of Level II infractions,  
1534 the disciplinary action shall result in probation and a fine at a  
1535 rate of \$2.50 per infraction point.

1536 65.7.2.2 Second conviction shall result in probation and an  
1537 elevated fine at a rate of \$5.00 per infraction point.

1538 65.7.2.3 Third conviction shall result in possible  
1539 suspension and an elevated fine at a rate of \$10.00 per infraction  
1540 point.

1541 65.7.2.4 Continued and repeated convictions beyond the  
1542 fourth conviction may result in an elevated fine at a rate of  
1543 \$10.00 per infraction point and possible suspension or revocation.

1544 65.7.3 Level III Administrative Penalties: Level III  
1545 administrative penalties ~~will~~ shall be levied against Level III  
1546 construction infractions (see Table 3 of Section 5.1). The Level  
1547 III administrative penalty structure is as follows:

1548 65.7.3.1 At the first conviction of Level III infractions,  
1549 the disciplinary action shall result in probation and a fine at a  
1550 rate of \$5.00 per infraction point.

1551 65.7.3.2 Second conviction shall result in possible  
1552 suspension and an elevated fine at a rate of \$10.00 per infraction  
1553 point.

1554 65.7.3.3 Third conviction may result in an elevated fine at  
1555 a rate of \$10.00 per infraction point and possible suspension or  
1556 revocation.

1557 6.7.4 Level VI Administrative Penalties: The Level VI  
1558 administrative penalty shall be levied against a Level IV  
1559 application requirement infraction (see Table 4 of Section 5.1).  
1560 The Level IV administrative penalty is revocation of the license  
1561 at first conviction.

1562 65.7.4 Administrative Penalties - General

1563 65.7.4.1 Penalties ~~will~~ shall only be imposed as a result of  
1564 a well driller hearing.

1565 65.7.4.2 Failure to pay a fine within 30 days from the date  
1566 it is assessed ~~will~~ shall result in the suspension of the well

1567 driller license until the fine is paid.

1568 65-7.4.3 Fines shall be deposited as a dedicated credit.  
1569 The state engineer shall expend the money retained from fines for  
1570 expenses related to well drilling activity inspection, well  
1571 drilling enforcement, and well driller education.

1572 65-7.5 Probation: As described above in Sections 5.7.1,  
1573 5.7.2, and 5.7.3, probation ~~will~~shall generally be the  
1574 disciplinary action imposed in situations where the facts  
1575 established through testimony and evidence describe first time  
1576 infractions of the administrative rules that are limited in number  
1577 and less serious in their impact on the well owner and on the  
1578 health of the aquifer. The probation period ~~will~~shall generally  
1579 last until the number of infraction points on the well driller's  
1580 record is reduced below 70 through any of the options described in  
1581 Subsection 4-5.8.

1582 65-7.6 Suspension: Suspension ~~will~~shall generally be the  
1583 disciplinary action imposed in situations where the facts  
1584 established through testimony and evidence describe repeated  
1585 convictions of the administrative rules, or infractions that a  
1586 pose serious threat to the health of the aquifer, or a well  
1587 driller's apparent disregard for the administrative rules or the  
1588 state's efforts to regulate water well drilling. Depending upon  
1589 the number and severity of the rule infractions as described above  
1590 in Sections 5.7.1, 5.7.2, and 5.7.3, the state engineer may elect  
1591 to suspend a well driller license for a certain period of time  
1592 and/or until certain conditions have been met by the well driller.

1593 In establishing the length of the suspension, the state engineer  
1594 ~~will~~shall generally follow the guideline that three infraction  
1595 points is the equivalent of one day of suspension. A well driller  
1596 whose license has been suspended ~~will~~shall be prohibited from  
1597 engaging in regulated well drilling activity. License suspension  
1598 may also result in the exaction of the Well Driller Bond as set  
1599 forth in Subsection 4-3.7.4. A well driller whose license has  
1600 been suspended is allowed to work as a registered operator under  
1601 the direct, continuous supervision of a licensed well driller. If  
1602 the suspension period extends beyond the expiration date of the  
1603 water well driller license, the water well driller may not apply  
1604 to renew the license until the suspension period has run and any  
1605 conditions have been met. Once the suspension period has run and  
1606 once all conditions have been met by the well driller, the  
1607 suspension ~~will~~shall be lifted and the driller ~~will~~shall be  
1608 notified that he/she may again engage in the well drilling  
1609 business. The well driller ~~will~~shall then be placed on probation  
1610 until the number of infraction points on the well driller's record  
1611 is reduced below 70 through any of the options described in  
1612 Subsection 4-5.8.

1613 65-7.7 Revocation: Revocation ~~will~~shall generally be the  
1614 disciplinary action imposed in situations where the facts  
1615 established through testimony and evidence describe repeated  
1616 convictions of the administrative rules for which the well  
1617 driller's Utah Water Well License has previously been suspended.  
1618 Revocation ~~will~~shall also be the disciplinary action taken if  
1619 after a hearing the facts establish that a driller knowingly  
1620 provided false or misleading information on a driller license

1621 application. A well driller whose license has been revoked ~~will~~  
1622 shall be prohibited from engaging in regulated well drilling  
1623 activity. License revocation may also result in the exaction of  
1624 the Well Driller Bond as set forth in Subsection 4-3.7.4. A well  
1625 driller whose license has been revoked is allowed to work as a  
1626 registered operator under the direct, continuous supervision of a  
1627 licensed well driller. A well driller whose water well license  
1628 has been revoked may not make application for a new water well  
1629 license for a period of two years from the date of revocation.  
1630 After the revocation period has run, a well driller may make  
1631 application for a new license as provided in Section R655-4-3.  
1632 However, the well drilling experience required must be based on  
1633 new experience obtained since the license was revoked.

1634 ~~5.8 Deleting Point from the Driller Record.~~

1635 ~~Points assessed against a well driller's record will remain~~  
1636 ~~on the record unless deleted through any of the following options:~~

1637 ~~5.8.1 Points will be deleted three years after the date when~~  
1638 ~~the infraction is noted by the state engineer and the points are~~  
1639 ~~assessed against the driller's record.~~

1640 ~~5.8.2 One half the points on the record will be deleted if~~  
1641 ~~the well driller is free of infractions for an entire year.~~

1642 ~~5.8.3 Thirty (30) points will be deleted for obtaining six~~  
1643 ~~(6) hours of approved continuing education credits in addition to~~  
1644 ~~the credits required to renew the water well driller's license. A~~  
1645 ~~driller may exercise this option only once each year.~~

1646 ~~5.8.4 Twenty (20) points will be deleted for taking and~~  
1647 ~~passing (with a minimum score of 70%) the test covering the~~  
1648 ~~administrative requirements and the minimum construction~~  
1649 ~~standards. A driller may exercise this option only every other~~  
1650 ~~year.~~

1651 ~~5.9 Lack of Knowledge Not an Excuse.~~

1652 ~~Lack of knowledge of the law or the administrative~~  
1653 ~~requirements and minimum construction standards related to well~~  
1654 ~~drilling shall not constitute an excuse for violation thereof.~~

1655

1656

## 1657 R655-4-7 Adjudicative Proceedings

1658

### 1659 7.1 Designation of Presiding Officers.

1660 The following persons may be designated Presiding Officers in  
1661 well driller adjudicative proceedings: Assistant State Engineers;  
1662 Deputy State Engineers; or other qualified persons designated by  
1663 the State Engineer.

### 1664 7.2 Disqualification of Presiding Officers.

1665 7.2.1 A Presiding Officer shall disqualify himself from  
1666 performing the functions of the Presiding Officer regarding any  
1667 matter in which he, his spouse, or a person within the third  
1668 degree of relationship to either of them or the spouse of such  
1669 person:

1670 7.2.1.1 Is a party to the proceeding, or an officer,  
1671 director, or trustee of a party;

1672 7.2.1.2 Has acted as an attorney in the proceeding or served  
1673 as an attorney for, or otherwise represented, a party concerning  
1674 the matter in controversy;

1675 7.2.1.3 Knows that he has a financial interest, either  
1676 individually or as a fiduciary, in the subject matter in  
1677 controversy or in a party to the proceeding;  
1678

1679 7.2.1.4 Knows that he has any other interest that could be  
1680 substantially affected by the outcome of the proceeding; or

1681 7.2.1.5 Is likely to be a material witness in the proceeding.

1682 7.2.2 A Presiding Officer is also subject to disqualification  
1683 under principles of due process and administrative law.

1684 7.2.3 These requirements are in addition to any requirements  
1685 under the Utah Public Officers' and Employees' Ethics Act, Section  
1686 67-16-1 et seq.

1687 7.2.4 A motion for disqualification shall be made first to  
1688 the Presiding Officer. If the Presiding Officer is appointed, any  
1689 determination of the Presiding Officer upon a motion for  
1690 disqualification may be appealed to the State Engineer.

1691 7.3 Informal Proceedings

1692 7.3.1 All adjudicative proceedings initiated under this rule  
1693 are classified as informal adjudicative proceedings.

1694 7.3.1 The procedures for informal adjudicative proceedings  
1695 initiated under this rule are set forth in this rule.

1696 7.4 Service of Notice and Orders.

1697 7.4.1 Hearing Notices and Final Judgment and Orders shall be  
1698 served upon the well driller at the well driller's address using  
1699 certified mail or methods described in Rule 5 of the Utah Rules of  
1700 Civil Procedure.

1701 7.4.2 Infraction notices, notices of approval or denial of  
1702 licensing or registration or license or registration renewal, and  
1703 other routine correspondence related to the Division's Well  
1704 Drilling Program shall be sent to the well driller at the well  
1705 driller's address by regular U.S. Mail.

1706 7.5 Computation of Time.

1707 7.5.1 Computation of any time period referred to in these  
1708 rules shall begin with the first day following the act that  
1709 initiates the running of the time period. The last day of the time  
1710 period computed is included unless it is a Saturday, Sunday, or  
1711 legal holiday or any other day on which the Division is closed, in  
1712 which event the period shall run until the end of the business  
1713 hours of the following business day.

1714 7.5.2 The Presiding Officer, for good cause shown, may  
1715 extend any time limit contained in these rules, unless precluded  
1716 by statute. All requests for extensions of time shall be made by  
1717 motion.

1718 7.6 Request for Hearing

1719 7.6.1 A hearing before a Presiding Officer is permitted in a  
1720 well drilling adjudicative proceeding if:

1721 7.6.1.1 The proceeding was commenced by an Infraction  
1722 Notice; or

1723 7.6.1.2 The proceeding was commenced by a well driller  
1724 request raising a genuine issue regarding

1725 7.6.1.2.1 The denial of a license or registration renewal  
1726 application; or

1727 7.6.1.2.2 The issuance of a cease and desist order (red tag)

1728 7.6.2 Regardless of any other provision of the general laws



1729 to the contrary, all requests for a hearing shall be in writing  
1730 and shall be filed with the Division to the attention of the  
1731 Presiding Officer.

1732 7.6.3 The request for a hearing shall state clearly and  
1733 concisely the disputed facts, the supporting facts, the relief  
1734 sought, and any additional information required by applicable  
1735 statutes and rules.

1736 7.6.4 The Presiding Officer shall, give all parties at least  
1737 ten (10) days notice of the date, time and place for the hearing.  
1738 The Presiding Officer may grant requests for continuances for good  
1739 cause shown.

1740 7.6.5 Any party may, by motion, request that a hearing be  
1741 held at some place other than that designated by the Presiding  
1742 Officer, due to disability or infirmity of any party or witness,  
1743 or where justice and equity would be best served.

1744 7.6.6 A well driller at any time may withdraw the well  
1745 driller's request for a hearing. The withdrawal shall be filed  
1746 with the Division to the attention of the Presiding Officer, in  
1747 writing, signed by the well driller or an authorized  
1748 representative, and is deemed final upon the date filed.

#### 1749 7.7 Filings Generally.

1750 7.7.1 Papers filed with the Division shall state the title  
1751 of the proceeding and the name of the well driller on whose behalf  
1752 the filing is made.

1753 7.7.2 Papers filed with the Division shall be signed and  
1754 dated by the well driller on whose behalf the filing is made or by  
1755 the well driller's authorized representative. The signature  
1756 constitutes certification that the well driller:

1757 7.7.2.1 Read the document;

1758 7.7.2.2 Knows the content thereof;

1759 7.7.2.3 To the best of the well driller's knowledge,  
1760 represents that the statements therein are true;

1761 7.7.2.4 Does not interpose the papers for delay; and

1762 7.7.2.5 If the well driller's signature does not appear on  
1763 the paper, authorized a representative with full power and  
1764 authority to sign the paper.

1765 7.7.3 All papers, except those submittals and documents that  
1766 are kept in a larger format during the ordinary course of  
1767 business, shall be submitted on an 8.5 x 11-inch paper. All  
1768 papers shall be legibly hand printed or typewritten.

1769 7.7.4 The Division may provide forms to be used by the  
1770 parties.

1771 7.7.5 The original of all papers shall be filed with the  
1772 Division with such number of additional copies as the Division may  
1773 reasonably require.

1774 7.7.6 Simultaneously with the filing of any and all papers  
1775 with the Division, the party filing such papers shall send a copy  
1776 to all other parties, or their authorized representative to the  
1777 proceedings, by hand delivery, or U.S. Mail, postage prepaid,  
1778 properly addressed.

#### 1779 7.8 Motions.

1780 7.8.1 A party may submit a request to the Presiding Officer  
1781 for any order or action not inconsistent with Utah law or these  
1782 rules. Such a request shall be called a motion. The types of

1783 motions made shall be those that are allowed under these Rules and  
1784 the Utah Rules of Civil Procedure.

1785 7.8.2 Motions may be made in writing at any time before or  
1786 after the commencement of a hearing, or they may be made orally  
1787 during a hearing. Each motion shall set forth the grounds for the  
1788 desired order or action and, if submitted in writing, state  
1789 whether oral argument is requested. A written supporting  
1790 memorandum, specifying the legal basis and support of the party's  
1791 position shall accompany all motions.

1792 7.8.3 The Presiding Officer may, upon the Presiding  
1793 Officer's own initiative or upon the motion of any party, order  
1794 any party to file a response or other pleading, and further permit  
1795 either party to amend its pleadings in a manner just to all  
1796 parties.

1797 7.9 Conduct of Hearings.

1798 7.9.1 All parties, authorized representatives, witnesses and  
1799 other persons present at the hearing shall conduct themselves in a  
1800 manner consistent with the standards and decorum commonly observed  
1801 in Utah courts. Where such decorum is not observed, the Presiding  
1802 Officer may take appropriate action including adjournment, if  
1803 necessary.

1804 7.9.2 The Presiding Officer shall conduct the hearing, make  
1805 all decisions regarding admission or exclusion of evidence or any  
1806 other procedural matters, and have an oath or affirmation  
1807 administered to all witnesses.

1808 7.10 Rules of Evidence in Hearings.

1809 7.10.1 Discovery is prohibited, but the Division may issue  
1810 subpoenas or other orders to compel production of necessary  
1811 evidence.

1812 7.10.2 A party may call witnesses and present oral,  
1813 documentary, and other evidence.

1814 7.10.3 A party may comment on the issues and conduct cross-  
1815 examination of any witness as may be required for a full and true  
1816 disclosure of all facts relevant to any issue designated for  
1817 hearing, and as may affect the disposition of any interest which  
1818 permits the person participating to be a party.

1819 7.10.4 A witness' testimony shall be under oath or  
1820 affirmation.

1821 7.10.5 Any evidence may be presented by affidavit rather  
1822 than by oral testimony, subject to the right of any party to call  
1823 and examine or cross-examine the affiant.

1824 7.10.6 Relevant evidence shall be admitted.

1825 7.10.7 The Presiding Officer's decision may not be based  
1826 solely on hearsay.

1827 7.10.8 Official notice may be taken of all facts of which  
1828 judicial notice may be taken in Utah courts.

1829 7.10.9 All parties shall have access to public information  
1830 contained in the Division's files and to all materials and  
1831 information gathered in the investigation, to the extent permitted  
1832 by law.

1833 7.10.10 No evidence shall be admitted after completion of a  
1834 hearing or after a case is submitted on the record, unless  
1835 otherwise ordered by the Presiding Officer.

1836 7.10.11 Intervention is prohibited.

1837 7.10.12 A well driller appearing before the Presiding  
1838 Officer for the purpose of a hearing may be represented by a  
1839 licensed attorney. The Water Well Drilling Specialist shall  
1840 present evidence before a Presiding Officer supporting the State  
1841 Engineer's claim. At the State Engineer's discretion, other  
1842 Division staff or a representative from the office of the Attorney  
1843 General may also present supporting evidence.

1844 7.11 Transcript of Hearing.

1845 7.11.1 Testimony and argument at the hearing shall be  
1846 recorded electronically. The Division shall make copies of  
1847 electronic recordings available to any party, upon written  
1848 request. The fee charged for this service shall be equal to the  
1849 actual costs of providing the copy. The Division is not  
1850 responsible to supply any party with a transcript of a hearing.

1851 7.11.2 If any party shall cause to be produced a transcript  
1852 of a hearing, a copy of said transcript shall be filed with the  
1853 Division and provided to all other parties. By order of the  
1854 Presiding Officer and with the consent of all parties, such  
1855 written transcript may be deemed an official transcript.

1856 7.11.3 Corrections to an official transcript may be made  
1857 only to conform it to the evidence presented at the hearing.  
1858 Transcript corrections, agreed to by opposing parties, may be  
1859 incorporated into the record, if and when approved by the  
1860 Presiding Officer, at any time during the hearing, or after the  
1861 close of the adjudicative proceeding. The Presiding Officer may  
1862 call for the submission of proposed corrections and may determine  
1863 the disposition thereof at appropriate times during the course of  
1864 the proceeding.

1865 7.12 Procedures and Standards for Orders

1866 7.12.1 If the well driller attends the hearing, the  
1867 Presiding Officer shall issue a Final Judgment and Order.

1868 7.12.2 The Presiding Officer may issue a Default Order if,  
1869 after proper notice, the well driller fails to attend a hearing  
1870 scheduled by the Presiding Officer.

1871 7.12.3 Within a reasonable time after the close of a well  
1872 driller adjudicative proceeding, the Presiding Officer shall issue  
1873 a written and signed Final Judgment and Order, including but not  
1874 limited to:

1875 7.12.3.1 A statement of law and jurisdiction;

1876 7.12.3.2 A statement of facts;

1877 7.12.3.3 An identification of the confirmed infraction(s);

1878 7.12.3.4 An order setting forth actions required of the well  
1879 driller;

1880 7.12.3.5 A notice of the option to request reconsideration  
1881 and the right to petition for judicial review;

1882 7.12.3.6 The time limits for requesting reconsideration or  
1883 filing a petition for judicial review; and

1884 7.12.3.7 Other information the Presiding Officer deems  
1885 necessary or appropriate.

1886 7.12.4 The Presiding Officer's Final Judgment and Order  
1887 shall be based on the record, as defined in this rule.

1888 7.12.5 A copy of the Presiding Officer's Final Judgment and  
1889 Order shall be promptly mailed to each of the parties.

1890 7.12.6 A well driller who fails to attend a hearing waives

1891 any right to request reconsideration of the Final Judgment and  
1892 Order per Section R655-4- 13, but may petition for judicial review  
1893 per Section R655-4-16.

1894 7.13 Reconsideration.

1895 7.13.1 Within 14 days after the Presiding Officer issues a  
1896 Final Judgment and Order, any party may file a written request for  
1897 reconsideration stating the specific grounds upon which relief is  
1898 requested.

1899 7.13.2 Unless otherwise provided by statute, the filing of a  
1900 request for reconsideration is not a prerequisite for seeking  
1901 judicial review of the order.

1902 7.13.3 The request for reconsideration shall be filed with  
1903 the Division to the attention of the Presiding Officer and one  
1904 copy shall be mailed to each party by the party filing the  
1905 request.

1906 7.13.4 The Presiding Officer may issue a written order  
1907 granting or denying the request for reconsideration. It is not  
1908 required that the written order explain the grounds for the  
1909 Presiding Officer's decision.

1910 7.13.5 If the Presiding Officer does not issue an order  
1911 granting a request for reconsideration within 14 days after the  
1912 date it is filed with the Division, the request shall be  
1913 considered denied.

1914 7.14 Amending Administrative Orders.

1915 7.14.1 On the motion of any party or of the Presiding  
1916 Officer, the Presiding Officer may amend a Final Judgment and  
1917 Order for reasonable cause shown, including but not limited to a  
1918 clerical mistake made in the preparation of the order.

1919 7.14.2 A motion by any party to amend an order shall be made  
1920 in a reasonable time and, if to amend a Final Judgment and Order,  
1921 not more than three (3) months after the Final Judgment and Order  
1922 was issued.

1923 7.14.3 The Presiding Officer shall notify the parties of the  
1924 receipt and consideration of a motion to amend an order by issuing  
1925 a notice. The notice shall include a copy of the motion.

1926 7.14.4 Any party opposing a motion to amend an order may  
1927 submit information within the time period to be established by the  
1928 Presiding Officer's notice of the motion.

1929 7.14.5 After considering a motion to amend an order and any  
1930 relevant information received from the parties, the Presiding  
1931 Officer shall advise the parties of his determination. If the  
1932 Presiding Officer determines that the order shall be amended, the  
1933 Presiding Officer shall issue the amended order to all parties.

1934 7.15 Setting Aside a Final Judgment and Order.

1935 7.15.1 On the motion of any party or on a motion by the  
1936 Presiding Officer, the Presiding Officer may set aside a Final  
1937 Judgment and Order on any reasonable grounds, including but not  
1938 limited to the following:

1939 7.15.1.1 The well driller was not properly served with an  
1940 Infraction Notice;

1941 7.15.1.2 A rule or policy was not followed when the Final  
1942 Judgment and Order was issued;

1943 7.15.1.3 Mistake, inadvertence, excusable neglect;

1944 7.15.1.4 Newly discovered evidence which by due diligence

1945 could not have been discovered before the Presiding officer issued  
1946 the Final Judgment and Order; or

1947 7.15.1.5 Fraud, misrepresentation or other misconduct of an  
1948 adverse party;

1949 7.15.2 A motion to set aside a final order shall be made in  
1950 a reasonable time and not more than three (3) months after the  
1951 Final Judgment and Order was issued.

1952 7.15.3 The Presiding Officer shall notify the parties of the  
1953 receipt and consideration of a motion to set aside a final order  
1954 by issuing a notice to all parties, including therewith a copy of  
1955 the motion.

1956 7.15.4 Any party opposing a motion to set aside a final  
1957 order may submit information within the time period to be  
1958 established by the Presiding Officer's notice of the motion.

1959 7.15.4 After consideration of the motion to set aside an  
1960 order and any information received from the parties, the Presiding  
1961 Officer shall issue an order granting or denying the motion, and  
1962 provide a copy of the order to all parties.

1963 7.16 Judicial Review.

1964 7.16.1 Pursuant to Section 73-3-14, a Final Judgment and  
1965 Order may be reviewed by trial de novo by the district court:

1966 7.16.1.1 In Salt Lake County; or

1967 7.16.1.2 In the county where the violation occurred.

1968 7.16.2 A well driller shall file a petition for judicial  
1969 review of a Final Judgment and Order within 20 days from the day  
1970 on which the order was issued, or if a request for reconsideration  
1971 has been filed and denied, within 20 days of the date of denial of  
1972 the request for reconsideration.

1973 7.16.3 The Presiding Officer may grant a stay of an order or  
1974 other temporary remedy during the pendency of the judicial review  
1975 on the Presiding Officer's own motion, or upon the motion of a  
1976 party. The procedures for notice, for consideration of motions,  
1977 and for issuing a determination shall be as set forth herein for a  
1978 motion to set aside a Final Judgment and Order.

1981 **R655-4-86. License and Operator Registration Renewal of Well**  
1982 **Driller's License and Operator's Registration.**

1983 86.1 Well Driller's and Pump Installer Licenses. The  
1984 Division will mail to each licensed well driller and pump  
1985 installer a notice (packet) to renew his/her license  
1986 approximately 30 days before the expiration of the license.  
1987 Failure to receive the notice does not relieve a licensee of his  
1988 obligation to file application and pay the fee for renewal in a  
1989 timely manner. A well driller shall notify the Division of any  
1990 change in his mailing address within 30 days after the change.

1991 86.1.1 ~~Water~~ Well driller licenses and Pump Installer  
1992 licenses shall expire and be renewed according to the following  
1993 provisions:

1994 a. The licenses of well drillers and pump installers whose  
1995 last name begins with A thru L shall expire at 12 midnight on June  
1996 30 of odd numbered years.

1997 b. The licenses of well drillers and pump installers whose  
1998 last name begins with M thru Z shall expire at 12 midnight on June

1999 30 of even numbered years.

2000 c. Drillers and pump installers who meet the renewal  
2001 requirements set forth in Subsection R655-4-~~86~~(86.1.2) on or  
2002 before the expiration deadlines set forth in Subsection R655-4-  
2003 ~~86~~(86.1.1) shall be authorized to operate as a licensed well  
2004 driller or pump installer until the new license is issued.

2005 d. ~~Drillers-Licensees~~ must renew their licenses within 24  
2006 months of the license expiration date. ~~Drillers-Licensees~~ failing  
2007 to renew within 24 months of the license expiration date must re-  
2008 apply for a ~~well driller's~~ license, meet all the application  
2009 requirements of Subsections R655-4-3(3.2) or R655-4-3(3.4), and  
2010 provide documentation of 12 hours of continuing education  
2011 according to the requirements of R655-4-~~86~~(86.2) obtained within  
2012 the previous 24 months.

2013 86.1.2 Applications to renew a ~~well driller's~~ license must  
2014 include the following items:

2015 a. Payment of the license renewal fee determined and  
2016 approved by the legislature;

2017 b. Written application to the state engineer;

2018 c. Documentation of continuing well driller bond coverage in  
2019 the amount of five thousand dollars (\$5,000) penal bond for the  
2020 next licensing period ~~calendar year~~. The form and conditions of  
2021 the well driller bond shall be as set forth in Section 4.3.  
2022 Allowable documentation can include bond continuation certificates  
2023 and CD statements;

2024 d. Proper submission of all start cards, official well  
2025 driller reports (well logs), pump installer reports (pump logs),  
2026 and well abandonment reports for the current licensing period.  
2027 This requirement only applies to a well driller's license;

2028 e. Documentation of compliance with the continuing education  
2029 requirements described in Section 6.2.1. Acceptable documentation  
2030 of attendance at approved courses must include the following  
2031 information: the name of the course, the date it was conducted,  
2032 the number of approved credits, the name and signature of the  
2033 instructor and the ~~driller's~~ licensees name; for example,  
2034 certificates of completion, transcripts, attendance rosters,  
2035 diplomas, etc. (Note: ~~drillers~~ licensees are advised that the  
2036 state engineer will not keep track of the continuing education  
2037 courses each ~~driller~~ licensee attends during the year. ~~Drillers~~  
2038 Licensees are responsible to acquire and then submit documentation  
2039 with the renewal application.)

2040 86.1.3 License renewal applications that do not meet the  
2041 requirements of Subsection R655-5-~~86~~(86.1.2) by June 30 of the  
2042 expiration year or which are received after June 30 of the  
2043 expiration year, will be assessed an additional administrative  
2044 late fee determined and approved by the legislature.

2045 8.1.4 Restricted, conditioned, limited, or denied renewal  
2046 applications

2047 86.1.4.1 The state engineer may renew a license on a  
2048 restricted, conditional, or limited basis if the licensee's  
2049 performance and compliance with established rules and construction  
2050 standards indicates the scope of the licensee's permitted  
2051 activities should be reduced or that the licensee requires strict  
2052 supervision during a probationary period. ~~The state engineer may~~



2053 ~~renew a license on a restricted, conditional, or limited basis~~  
2054 ~~according to the driller's performance and compliance with~~  
2055 ~~established rules and construction standards. The state engineer~~  
2056 ~~my refuse to renew a license to a well driller if it appears that~~  
2057 ~~there has been a violation of these rules or a failure to comply~~  
2058 ~~with Section 73-3-25 of the Utah Code.~~

2059 8.1.4.2 The restricted, conditional, or limited license  
2060 shall state the restrictions, conditions, or limitations placed on  
2061 the licensee's regulated activity; whether the restrictions,  
2062 conditions, or limitations are permanent or time-limited; and the  
2063 requirements, if any, which must be met for the license to be re-  
2064 issued without restrictions, conditions, or limitations.

2065 8.1.4.3 The state engineer may deny an application to  
2066 renew a license if there has been a violation of these rules or  
2067 UTAH CODE ANNOTATED §73-3-25 that casts doubt on the competency of  
2068 the licensee or his willingness to comply with the well drilling  
2069 administrative requirements or construction standards.

2070 8.1.4.4 Within 30 days of a license renewal application  
2071 being denied or a license being renewed on a restricted,  
2072 conditioned, or limited basis, a licensee may appeal the action by  
2073 requesting a hearing according to the provisions of R655-4-7.

2074 8.1.4.5 The restrictions, conditions, or limitations on a  
2075 license or the denial of a license shall remain effective during  
2076 the pendency of the well driller/pump installer adjudicative  
2077 proceeding.

2078 86.2 Continuing Education.

2079 86.2.1 During each license period, licensed well drillers  
2080 and pump installers are required to earn at least twelve (12)  
2081 continuing education credits by attending training sessions  
2082 sponsored or sanctioned by the state engineer. Drillers and pump  
2083 installers who do not renew their licenses, but who intend to  
2084 renew within the following 24 month period allowed in Section  
2085 86.1.1, are also required to earn twelve (12) continuing education  
2086 credits.

2087 6.2.2 The state engineer shall establish a committee  
2088 consisting of the state engineer or a representative, no more than  
2089 four licensed well drillers/pump installers, a ground water  
2090 scientist, and a manufacturer/supplier of well drilling/pump  
2091 products. The committee will develop criteria for the training  
2092 courses, approve the courses which can offer continuing education  
2093 credits, and assign the number of credits to each course. The  
2094 committee will make recommendations to the state engineer  
2095 concerning appeals from training course sponsors and well  
2096 drillerslicensees related to earning continuing education credit.

2097 86.2.3 The committee established in Section 86.2.2 shall  
2098 assign the number of continuing education credits to each proposed  
2099 training session based on the instructor's qualifications, a  
2100 written outline of the subjects to be covered, and written  
2101 objectives for the session. Well-drillersLicensees wishing  
2102 continuing education credit for other training sessions shall  
2103 provide the committee with all information it needs to assign  
2104 continuing education requirements.

2105 86.2.4 Licensed drillers must complete a State Engineer-  
2106 sponsored "Administrative Rules for Well Drillers and Pump

2107 Installers" review course or other approved rules review once  
2108 every four (4) years.

2109 86.2.5 CE credits cannot be carried over from one licensing  
2110 period to another.

2111 86.3 ~~Drill Rig~~ Operator's Registration.

2112 86.3.1 Drill Rig and Pump Rig ~~All~~ operator's registrations  
2113 shall expire at the same time as the license of the well driller  
2114 or pump installer by whom they are employed. Operators who meet  
2115 the renewal requirements set forth in Subsection R655-4-86(86.3.2)  
2116 on or before 12 midnight June 30 of the expiration year shall be  
2117 authorized to act as a registered operator until the new  
2118 registration is issued. Operators must renew their registrations  
2119 within 24 months of the registration expiration date. Operators  
2120 failing to renew within 24 months of the registration expiration  
2121 date must re-apply for an operator's registration and meet all the  
2122 application requirements of Subsections R655-4-3(3.3) and R655-4-  
2123 3(3.5).

2124 6.3.2 Applications to renew an operator's registration must  
2125 include the following items:

2126 a. Payment of the registration renewal fee determined and  
2127 approved by the legislature;

2128 b. Written application to the state engineer.

2129 6.3.3 Registration renewal applications that do not meet the  
2130 requirements of Subsection R655-4-86(86.3.2) by the June 30  
2131 expiration date or that are received after the June 30 expiration  
2132 date will be assessed an additional administrative late fee  
2133 determined and approved by the legislature.

2134

#### 2135 **R655-4-97. The Approval Process for Non-Production Wells.**

2136 97.1 General.

2137 Regulated non-production wells such as cathodic protection  
2138 wells, closed-loop heating ~~or~~ /cooling exchange wells, ~~and~~  
2139 monitor/piezometer/test wells, and other wells meeting the  
2140 criteria in R655-4-1(1.2.4) drilled and constructed to a depth  
2141 greater than 30 feet below natural ground surface require approval  
2142 from the state engineer.

2143 97.2 Approval to Construct or Replace.

2144 Approval to construct or replace non-production wells is  
2145 issued by the state engineer's main office and regional offices  
2146 following review of written requests from the owner ~~or~~ applicant  
2147 or their appointed representative not to include the designated  
2148 licensed driller, federal or state agency or engineering  
2149 ~~representative~~. The requests for approval shall be made on forms  
2150 provided by the state engineer entitled "Request for Non-  
2151 Production Well Construction". The following information must be  
2152 included on the form:

2153 a. General location or common description of the project.

2154 b. Specific course and distance locations from established  
2155 government surveyed outside section corners or quarter corners.

2156 c. Total anticipated number of wells to be installed.

2157 d. Diameters, approximate depths and materials used in the  
2158 wells.

2159 e. Projected start and completion dates.

2160 f. Name and license number of the driller contracted to

2161 install the wells.

2162 g. A detailed explanation of the purpose and technical  
2163 aspects of the drilling project. This can also include reviews  
2164 and approvals (e.g., building permits) done by local jurisdictions  
2165 of the project. This additional documentation may expedite the  
2166 Division's processing of the non-production well application.

2167 h. An accounting of the effects of the drilling project on  
2168 historic properties provided on a separate Historic Property  
2169 Effect Evaluation form provided by the Division to satisfy Section  
2170 9-8-404, Utah Code Annotated and submitted to the Utah State  
2171 Historic Preservation Office.

2172 i. Signature of the well owner or authorized representative  
2173 attesting to the accuracy and truthfulness of the information on  
2174 the application. The licensed driller cannot be the signatory on  
2175 the non-production well application.

2176 9.2.1 There is no fee required to request approval to drill  
2177 a non-production well. Using available information and sources,  
2178 the Division will evaluate the potential for the non-production  
2179 well to become a contamination source or otherwise negatively  
2180 impact the groundwater resource prior to approval. This  
2181 evaluation can take up to 14 days to conduct. In areas of  
2182 concern, the Division shall list application information on its  
2183 website to allow the public and local jurisdictions to review the  
2184 project. The well permit application shall be returned without  
2185 review to the applicant if the Division determines that the  
2186 application is incomplete, contains inaccurate information, lacks  
2187 sufficient information or is illegible. The Division shall deny  
2188 the issuance of a well permit if the site where the well is to be  
2189 drilled is designated by the Division as an area where wells may  
2190 not be constructed, including but not limited to contaminated or  
2191 protected aquifers, areas where drilling and construction of  
2192 wells can impact other water rights, and other areas where  
2193 environmental remediation may be adversely affected by the  
2194 construction and/or operation of wells. Upon written approval by  
2195 the state engineer, the project will be assigned an approved non-  
2196 production well number which will be referenced on all start cards  
2197 and official well driller's reports.

2198  
2199 **R655-4-108. General Requirements.**

2200 108.1 Standards.

2201 108.1.1 In some locations, the compliance with the following  
2202 minimum standards will not result in a well being free from  
2203 pollution or from being a source of subsurface leakage, waste, or  
2204 contamination of the groundwater resource. Since it is  
2205 impractical to attempt to prepare standards for every conceivable  
2206 situation, the well driller or pump installer shall judge when to  
2207 construct or otherwise perform work on wells under more stringent  
2208 standards when such precautions are necessary to protect the  
2209 groundwater supply and those using the well in question. Other  
2210 state and local regulations pertaining to well drilling and  
2211 construction, groundwater protection, isolation distances (set  
2212 backs) from potential contamination sources and/or other  
2213 structures/boundaries, and water quality/testing regulations may  
2214 exist that are either more stringent than these rules or that

2215 specifically apply to a given situation. It is the ~~well~~  
2216 ~~driller's~~licensee's responsibility to understand and apply other  
2217 regulations as applicable.

2218 108.2 Well Site Locations.

2219 108.2.1 Well site locations are described by course and  
2220 distance from outside section corners or quarter corners (based on  
2221 a Section/Township/Range Cadastral System) and by the Universal  
2222 Transverse Mercator (UTM) coordinate system on all state engineer  
2223 authorizations to drill (Start Cards). However, the licensee  
2224 should also be familiar with local zoning ordinances, or county  
2225 boards of health requirements which may limit or restrict the  
2226 actual well location and construction in relationship to  
2227 property/structure boundaries and existing or proposed  
2228 concentrated sources of pollution or contamination such as septic  
2229 tanks, drain fields, sewer lines, stock corrals, feed lots, etc.  
2230 The licensee should also be familiar with the Utah Underground  
2231 Facilities Act (Title 54, Chapter 8a of the Utah Code Annotated  
2232 1953 as amended) which requires subsurface excavators (including  
2233 well drilling) to notify operators of underground utilities prior  
2234 to any subsurface excavation. Information on this requirement can  
2235 be found by calling Blue Stakes Utility Notification Center at  
2236 (800)662-4111.

2237 108.2.2 Regulated wells shall be drilled at the approved  
2238 location as defined on the valid start card. The driller shall  
2239 check the drilling location to see if it matches the state-  
2240 approved location listed on the Driller's Start Card.

2241 108.3 Unusual Conditions.

2242 108.3.1 If unusual conditions occur at a well site and  
2243 compliance with these rules and standards will not result in a  
2244 satisfactory well or protection to the groundwater supply, a  
2245 licensed water well driller or pump installer shall request that  
2246 special standards be prescribed for a particular well (variance  
2247 request). The request for special standards shall be in writing  
2248 and shall set forth the location of the well, the name of the  
2249 owner, the unusual conditions existing at the well site, the  
2250 reasons and justification that compliance with the rules and  
2251 minimum standards will not result in a satisfactory well, and the  
2252 proposed standards that the licensee ~~ed water well driller~~ believes  
2253 will be more adequate for this particular well. If the state  
2254 engineer finds that the proposed changes are in the best interest  
2255 of the public, ~~he~~ the state engineer will approve the proposed  
2256 changes by assigning special standards for the particular well  
2257 under consideration. At the Division's discretion, the proponent  
2258 may be required to provide additional technical information  
2259 justifying the variance. The variance request will be evaluated,  
2260 and a response will be given within fourteen days. In a public  
2261 health emergency or other exceptional circumstance, verbal  
2262 notification for a variance may be given. An emergency usually  
2263 consists of a well failure resulting in a dry well or an unusable  
2264 well. Driller convenience does not constitute an emergency.

2265

2266 **R655-4-119. Well Drilling and Construction Requirements.**

2267 119.0 General.

2268 119.0.1 Figures 1 through 5 are used to illustrate typical

2269 well construction standards, and can be viewed in the State of  
2270 Utah Water Well Handbook available at the Division of Water  
2271 Rights, 1594 West North Temple, Salt Lake City, Utah. Figure 1  
2272 illustrates the typical construction of a drilled well with driven  
2273 casing such as a well drilled using the cable tool method or air  
2274 rotary with a drill-through casing driver. Figure 2 illustrates  
2275 the typical construction of a well drilled with an oversized  
2276 borehole and/or gravel packed without the use of surface casing.  
2277 Figure 3 illustrates the typical construction of a well drilled  
2278 with an oversized borehole and/or gravel packed with the use of  
2279 surface casing. Figure 4 illustrates the typical construction of  
2280 a well drilled with an oversized borehole and/or gravel packed  
2281 completed in stratified formations in which poor formation  
2282 material or poor quality water is encountered. Figure 5  
2283 illustrates the typical construction of a well completed with PVC  
2284 or nonmetallic casing.

2285 [119.1](#) Approved Products, Materials, and Procedures.

2286 [119.1.1](#) Any product, material or procedure designed for use  
2287 in the drilling, construction, cleaning, renovation, development  
2288 [pump installation/repair](#), or abandonment of water [production or](#)  
2289 [non-production wells](#) ~~or monitor wells~~, which has received  
2290 certification and approval for its intended use by the National  
2291 Sanitation Foundation (NSF) under ANSI/NSF Standard 60 or 61, the  
2292 American Society for Testing Materials (ASTM), the American Water  
2293 Works Association (AWWA) or the American National Standards  
2294 Institute (ANSI) may be utilized. Other products, materials or  
2295 procedures may also be utilized for their intended purpose upon  
2296 manufacturers certification that they meet or exceed the standards  
2297 or certifications referred to in this section and upon state  
2298 engineer approval.

2299 [119.2](#) Well Casing - General

2300 [119.2.1](#) Drillers Responsibility. It shall be the sole  
2301 responsibility of the well driller to determine the suitability of  
2302 any type of well casing for the particular well being constructed,  
2303 in accordance with these minimum requirements.

2304 [119.2.2](#) Casing Stick-up. The well casing shall extend a  
2305 minimum of 18 inches above finished ground [\(land\)](#) level and the  
2306 natural ground surface should slope away from the casing. A  
2307 secure sanitary, weatherproof seal or a completely welded cap  
2308 shall be placed on the top of the well casing to prevent  
2309 contamination of the well. If a vent is placed in the cap, it  
2310 shall be properly screened to prevent access to the well by  
2311 debris, insects, or other animals.

2312 [119.2.3](#) Steel Casing. All steel casing installed in Utah  
2313 shall be in new or like-new condition, being free from pits or  
2314 breaks, clean with all potentially dangerous chemicals or coatings  
2315 removed, and shall meet the minimum specifications listed in Table  
2316 5 of these rules. In order to utilize steel well casing that does  
2317 not fall within the categories specified in Table 5, the driller  
2318 shall receive written approval from the state engineer. All steel  
2319 casing installed in Utah shall meet or exceed the minimum ASTM,  
2320 ANSI, or AWWA standards for steel pipe as described in Subsection  
2321 [119.1](#) unless otherwise approved by the state engineer. Applicable  
2322 standards (most recent revisions) may include:

- 2323 ANSI/AWWA A100-AWWA Standard for Water Wells.
- 2324 ANSI/ASTM A53-Standard Specifications for Pipe, Steel, Black
- 2325 and Hot-Dipped, Zinc-Coated, Welded and Seamless.
- 2326 ANSI/ASTM A139-Standard Specification for Electric-Fusion
- 2327 (Arc)-Welded Steel Pipe (NPS 4 and over).
- 2328 ANSI/AWWA C200-Standard for Steel Water Pipe-6 in. and
- 2329 Larger.
- 2330 [ASTM A589-89-Standard Specification for Seamless and Welded](#)
- 2331 [Carbon Steel Water-Well Pipe.](#)
- 2332 API Spec.5L [and 5LS](#)-Specification for Liner Pipe.
- 2333 ASTM A106-Standard Specification for Seamless Carbon Steel
- 2334 Pipe for High Temperature Service
- 2335 ASTM A778-Standard Specifications for Welded, Unannealed
- 2336 Austenitic Stainless Steel Tubular Products.
- 2337 ASTM A252-Standard Specification for Welded and Seamless
- 2338 Steel Pipe Piles.
- 2339 ASTM A312-Standard Specification for Seamless, Welded, and
- 2340 Heavily Cold Worked Austenitic Stainless Steel Pipes
- 2341 [ASTM A409- Standard Specification for Welded Large Diameter](#)
- 2342 [Austenitic Steel Pipe for Corrosive or High-Temperature Service](#)
- 2343

TABLE 5  
MINIMUM WALL THICKNESS FOR STEEL WELL CASING

Depth	0	200	300	400	600	800	1000	1500
Nominal	to	to	to	to	to	to	to	to
Casing	200	300	400	600	800	1000	1500	2000
Diameter	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
2	.154	.154	.154	.154	.154	.154		
3	.216	.216	.216	.216	.216	.216		
4	.237	.237	.237	.237	.237	.237	.237	.237
5	.250	.250	.250	.250	.250	.250	.250	.250
6	.250	.250	.250	.250	.250	.250	.250	.250
8	.250	.250	.250	.250	.250	.250	.250	.250
10	.250	.250	.250	.250	.250	.250	.312	.312
12	.250	.250	.250	.250	.250	.250	.312	.312
14	.250	.250	.250	.250	.312	.312	.312	.312
16	.250	.250	.312	.312	.312	.312	.375	.375
18	.250	.312	.312	.312	.375	.375	.375	.438
20	.250	.312	.312	.312	.375	.375	.375	.438
22	.312	.312	.312	.375	.375	.375	.375	.438
24	.312	.312	.375	.375	.375	.438		
30	.312	.375	.375	.438	.438	.500		

Note: Minimum wall thickness is in inches.

- 2368
- 2369 [119.2.4](#) Plastic and Other Non-metallic Casing.
- 2370 [119.2.4.1](#) Materials. PVC, SR, ABS, or other types of non-
- 2371 metallic well casing and screen may be installed in Utah upon
- 2372 obtaining permission of the well owner. Plastic well casing and
- 2373 screen shall be manufactured and installed to conform with The
- 2374 American National Standards Institute (ANSI) or the American
- 2375 Society for Testing and Materials (ASTM) Standard F 480-95, which
- 2376 are incorporated by reference to these rules. Casing and screen



2377 meeting this standard is normally marked "WELL CASING" and with  
2378 the ANSI/ASTM designation "F 480-95, SDR-17 (or 13.5, 21, etc.)".

2379 All plastic casing and screen for use in potable water supplies  
2380 shall be manufactured to be acceptable to the American National  
2381 Standards Institute/National Sanitation Foundation (NSF) standard  
2382 61. Other types of plastic casings and screens may be installed  
2383 upon manufacturers certification that such casing meets or exceeds  
2384 the above described ASTM/SDR specification or ANSI/NSF approval  
2385 and upon state engineer approval.

2386 119.2.4.2 Minimum Wall Thickness and Depth Requirements. |  
2387 PVC well casing and screen with an outside diameter equal to or  
2388 less than four and one half (4.5) inches shall meet the minimum  
2389 wall thickness required under ASTM Standard F480-95 SDR 21 or a  
2390 Schedule 40 designation. PVC well casing and screen with an  
2391 outside diameter greater than four and one half (4.5) inches shall  
2392 meet the minimum wall thickness required under ASTM Standard F480-  
2393 95 SDR 17 or a Schedule 80 designation. Additionally, caution  
2394 should be used whenever other than factory slots or perforations  
2395 are added to PVC well casing. The installation of hand cut slots  
2396 or perforations significantly reduces the collapse strength  
2397 tolerances of unaltered casings. The depth at which plastic  
2398 casing and screen is placed in a well shall conform to the minimum  
2399 requirements and restrictions as outlined in ASTM Standard F-480-  
2400 95.

2401 119.2.4.3 Fiberglass Casing. Fiberglass reinforced plastic |  
2402 well casings and screens may be installed in wells upon obtaining  
2403 permission of the well owner. All fiberglass casing or screens  
2404 installed in wells for use in potable water supplies shall be  
2405 manufactured to be acceptable by ANSI/NSF Standard 61 and upon  
2406 state engineer approval.

2407 119.2.4.4 Driving Non-metallic Casing. Non-metallic casing |  
2408 shall not be driven, jacked, or dropped and may only be installed |  
2409 in an oversized borehole.

2410 119.2.4.5 Protective Casing. If plastic or other non- |  
2411 metallic casing is utilized, the driller shall install a |  
2412 protective steel casing which complies with the provisions of |  
2413 Subsection 119.2.3 or an equivalent protective covering approved |  
2414 by the state engineer over and around the well casing at ground |  
2415 surface to a depth of at least two and one half (2.5) feet. If a  
2416 pitless adapter is installed on the well, the bottom of the  
2417 protective cover shall be placed above the pitless adapter/well  
2418 connection. If the pitless adapter is placed in the protective  
2419 casing, the protective casing shall extend below the pitless  
2420 entrance in the well casing and be sealed both on the outside of  
2421 the protective casing and between the protective casing and well  
2422 casing. The protective cover shall be sealed in the borehole in  
2423 accordance with the requirements of Subsection 119.4. The annular |  
2424 space between the protective cover and non-metallic casing shall  
2425 also be sealed with acceptable materials in accordance with  
2426 Subsection 119.4. A sanitary, weather-tight seal or a completely |  
2427 welded cap shall be placed on top of the protective cover, thus  
2428 enclosing the well itself. If the sanitary seal is vented,  
2429 screens shall be placed in the vent to prevent debris insects, and  
2430 other animals from entering the well. This protective casing

2431 requirement does not apply to monitor wells. Figure 5 depicts  
2432 this requirement.

2433 [119.3 Casing Joints.](#)

2434 [119.3.1 General.](#) All well casing joints shall be made water  
2435 tight. In instances in which a reduction in casing diameter is  
2436 made, there shall be enough overlap of the casings to prevent  
2437 misalignment and to insure the making of an adequate seal in the  
2438 annular space between casings to prevent the movement of unstable  
2439 sediment or formation material into the well, in addition to  
2440 preventing the degradation of the water supply by the migration of  
2441 inferior quality water through the annular space between the two  
2442 casings.

2443 [119.3.2 Steel Casing.](#) All steel casing shall be screw-  
2444 coupled or welded. If the joints are welded, the weld shall  
2445 [American Welding Society standards and](#) be at least as thick as the  
2446 wall thickness of the casing and shall consist of at least two  
2447 beads for the full circumference of the joint. Spot welding of  
2448 joints is prohibited.

2449 [119.3.3 Plastic Casing.](#) All plastic well casing shall be  
2450 mechanically screw coupled, chemically welded, cam-locked or lug  
2451 coupled to provide water tight joints as per ANSI/ASTM F480-95.  
2452 Metal screws driven into casing joints shall not be long enough to  
2453 penetrate the inside surface of the casing. Metal screws should  
2454 be used only when surrounding air temperatures are below 50  
2455 degrees Fahrenheit (F) which retards the normal setting of the  
2456 cement. [Solvent-welded joints shall not impart taste, odors,  
2457 toxic substances, or bacterial contamination to the water in the  
2458 well.](#)

2459 [119.4 Surface Seals and Interval Seals.](#)

2460 [119.4.1 General.](#) Before the drill rig is removed from the  
2461 drill site of a well, a surface seal shall be installed. Well  
2462 casings shall be sealed to prevent the possible downward movement  
2463 of contaminated surface waters in the annular space around the  
2464 well casing. The seal shall also prevent the upward movement of  
2465 artesian waters within the annular space around the well casing.  
2466 Depending upon hydrogeologic conditions around the well, interval  
2467 seals may need to be installed to prevent the movement of  
2468 groundwater either upward or downward around the well from zones  
2469 that have been cased out of the well due to poor water quality or  
2470 other reasons. The following surface and interval seal  
2471 requirements apply equally to rotary drilled, cable tool drilled,  
2472 bored, jetted, augered, and driven wells unless otherwise  
2473 specified.

2474 [119.4.2 Seal Material.](#)

2475 [119.4.2.1 General.](#) The seal material shall consist of neat  
2476 cement grout, sand cement grout, unhydrated bentonite, or  
2477 bentonite grout as defined in Section R655-4-2. Use of sealing  
2478 materials other than those listed above must be approved by the  
2479 state engineer. Bentonite drilling fluid (drilling mud), dry  
2480 drilling bentonite, or drill cuttings are not an acceptable  
2481 sealing material. In no case shall drilling fluid (mud), drill  
2482 cuttings, drill chips, or puddling clay be used, or allowed to  
2483 fill, partially fill, or fall into the required sealing interval  
2484 of a well during construction of the well. All hydrated sealing

2485 materials (neat cement grout, sand cement grout, bentonite grout)  
2486 shall be placed by tremie pipe, pumping, or pressure from the  
2487 bottom of the seal interval upwards in one continuous operation  
2488 when placed below a depth of 30 feet or when placed below static  
2489 groundwater level. Portland Cement grouts must be allowed to cure  
2490 a minimum of 72 hours for Type I-II cement or 36 hours for Type  
2491 III cement before well drilling, construction, or testing may be  
2492 resumed. The volume of annular space in the seal interval shall  
2493 be calculated by the driller to determine the estimated volume of  
2494 seal material required to seal the annular space. The driller  
2495 shall place at least the volume of material equal to the volume of  
2496 annular space, thus ensuring that a continuous seal is placed.  
2497 The driller shall maintain the well casing centered in the  
2498 borehole during seal placement using centralizers or other means  
2499 to ensure that the seal is placed radially and vertically  
2500 continuous.

2501 119.4.2.2 Bentonite Grout. Bentonite used to prepare grout  
2502 for sealing shall have the ability to gel; not separate into water  
2503 and solid materials after it gels; have a hydraulic conductivity  
2504 or permeability value of  $10E-7$  centimeters per second or less;  
2505 contain at least 20 percent solids by weight of bentonite, and  
2506 have a fluid weight of 9.5 pounds per gallon or greater and be  
2507 specifically designed for the purpose of sealing. Bentonite or  
2508 polymer drilling fluid (mud) does not meet the definition of a  
2509 grout with respect to density, gel strength, and solids content  
2510 and shall not be used for sealing purposes. At no time shall  
2511 bentonite grout contain materials that are toxic, polluting,  
2512 develop odor or color changes, or serve as a micro-bacterial  
2513 nutrient. All bentonite grout shall be prepared and installed  
2514 according to the manufacturer's instructions and these rules. All  
2515 additives must be certified by a recognized certification  
2516 authority such as NSF and approved by the state engineer.

2517 119.4.2.3 Unhydrated Bentonite. Unhydrated bentonite (e.g.,  
2518 granular, tabular, pelletized, or chip bentonite) may be used in  
2519 the construction of well seals above a depth of 50 feet.  
2520 Unhydrated bentonite can be placed below a depth of 50 feet when  
2521 placed inside the annulus of two casings, when placed using a  
2522 tremie pipe, or by using a placement method approved by the state  
2523 engineer. The bentonite material shall be specifically designed  
2524 for well sealing and be within industry tolerances. All  
2525 unhydrated bentonite used for sealing must be free of organic  
2526 polymers and other contamination. Placement of bentonite shall  
2527 conform to the manufacturer's specifications and instructions and  
2528 result in a seal free of voids or bridges. Granular or powdered  
2529 bentonite shall not be placed under water by gravity feeding from  
2530 the surface. When placing unhydrated bentonite, a sounding or  
2531 tamping tool shall be run in the sealing interval during pouring  
2532 to measure fill-up rate, verify a continuous seal placement, and  
2533 to break up possible bridges or cake formation.

2534 119.4.3 Seal and Unperforated Casing Placement.

2535 119.4.3.1 General Seal Requirements. Figure 1 illustrates  
2536 the construction of a surface seal for a typical well. The  
2537 surface seal must be placed in an annular space that has a minimum  
2538 diameter of four (4) inches larger than the nominal size of the

2539 permanent well casing (This amounts to a 2-inch annulus). The  
2540 surface seal must extend from land surface to a minimum depth of  
2541 30 feet. The completed surface seal must fully surround the  
2542 permanent well casing, must be evenly distributed, free of voids,  
2543 and extend to undisturbed or recompacted soil. In unconsolidated  
2544 formations such as gravels, sands, or other unstable conditions  
2545 when the use of drilling fluid or other means of keeping the  
2546 borehole open are not employed, either a temporary surface casing  
2547 with a minimum depth of 30 feet and a minimum nominal diameter of  
2548 four (4) inches greater than the outermost permanent casing shall  
2549 be utilized to ensure proper seal placement or the well driller  
2550 shall notify the state engineer's office that the seal will be  
2551 placed in a potentially unstable open borehole without a temporary  
2552 surface casing by telephone or FAX in conjunction with the start  
2553 card submittal in order to provide an opportunity for the state  
2554 engineer's office to inspect the placement of the seal. If a  
2555 temporary surface casing is utilized, the surface casing shall be  
2556 removed in conjunction with the placement of the seal.  
2557 Alternatively, conductor casing may be sealed permanently in place  
2558 to a depth of 30 feet with a minimum 2-inch annular seal between  
2559 the surface casing and borehole wall. If the temporary surface  
2560 casing is to be removed, the surface casing shall be withdrawn as  
2561 sealing material is placed between the outer-most permanent well  
2562 casing and borehole wall. The sealing material shall be kept at a  
2563 sufficient height above the bottom of the temporary surface casing  
2564 as it is withdrawn to prevent caving of the borehole wall. If the  
2565 temporary conductor casing is driven in place without a 2-inch  
2566 annular seal between the surface casing and borehole wall, the  
2567 surface casing may be left in place in the borehole only if it is  
2568 impossible to remove because of unforeseen conditions and not  
2569 because of inadequate drilling equipment, or if the removal will  
2570 seriously jeopardize the integrity of the well and the integrity  
2571 of subsurface barriers to pollutants or contaminant movement. The  
2572 temporary surface casing can only be left in place without a  
2573 sufficient 2-inch annular seal as describe above with the approval  
2574 of the state engineer on a case by case basis. If the surface  
2575 casing is left in place, it shall be perforated to allow seal  
2576 material to penetrate through the casing and into the formation  
2577 and annular space between the surface casing and borehole wall.  
2578 Unhydrated bentonite shall not be used to construct the surface  
2579 seal when the surface casing is left in place. Grout seal  
2580 materials must be used to construct the surface seal when the  
2581 surface casing is left in place. The grout must be placed with  
2582 sufficient pressure to force the grout through the surface casing  
2583 perforations and into the annular space between the surface casing  
2584 and borehole wall and into the formation. Surface seals and  
2585 unperforated casing shall be installed in wells located in  
2586 unconsolidated formation such as sand and gravel with minor clay  
2587 or confining units; unconsolidated formation consisting of  
2588 stratified layers of materials such as sand, gravel, and clay or  
2589 other confining units; and consolidated formations according to  
2590 the following procedures.

2591 119.4.3.2 Unconsolidated Formation without Significant |  
2592 Confining Units. This includes wells that penetrate an aquifer

2593 overlain by unconsolidated formations such as sand and gravel  
2594 without significant clay beds (at least six feet thick) or other  
2595 confining formations. The surface seal must be placed in a 2-inch  
2596 annular space to a minimum depth of 30 feet. Permanent  
2597 unperforated casing shall extend at least to a depth of 30 feet  
2598 and also extend below the lowest anticipated pumping level.  
2599 Additional casing placed in the open borehole below the required  
2600 depths noted above shall meet the casing requirements of  
2601 Subsection 9.2 unless the casing is installed as a liner inside a  
2602 larger diameter approved casing.

2603 119.4.3.3 Unconsolidated Formation with Significant  
2604 Confining Units. This includes wells that penetrate an aquifer  
2605 overlain by clay or other confining formations that are at least  
2606 six (6) feet thick. The surface seal must be placed in a 2-inch  
2607 annular space to a minimum depth of 30 feet and at least five (5)  
2608 feet into the confining unit above the water bearing formation.  
2609 Unperforated casing shall extend from ground surface to at least  
2610 30 feet and to the bottom of the confining unit overlying the  
2611 water bearing formation. If necessary to complete the well, a  
2612 smaller diameter casing, liner, or well screen may be installed  
2613 below the unperforated casing. The annular space between the two  
2614 casings shall be sealed with grout, bentonite, or a mechanical  
2615 packer. Additional casing placed in the open borehole below the  
2616 required depths noted above shall meet the casing requirements of  
2617 Subsection 119.2 unless the casing is installed as a liner inside  
2618 a larger diameter approved casing.

2619 119.4.3.4 Consolidated Formation. This includes drilled  
2620 wells that penetrate an aquifer, either within or overlain by a  
2621 consolidated formation. The surface seal must be placed in a 2-  
2622 inch annular space to a minimum depth of 30 feet and at least five  
2623 (5) feet into competent consolidated formation. Unperforated  
2624 permanent casing shall be installed to extend to a depth of at  
2625 least 30 feet and the lower part of the casing shall be driven and  
2626 sealed at least five (5) feet into the consolidated formation. If  
2627 necessary to complete the well, a smaller diameter casing, liner,  
2628 or well screen may be installed below the unperforated casing.  
2629 The annular space between the two casings shall be sealed with  
2630 grout, bentonite, or a mechanical packer. Additional casing  
2631 placed in the open borehole below the required depths noted above  
2632 shall meet the casing requirements of Subsection 119.2 unless the  
2633 casing is installed as a liner inside a larger diameter approved  
2634 casing.

2635 119.4.3.5 Sealing Artesian Wells. Unperforated well casing  
2636 shall extend into the confining stratum overlying the artesian  
2637 zone, and shall be adequately sealed into the confining stratum to  
2638 prevent both surface and subsurface leakage from the artesian  
2639 zone. If leaks occur around the well casing or adjacent to the  
2640 well, the well shall be completed with the seals, packers, or  
2641 casing necessary to eliminate the leakage. The driller shall not  
2642 move the drilling rig from the well site until leakage is  
2643 completely stopped, unless authority for temporary removal of the  
2644 drilling rig is granted by the state engineer, or when loss of  
2645 life or property is imminent. If the well flows naturally at land  
2646 surface due to artesian pressure, the well shall be equipped with



2647 a control valve so that the flow can be completely stopped. The  
2648 control valve must be available for inspection by the state  
2649 engineer at all times. All flowing artesian water supply wells  
2650 shall be tested for artesian shut-in pressure in pounds per  
2651 square inch and rate of flow in cubic feet per second, or gallons  
2652 per minute, under free discharge conditions. This data shall be  
2653 reported on the well log.

2654 119.4.4 Interval Seals. Formations containing undesirable  
2655 materials (e.g., fine sand and silt that can damage pumping  
2656 equipment and result in turbid water), contaminated groundwater,  
2657 or poor quality groundwater must be sealed off so that the  
2658 unfavorable formation cannot contribute to the performance and  
2659 quality of the well. These zones must also be sealed to eliminate  
2660 the potential of cross contamination or commingling between two  
2661 aquifers of differing quality. Figure 4 illustrates this  
2662 situation. Unless approved by the state engineer, construction of  
2663 wells that cause the commingling or cross connection of otherwise  
2664 separate aquifers is not allowed.

2665 119.4.5 Other Sealing Methods. In wells where the above-  
2666 described methods of well sealing do not apply, special sealing  
2667 procedures can be approved by the state engineer upon written  
2668 request by the licensed well driller.

2669 119.5 Special Requirements for Oversized and Gravel Packed  
2670 Wells. This section applies to wells in which casing is installed  
2671 in an open borehole without driving or drilling in the casing and  
2672 an annular space is left between the borehole wall and well casing  
2673 (e.g., mud rotary wells, flooded reverse circulation wells, air  
2674 rotary wells in open bedrock).

2675 119.5.1 Oversized Borehole. The diameter of the borehole  
2676 shall be at least four (4) inches larger than the outside diameter  
2677 of the well casing to be installed to allow for proper placement  
2678 of the gravel pack and/or formation stabilizer and adequate  
2679 clearance for grouting and surface seal installations. In order  
2680 to accept a smaller diameter casing in any oversized borehole  
2681 penetrating unconsolidated or stratified formations, the annular  
2682 space must be sealed in accordance with Subsection 119.4. In  
2683 order to minimize the risk of: 1) borehole caving or collapse; 2)  
2684 casing failure or collapse; or 3) axial distortion of the casing,  
2685 it is recommended that the entire annular space in an oversized  
2686 borehole between the casing and borehole wall be filled with  
2687 formation stabilizer such as approved seal material, gravel pack,  
2688 filter material or other state engineer-approved materials. Well  
2689 casing placed in an oversized borehole should be suspended at the  
2690 ground surface until all formation stabilizer material is placed  
2691 in order to reduce axial distortion of the casing if it is allowed  
2692 to rest on the bottom of an open oversized borehole. In order to  
2693 accept a smaller diameter casing, the annular space in an  
2694 oversized borehole penetrating unconsolidated formations (with no  
2695 confining layer) must be sealed in accordance with Subsection 9.4  
2696 to a depth of at least 30 feet or from static water level to  
2697 ground surface, whichever is deeper. The annular space in an  
2698 oversized borehole penetrating stratified or consolidated  
2699 formations must be sealed in accordance with Subsection 9.4 to a  
2700 depth of at least 30 feet or five (5) feet into an impervious



2701 strata (e.g., clay) or competent consolidated formation overlying  
2702 the water producing zones back to ground surface, whichever is  
2703 deeper. Especially in the case of an oversized borehole, the  
2704 requirements of Subsection 9.4.4 regarding interval sealing must  
2705 be followed.

2706 119.5.2 Gravel Pack or Filter Material. The gravel pack or  
2707 filter material shall consist of clean, well-rounded, chemically  
2708 stable grains that are smooth and uniform. The filter material  
2709 should not contain more than 2% by weight of thin, flat, or  
2710 elongated pieces and should not contain organic impurities or  
2711 contaminants of any kind. In order to assure that no  
2712 contamination is introduced into the well via the gravel pack, the  
2713 gravel pack must be washed with a minimum 100 ppm solution of  
2714 chlorinated water or dry hypochlorite mixed with the gravel pack  
2715 at the surface before it is introduced into the well (see Table 6  
2716 of these rules for required amount of chlorine material).

2717 119.5.3 Placement of Filter Material. All filter material  
2718 shall be placed using a method that through common usage has been  
2719 shown to minimize a) bridging of the material between the borehole  
2720 and the casing, and b) excessive segregation of the material after  
2721 it has been introduced into the annulus and before it settles into  
2722 place. It is not acceptable to place filter material by pouring  
2723 from the ground surface unless proper sounding devices are  
2724 utilized to measure dynamic filter depth, evaluate pour rate, and  
2725 minimize bridging and formation of voids.

2726 119.5.4 No Surface Casing Used. If no permanent conductor  
2727 casing is installed, neat cement grout, sand cement grout,  
2728 bentonite grout, or unhydrated bentonite seal shall be installed  
2729 in accordance with Subsection 119.4. Figure 2 of these rules  
2730 illustrates the construction of a typical well of this type.

2731 119.5.5 Permanent Conductor Casing Used. If permanent  
2732 conductor casing is installed, it shall be unperforated and  
2733 installed and sealed in accordance with Subsection 119.4 as  
2734 depicted in Figure 3 of these rules. After the gravel pack has  
2735 been installed between the conductor casing and the well casing,  
2736 the annular space between the two casings shall be sealed by  
2737 either welding a water-tight steel cap between the two casings at  
2738 land surface or filling the annular space between the two casings  
2739 with neat cement grout, sand cement grout, bentonite grout, or  
2740 unhydrated bentonite from at least 50 feet to the surface and in  
2741 accordance with Subsection 119.4. If a hole will be created in  
2742 the permanent conductor casing in order to install a pitless  
2743 adapter into the well casing, the annular space between the  
2744 conductor casing and well casing shall be sealed to at least a  
2745 depth of thirty (30) feet with neat cement grout, sand cement  
2746 grout, bentonite grout, or unhydrated bentonite. A waterproof cap  
2747 or weld ring sealing the two casings at the surface by itself  
2748 without the annular seal between the two casings is unacceptable  
2749 when a pitless adapter is installed in this fashion. Moreover in  
2750 this case, the annular space between the surface casing and well  
2751 casing must be at least 2 inches in order to facilitate seal  
2752 placement.

2753 119.5.6 Gravel Feed Pipe. If a gravel feed pipe, used to  
2754 add gravel to the gravel pack after well completion, is installed,

2755 the diameter of the borehole in the sealing interval must be at  
2756 least four (4) inches in diameter greater than the permanent  
2757 casing plus the diameter of the gravel feed pipe. The gravel feed  
2758 pipe must be completely surrounded by the seal. The gravel feed  
2759 pipe must extend at least 18 inches above ground and must be  
2760 sealed at the top with a watertight cap or plug (see Figure 2).

2761 11.5.7 Other Gravel Feed Options. If a permanent surface  
2762 casing is installed in the construction of a filter pack well, a  
2763 watertight, welded, steel plate (ring) at least 3/16 of an inch  
2764 in thickness shall be installed between the inner production  
2765 casing and the outer surface casing at the well head. A  
2766 watertight fill port with threaded cap may be installed for the  
2767 purpose of placing additional filter pack material in the well.

2768 119.6 Protection of the Aquifer.

2769 119.6.1 Drilling Fluids and LCMs. The well driller shall  
2770 take due care to protect the producing aquifer from clogging or  
2771 contamination. Organic substances shall not be introduced into  
2772 the well or borehole during drilling or construction. Every  
2773 effort shall be made to remove all substances and materials  
2774 introduced into the aquifer or aquifers during well construction.

2775 "Substances and materials" shall mean all bentonite- and polymer-  
2776 based drilling fluids, filter cake, and any other inorganic  
2777 substances added to the drilling fluid that may seal or clog the  
2778 aquifer. The introduction of lost circulation materials (LCM's)  
2779 during the drilling process shall be limited to those products  
2780 which will not present a potential medium for bacterial growth or  
2781 contamination. Only LCM's which are non-organic, which can be  
2782 safely broken down and removed from the borehole, may be utilized.

2783 This includes, but is not limited to, paper/wood products, brans,  
2784 hulls, grains, starches, hays/straws, and proteins. This is  
2785 especially important in the construction of wells designed to be  
2786 used as a public water system supply. All polymers and additives  
2787 used in any well shall be certified by NSF/ANSI approval  
2788 standards for use in potable water supply wells, or equivalent  
2789 standards as approved by the Division. The product shall be  
2790 clearly labeled as meeting these standards. Polymers and  
2791 additives must be designed and manufactured to meet industry  
2792 standards to be nondegrading and must not act as a medium which  
2793 will promote growth of microorganisms.

2794 119.6.2 Containment of Drilling Fluid. Drilling or  
2795 circulating fluid introduced into the drilling process shall be  
2796 contained in a manner to prevent surface or subsurface  
2797 contamination and to prevent degradation of natural or man-made  
2798 water courses or impoundments. Rules regarding the discharges to  
2799 waters of the state are promulgated under R317-8-2 of the Utah  
2800 Administrative Code and regulated by the Utah Division of Water  
2801 Quality (Tel. 801-536-6146). Pollution of waters of the state is  
2802 a violation of the Utah Water Quality Act, Utah Code Annotated  
2803 Title 19, Chapter 5.

2804 119.6.3 Mineralized, Contaminated or Polluted Water.  
2805 Whenever a water bearing stratum that contains nonpotable  
2806 mineralized, contaminated or polluted water is encountered, the  
2807 stratum shall be adequately sealed off so that contamination or  
2808 co-mingling of the overlying or underlying groundwater zones will

2809 not occur (see Figure 4).  
 2810 119.6.4 Drilling-Down-hole Equipment. All tools, drilling  
 2811 equipment, and materials used to drill, repair, renovate, clean,  
 2812 or install a pump in a well shall be free of contaminants prior to  
 2813 beginning well construction or other in-well activity.  
 2814 Contaminants include lubricants, fuel, bacteria, etc. that will  
 2815 reduce the well efficiency, and any other item(s) that will be  
 2816 harmful to public health and/or the resource or reduce the life of  
 2817 the water well. It is recommended that excess lubricants placed  
 2818 on drilling equipment be wiped clean prior to insertion into the  
 2819 borehole.

2820 119.6.5 Well Disinfection and Chlorination of Water. No  
 2821 contaminated or untreated water shall be placed in a well during  
 2822 construction. Water should be obtained from a chlorinated  
 2823 municipal system. Where this is not possible, the water must be  
 2824 treated to give 100 parts per million free chlorine residual.  
 2825 Upon completion of a well or work on a well, the driller or pump  
 2826 installer shall disinfect the well using accepted disinfection  
 2827 procedures to give 100 parts per million free chlorine residual  
 2828 equally distributed in the well water from static level to the  
 2829 bottom of the well. A chlorine solution designated for potable  
 2830 water use prepared with either calcium hypochlorite (powdered,  
 2831 granular, or tablet form) or sodium hypochlorite in liquid form  
 2832 shall be used for water well disinfection. Off-the-shelf chlorine  
 2833 compounds intended for home laundry use, pool or fountain use  
 2834 should not be used if they contain additives such as antifungal  
 2835 agents, silica ("Ultra" brands), scents, etc. Table 6 provides  
 2836 the amount of chlorine compound required per 100 gallons of water  
 2837 or 100 feet linear casing volume of water to mix a 100 parts per  
 2838 million solution. Disinfection situations not depicted in Table 6  
 2839 must be approved by the state engineer. Additional  
 2840 recommendations and guidelines for water well system disinfection  
 2841 are available from the state engineer upon request.

2842  
 2843 TABLE 6  
 2844 AMOUNT OF CHLORINE COMPOUND FOR EACH 100 FEET OF WATER  
 2845 STANDING IN WELL (100 ppm solution)  
 2846

2847 Well	Ca-HyCLT*	Ca-HyCLT	Na-HyCLT**	Liquid CL***
2848 Diameter	(25% HOCL)	(65% HOCL)	(12-trade %)	(100% Cl2)
2849 (inches)	(ounces)	(ounces)	(fluid ounces)	(lbs)
2851 2	1.00	0.50	3.5	0.03
2852 4	3.50	1.50	7.0	0.06
2853 6	8.00	3.00	16.0	0.12
2854 8	14.50	5.50	28.0	0.22
2855 10	22.50	8.50	45.0	0.34
2856 12	32.50	12.00	64.0	0.50
2857 14	44.50	16.50	88.0	0.70
2858 16	58.00	26.00	112	0.88
2859 20	90.50	33.00	179	1.36
2860 For every 100				
2861 gal. of water				
2862 add:	5.50	2.00	11.5	0.09

2863  
2864 NOTES: \*Calcium Hypochlorite (solid)  
2865 \*\*Sodium Hypochlorite (liquid)  
2866 \*\*\*Liquid Chlorine  
2867

2868 119.7 Special Requirements.

2869 119.7.1 Explosives. Explosives used in well construction  
2870 shall not be detonated within the section of casing designed or  
2871 expected to serve as the surface seal of the completed well,  
2872 whether or not the surface seal has been placed. If explosives  
2873 are used in the construction of a well, their use shall be  
2874 reported on the official well log. In no case shall explosives,  
2875 other than explosive shot perforators specifically designed to  
2876 perforate steel casing, be detonated inside the well casing or  
2877 liner pipe.

2878 119.7.2 Access Port. Every well shall be equipped with a  
2879 usable access port so that the position of the water level, or  
2880 pressure head, in the well can be measured at all times.

2881 119.7.3 Completion or Abandonment. A licensed driller shall  
2882 not remove his drill rig from a well site unless the well is  
2883 completed or abandoned. Completion of a well shall include all  
2884 surface seals, gravel packs or curbs required. Dry boreholes, or  
2885 otherwise unsuccessful attempts at completing a well, shall be  
2886 properly abandoned in accordance with Section R655-4-~~1412~~. Upon  
2887 completion, all wells shall be equipped with a watertight, tamper-  
2888 resistant casing cap or sanitary seal.

2889 119.7.4 Surface Security. If it becomes necessary for the  
2890 driller to temporarily discontinue the drilling operation before  
2891 completion of the well or otherwise leave the well or borehole  
2892 unattended, the well and/or borehole must be covered securely to  
2893 prevent contaminants from entering the casing or borehole and  
2894 rendered secure against entry by children, vandals, domestic  
2895 animals, and wildlife.

2896 119.7.5 Pitless Adapters/Units. Pitless adapters or units  
2897 are acceptable to use with steel well casing as long as they are  
2898 installed in accordance with manufacturers recommendations and  
2899 specifications as well as meet the Water Systems Council Pitless  
2900 Adapter Standard (PAS-97) which are incorporated herein by reference  
2901 and are available from Water Systems Council, 13 Bentley Dr.,  
2902 Sterling, VA 20165, phone 703-430-6045, fax 703-430-6185  
2903 (watersystemscouncil.org). The pitless adaptor, including the cap  
2904 or cover, casing extension, and other attachments, must be so  
2905 designed and constructed to be secure, water tight, and to  
2906 prevent contamination of the potable water supply from external  
2907 sources. Pitless wellhead configurations shall have suitable  
2908 access to the interior of the well in order to measure water  
2909 level and for well disinfection purposes. Pitless configurations  
2910 shall be of watertight construction throughout and be constructed  
2911 of materials at least equivalent to and having wall thickness and  
2912 strength compatible to the casing. Pitless adapters or units are  
2913 not recommended to be mounted on PVC well casing. If a pitless  
2914 adapter is to be used with PVC casing, it should be designed for  
2915 use with PVC casing, and the driller should ensure that the  
2916 weight of the pump and column do not exceed the strength of the

2917 PVC well casing. A cement grout seal shall not be allowed within  
2918 the pitless unit or pitless adaptor sealing interval. The  
2919 pitless adapter or unit sealing interval shall be sealed with  
2920 unhydrated bentonite. The pitless adapter or unit, including the  
2921 cap or cover, pitless case and other attachments, shall be  
2922 designed and constructed to be watertight to prevent the entrance  
2923 of contaminants into the well from surface or near-surface  
2924 sources.

2925 119.7.6 Hydraulic Fracturing. The hydraulic fracturing  
2926 pressure shall be transmitted through a drill string and shall not  
2927 be transmitted to the well casing. Hydraulic fracturing intervals  
2928 shall be at least 20 feet below the bottom of the permanent casing  
2929 of a well. All hydraulic fracturing equipment shall be thoroughly  
2930 disinfected with a 100 part per million chlorine solution prior to  
2931 insertion into the well. The driller shall include the  
2932 appropriate hydraulic fracturing information on the well log  
2933 including methods, materials, maximum pressures, location of  
2934 packers, and initial/final yields. In no case shall  
2935 hydrofracturing allow commingling of waters within the well bore.  
2936 Clean sand or other material (propping agents) approved by the  
2937 Division may be injected into the well to hold the fractures open  
2938 when pressure is removed.

2939 119.7.7 Static Water Level, Well Development, and Well  
2940 Yield. To fulfill the requirements of Subsection R655-4-4.5.2,  
2941 new wells designed to produce water shall be developed to remove  
2942 drill cuttings, drilling mud, or other materials introduced into  
2943 the well during construction and to restore the natural  
2944 groundwater flow to the well to the extent possible. After a  
2945 water production well is developed, a test should be performed to  
2946 determine the rate at which groundwater can be reliably produced  
2947 from the well. Following development and testing, the static  
2948 water level in the well should also be measured. Static water  
2949 level, well development information, and well yield information  
2950 shall be noted on the official submittal of the Well Log by the  
2951 well driller.

2952 11.7.8 Packers. Packers shall be of a material that will not  
2953 impart taste, odor, toxic substances or bacterial contamination to  
2954 the water in the well.

2955 11.7.9 Screens. Screens must be constructed of corrosion-  
2956 resistant material and sufficiently strong to withstand stresses  
2957 encountered during and after installation. Screen slot openings,  
2958 screen length, and screen diameter should be sized and designed to  
2959 provide sufficient open area consistent with strength requirements  
2960 to transmit sand-free water from the well. Screens should be  
2961 installed so that exposure above pumping level will not occur.

2962 10.7.10 Openings in the Casing. There shall be no opening  
2963 in the casing wall between the top of the casing and the bottom  
2964 of the required casing seal except for pitless adapters,  
2965 measurement access ports, and other approved openings installed  
2966 in conformance with these standards. In no case shall holes be  
2967 cut in the casing wall for the purpose of lifting or lowering  
2968 casing into the well bore unless such holes are properly welded  
2969 closed and watertight prior to placement into the well bore.



2970 10.7.11 Casing vents. If a well requires venting, it must  
2971 terminate in a down-turned position at least 18-inches above  
2972 ground (land) level, at or above the top of the casing or pitless  
2973 unit and be covered with a 24 mesh corrosion-resistant screen.  
2974

2975 **R655-4-~~1210~~. Special Wells.**

2976 ~~120~~.1 Construction Standards for Special Wells.

2977 ~~120~~.1.1 General. The construction standards outlined in  
2978 Section R655-4-~~119~~ are meant to serve as minimum acceptable  
2979 construction standards. Certain types of wells such as cathodic  
2980 protection wells, closed-loop heating or cooling exchange wells,  
2981 recharge and recovery wells, and public supply wells require  
2982 special construction standards that are addressed in this section  
2983 or in rules promulgated by other regulating agencies. At a  
2984 minimum, when constructing special wells as listed above, the well  
2985 shall be constructed by a licensed well driller, and the minimum  
2986 construction standards of Section R655-4-~~119~~ shall be followed in  
2987 addition to the following special standards.

2988 ~~120~~.1.2 Public Water Supply Wells. Public water supply  
2989 wells are subject to the minimum construction standards outlined  
2990 in Section R655-4-~~119~~ in addition to the requirements established  
2991 by the Department of Environmental Quality, Division of Drinking  
2992 Water under Rules R309-515 and R309-600. Plans and specifications  
2993 for a public supply well must be reviewed and approved by the  
2994 Division of Drinking Water before the well is drilled. These  
2995 plans and specifications shall include the procedures, practices,  
2996 and materials used to drill, construct, seal, develop, clean,  
2997 disinfect, and test the public supply well. A Preliminary  
2998 Evaluation Report describing the potential vulnerability and  
2999 protection strategies of the new well to contamination must also  
3000 be submitted and approved prior to drilling. A representative of  
3001 the Division of Drinking Water must be present at the time the  
3002 surface grout seal is placed in all public supply wells, so that  
3003 the placement of the seal can be certified. In order to assure  
3004 that a representative will be available, and to avoid down-time  
3005 waiting for a representative, notice should be given several days  
3006 in advance of the projected surface grout seal placement. When  
3007 the time and date for the surface grout seal installation are  
3008 confirmed a definite appointment should be made with the  
3009 representative of the Division of Drinking Water to witness the  
3010 grout seal placement by calling (801) 536-4200. The licensed  
3011 driller shall have available a copy of the start card relating to  
3012 the well and provide that information to the inspecting  
3013 representative at the time of the surface grout seal installation  
3014 and inspection.

3015 ~~120~~.1.3 Cathodic Protection Well Construction. Cathodic  
3016 protection wells shall be constructed in accordance with the  
3017 casing, joint, surface seal, and other applicable requirements  
3018 outlined in Section R655-4-9. Any annular space existing between  
3019 the base of the annular surface seal and the top of the anode and  
3020 conductive fill interval shall be filled with appropriate fill or  
3021 sealing material. Fill material shall consist of washed granular  
3022 material such as sand, pea gravel, or sealing material. Fill  
3023 material shall not be subject to decomposition or consolidation



3024 and shall be free of pollutants and contaminants. Fill material  
3025 shall not be toxic or contain drill cuttings or drilling mud.  
3026 Additional sealing material shall be placed below the minimum  
3027 depth of the annular surface seal, as needed, to prevent the  
3028 cross-connection and commingling of separate aquifers and water  
3029 bearing zones. Vent pipes, anode access tubing, and any other  
3030 tubular materials (i.e., the outermost casing) that pass through  
3031 the interval to be filled and sealed are considered casing for the  
3032 purposes of these standards and shall meet the requirements of  
3033 Subsections R655-4-~~119~~.2 and ~~119~~.3. Cathodic protection well  
3034 casing shall be at least 2 inches in internal diameter to  
3035 facilitate eventual well abandonment. Figure 6 illustrates the  
3036 construction of a typical cathodic protection well.

3037 ~~120~~.1.4 Closed-loop Heating/Cooling Exchange Wells. Wells  
3038 or boreholes utilized for heat exchange or thermal heating in a  
3039 closed-loop fashion, which are greater than 30 feet in depth and  
3040 encounter formations containing groundwater, must be drilled by a  
3041 licensed driller and the owner or applicant must have an approved  
3042 application for that specific purpose as outlined in Section R655-  
3043 4-~~97~~. Wells or boreholes installed for heat or thermal exchange  
3044 process must comply with the minimum construction standards of  
3045 Section R655-4-~~119~~.

3046 12.1.4.1 For open-loop systems where groundwater is removed,  
3047 processed, and re-injected, a non-consumptive use water right  
3048 approval must be obtained from the state engineer. Approval to  
3049 re-inject water underground is also required from the Utah  
3050 Division of Water Quality. Open-loop system wells shall be  
3051 constructed in accordance with the requirements found in Section  
3052 11. If a separate well or borehole is required for re-injection  
3053 purposes, it must also comply with these standards and the  
3054 groundwater must be injected into the same water bearing zones as  
3055 from which it is initially withdrawn. The quality and quantity of  
3056 groundwater shall not be diminished or degraded upon re-injection.

3057 12.1.4.2 Closed-loop heat exchange wells must also comply  
3058 with the standards set forth in the National Ground Water  
3059 Association Guidelines for Construction of Vertical Boreholes for  
3060 Closed Loop Heat Pump Systems (Standards are copyrighted and  
3061 available from the National Ground Water Association at 601  
3062 Dempsey Rd, Westerville, OH 43081-8978, Phone 614-898-7791, Fax  
3063 614.898-7786, website [www.ngwa.org](http://www.ngwa.org), email  
3064 customerservice@ngwa.org. These standards may be viewed during  
3065 normal business hours at the Division's main office at 1594 West  
3066 North Temple, SLC, UT 84116). For closed-loop systems where  
3067 groundwater is not removed in the process, non-production well  
3068 approval must be obtained from the state engineer. Specific  
3069 requirements for closed-loop wells include:

3070 a. The location of closed loop heat pump wells must comply  
3071 with applicable ordinances, regulations, or other enforceable  
3072 instruments of local governments to ensure adequate protection of  
3073 public water systems from encroachments.

3074 b. Closed-loop system wells must be sealed from the bottom  
3075 of the well/boring to ground surface using acceptable materials  
3076 and placement methods described in Section ~~119~~.4. Sand may be  
3077 added to the seal mix to enhance thermal conductivity as long as

3078 the seal mix meets permeability and gel strength standards  
3079 outlined in Section 119.4.

3080 c. Borehole Diameter: The borehole diameter of a closed loop  
3081 heat pump well must be of sufficient size to allow placement of  
3082 the pipe and placement of a tremie to emplace the grout. In  
3083 general, for loop piping with a nominal diameter of  $\frac{3}{4}$  to 1 inch,  
3084 the borehole diameter shall be at least 4.75 inches. For loop  
3085 piping with a nominal diameter of 1.25 inches, the borehole  
3086 diameter shall be at least 5.25 inches. For loop piping with a  
3087 nominal diameter of 1.5 to 2.0 inches, the borehole diameter shall  
3088 be at least 6.0 inches.

3089 d. Grouting of Vertical Ground Water Heat Pump Wells:  
3090 Grouting the annulus of a heat pump well must be completed within  
3091 6 hours from the time the drill rig moves from the borehole. Full  
3092 length grout placement is required on all vertical closed loop  
3093 heat pump boreholes.

3094 e. Placement of Grout Material: Full-length grout material  
3095 must be placed by tremie from the bottom of the borehole to the  
3096 top. The tremie pipe must not be left in the borehole. The grout  
3097 must fill the entire borehole. Grout must not be allowed to free-  
3098 fall.

3099 f. Pipe: Pipe material, joining methods, and installation  
3100 must meet the standards referenced in the National Ground Water  
3101 Association Guidelines for Construction of Vertical Boreholes for  
3102 Closed Loop Heat Pump Systems, pages 11-14 (Standards are  
3103 copyrighted and available from the National Ground Water  
3104 Association at 601 Dempsey Rd, Westerville, OH 43081-8978, Phone  
3105 614-898-7791, Fax 614.898-7786, email customerservice@ngwa.org.  
3106 Standards may be viewed during normal business hours at the  
3107 Division's main office at 1594 West North Temple, SLC, UT 84116).  
3108 U-bend connections shall be factory jointed and piping shall not  
3109 have any fusion joints below a depth of 30 feet.

3110 g. Pressure Testing: Loop piping shall be pressure tested  
3111 prior to installation into the borehole. Loop piping failing  
3112 this initial pressure testing shall not be installed. The  
3113 installed system must be pressure tested at a minimum of 2 times  
3114 the system operating pressure to ensure the integrity of the  
3115 system. If a pressure loss is detected, the cause must be  
3116 properly repaired or material replaced or properly plugged.  
3117 Pressure testing procedures shall follow the standards in the  
3118 National Ground Water Association Guidelines for Construction of  
3119 Vertical Boreholes for Closed Loop Heat Pump Systems, pages 11-14  
3120 (Standards are copyrighted and available from the National Ground  
3121 Water Association at 601 Dempsey Rd, Westerville, OH 43081-8978,  
3122 Phone 614-898-7791, Fax 614.898-7786, email  
3123 customerservice@ngwa.org. Standards may be viewed during normal  
3124 business hours at the Division's main office at 1594 West North  
3125 Temple, SLC, UT 84116).

3126 h. Heat transfer fluid, additives, and inhibitors. The  
3127 fluids additives, and inhibitors used inside the closed-loop  
3128 assembly must be nontoxic, food grade quality and approved for  
3129 use by the U.S. Environmental Protection Agency.

3130 i. Abandonment: When closed-loop heat exchange wells are  
3131 required to be permanently abandoned (decommissioned and sealed),  
3132 the most recent version of the Permanent Loop Pipe  
3133 Decommissioning standards of the Closed-Loop/Geothermal Heat Pump  
3134 Systems Design and Installation Standards shall be followed.  
3135 These standards are published by the International Ground Source  
3136 Heat Pump Association (374 Cordell South, Oklahoma State  
3137 University, Stillwater, OK 74078-8018, [www.igshpa.okstate.edu](http://www.igshpa.okstate.edu)).  
3138 ~~For open-loop systems where groundwater is removed, processed, and~~  
3139 ~~re-injected, a non-consumptive use water right approval must be~~  
3140 ~~obtained from the state engineer. Open-loop system wells shall be~~  
3141 ~~constructed in accordance with the requirements found in Section~~  
3142 ~~9. If a separate well or borehole is required for re-injection~~  
3143 ~~purposes, it must also comply with these standards and the~~  
3144 ~~groundwater must be injected into the same water bearing zones as~~  
3145 ~~from which it is initially withdrawn. The quality and quantity of~~  
3146 ~~groundwater shall not be diminished or degraded upon re-injection.~~  
3147 10.1.4.3 The rules herein pertain only to the heating and cooling  
3148 exchange well constructed to a depth greater than 30 feet and are  
3149 not intended to regulate the incidental work that may occur up to  
3150 the well such as plumbing, electrical, piping, trenching, and  
3151 backfilling activities.

3152 120.1.5 Recharge and Recovery Wells. Any well drilled under  
3153 the provisions of Title 73, Chapter 3b (Groundwater Recharge and  
3154 Recovery Act) shall be constructed in a manner consistent with  
3155 these rules and shall be drilled by a currently licensed driller.  
3156 Special rules regarding the injection of water into the ground  
3157 are also promulgated under the jurisdiction of the Utah Department  
3158 of Environmental Quality, Division of Water Quality (Rule R317-7  
3159 "Underground Injection Control Program" of the Utah Administrative  
3160 Code) and must be followed in conjunction with the Water Well  
3161 Drilling rules.

3162  
3163 **R655-4-131. Deepening, Rehabilitation, and Renovation of Wells.**

3164 131.1 Sealing of Casing.

3165 131.1.1 If in the repair of a drilled well, the old casing  
3166 is withdrawn, the well shall be recased and resealed in accordance  
3167 with the rules provided in Subsection R655-4-119(119.4).

3168 131.2 Inner Casing.

3169 131.2.1 If an inner casing is installed to prevent leakage  
3170 of undesirable water into a well, the space between the two well  
3171 casings shall be completely sealed using packers, casing swedging,  
3172 pressure grouting, etc., to prevent the movement of water between  
3173 the casings.

3174 131.3 Outer Casing.

3175 131.3.1 If the "over-drive" method is used to eliminate  
3176 leakage around an existing well, the casing driven over the well  
3177 shall meet the minimum specifications listed in Subsection R655-4-  
3178 119(119.4).

3179 131.4 Artesian Wells.

3180 131.4.1 If upon deepening an existing well, an artesian zone  
3181 is encountered, the well shall be cased and completed as provided  
3182 in Subsection R655-4-119(119.4).

3183 131.5 Drilling in a Dug Well.

3184 13~~±~~.5.1 A drilled well may be constructed through an  
3185 existing dug well provided that:

3186 13~~±~~.5.1.1 Unperforated Casing Requirements. An unperforated  
3187 section of well casing extends from a depth of at least ten (10)  
3188 feet below the bottom of the dug well and at least 20 feet below  
3189 land surface to above the maximum static water level in the dug  
3190 well.

3191 13~~±~~.5.1.2 Seal Required. A two foot thick seal of neat  
3192 cement grout, sand cement grout, or bentonite grout is placed in  
3193 the bottom of the dug well so as to prevent the direct movement of  
3194 water from the dug well into the drilled well.

3195 13~~±~~.5.1.3 Test of Seal. The drilled well shall be pumped or  
3196 bailed to determine whether the seal described in Subsection R655-  
3197 4-13~~±~~(13~~±~~.5.1.2) is adequate to prevent movement of water from the  
3198 dug well into the drilled well. If the seal leaks, additional  
3199 sealing and testing shall be performed until a water tight seal is  
3200 obtained.

3201 13~~±~~.6 Well Rehabilitation and Cleaning.

3202 13~~±~~.6.1 Tools used to rehabilitate or clean a well shall be  
3203 cleaned, disinfected, and free of contamination prior to placement  
3204 in a well.

3205 13~~±~~.6.2 The driller shall use rehabilitation and cleaning  
3206 tools properly so as not to permanently damage the well or  
3207 aquifer. If the surface seal is damaged or destroyed in the  
3208 process of rehabilitation or cleaning, the driller shall repair  
3209 the surface seal to the standards set forth in Subsection R655-4-  
3210 119(119.4).

3211 13~~±~~.6.3 Debris, sediment, and other materials displaced  
3212 inside the well and surrounding aquifer as a result of  
3213 rehabilitation or cleaning shall be completely removed by pumping,  
3214 bailing, well development, or other approved methods.

3215 13~~±~~.6.4 Detergents, chlorine, acids, or other chemicals  
3216 placed in wells for the purpose of increasing or restoring yield,  
3217 shall be specifically designed for that purpose and used according  
3218 to the manufacturer's recommendations.

3219 13~~±~~.6.5 Any renovation, rehabilitation, cleaning, or other  
3220 work on a well that requires alteration of the well itself shall  
3221 be conducted by a licensed well driller.

3222 13~~±~~.6.6 Following completion of deepening, renovation,  
3223 rehabilitation, cleaning, or other work on a well, the well shall  
3224 be properly disinfected in accordance with Subsection R655-4-  
3225 119(119.6.5).

3226

3227 **R655-4-142. Abandonment of Wells.**

3228 14~~2~~.1 Temporary Abandonment.

3229 14~~2~~.1.1 When any well is temporarily removed from service,  
3230 the top of the well shall be sealed with a tamper resistant,  
3231 water-tight cap or seal. If a well is in the process of being  
3232 drilled and is temporarily abandoned, the well shall be sealed  
3233 with a tamper resistant, water-tight cap or seal and a surface  
3234 seal installed in accordance with Subsection R655-4-119(119.4).  
3235 The well may be temporarily abandoned during construction for a  
3236 maximum of 90 days. After the 90 day period, the temporarily  
3237 abandoned well shall be completed as a well that meets the

3238 standards of Section 119 or permanently abandoned in accordance  
3239 with the following requirements, and an official well abandonment  
3240 report (abandonment log) must be submitted in compliance with  
3241 Section R655-4-4.

3242 142.2 Permanent Abandonment.

3243 142.2.1 The rules of this section apply to the abandonment  
3244 of the type of wells listed in Subsection R655-4-1(1.2) including  
3245 private water wells, public supply wells, monitor wells, cathodic  
3246 protection wells, and heating or cooling exchange wells. A  
3247 licensed driller shall notify the state engineer prior to  
3248 commencing abandonment work and submit a complete and accurate  
3249 abandonment log following abandonment work in accordance with  
3250 Section R655-4-4 of these rules. Prior to commencing abandonment  
3251 work, the driller shall obtain a copy of the well log of the well  
3252 proposed to be abandoned from the well owner or the state  
3253 engineer, if available, in order to determine the proper  
3254 abandonment procedure. Any well that is to be permanently  
3255 abandoned shall be completely filled in a manner to prevent  
3256 vertical movement of water within the borehole as well as  
3257 preventing the annular space surrounding the well casing from  
3258 becoming a conduit for possible contamination of the groundwater  
3259 supply. A well driller who wishes to abandon a well in a manner  
3260 that does not comply with the provisions set forth in this section  
3261 must request approval from the state engineer.

3262 142.3 License Required.

3263 142.3.1 Well abandonment shall be accomplished under the  
3264 direct supervision of a currently licensed water well driller who  
3265 shall be responsible for verification of the procedures and  
3266 materials used.

3267 142.4 Acceptable Materials.

3268 142.4.1 Neat cement grout, sand cement grout, unhydrated  
3269 bentonite, or bentonite grout shall be used to abandon wells and  
3270 boreholes. Other sealing materials or additives, such as fly ash,  
3271 may be used in the preparation of grout upon approval of the state  
3272 engineer. Drilling mud or drill cuttings shall not be used as any  
3273 part of a sealing materials for well abandonment. The liquid  
3274 phase of the abandonment fluid shall be water from a potable  
3275 municipal system or disinfected in accordance with Subsection  
3276 R655-4-119(119.6.5).

3277 142.5 Placement of Materials.

3278 142.5.1 Neat cement and sand cement grout shall be  
3279 introduced at the bottom of the well or required sealing interval  
3280 and placed progressively upward to the top of the well. The  
3281 sealing material shall be placed by the use of a grout pipe,  
3282 tremie line, dump bailer or equivalent in order to avoid freefall,  
3283 bridging, or dilution of the sealing materials or separation of  
3284 aggregates from sealants. Sealing material shall not be installed  
3285 by freefall (gravity) unless the interval to be sealed is dry and  
3286 no deeper than 30 feet below ground surface. If the well to be  
3287 abandoned is a flowing artesian well, the well may be pressure  
3288 grouted from the surface. The well should be capped immediately  
3289 after placement of seal materials to allow the seal material to  
3290 set up and not flow out of the well.

3291 142.5.2 Bentonite-based abandonment products shall be mixed

3292 and placed according to manufacturer's recommended procedures and  
3293 result in a seal free of voids or bridges. Granular or powered  
3294 bentonite shall not be placed under water. When placing  
3295 unhydrated bentonite, a sounding or tamping tool shall be run in  
3296 the sealing interval during pouring to measure fill-up rate,  
3297 verify a continuous seal placement, and to break up possible  
3298 bridges or cake formation.

3299 142.5.3 The uppermost ten (10) feet of the abandoned well  
3300 casing or borehole shall consist of neat cement grout or sand  
3301 cement grout.

3302 142.5.4 Abandonment materials placed opposite any non-water  
3303 bearing intervals or zones shall be at least as impervious as the  
3304 formation or strata prior to penetration during the drilling  
3305 process.

3306 142.5.5 Prior to well or borehole abandonment, all pump  
3307 equipment, piping, and other debris shall be removed to the extent  
3308 possible. The well shall also be sounded immediately before it is  
3309 plugged to make sure that no obstructions exist that will  
3310 interfere with the filling and sealing. If the well contains  
3311 lubricating oil that has leaked from a turbine shaft pump, it  
3312 shall be removed from the well prior to abandonment and disposed  
3313 of in accordance with applicable state and federal regulations.

3314 142.5.6 Verification shall be made that the volume of  
3315 sealing and fill material placed in a well during abandonment  
3316 operations equals or exceeds the volume of the well or borehole to  
3317 be filled and sealed.

3318 142.6 Termination of Casing.

3319 142.6.1 The casings of wells to be abandoned shall be  
3320 severed a minimum of two feet below either the natural ground  
3321 surface adjacent to the well or at the collar of the hole,  
3322 whichever is the lower elevation. A minimum of two (2) feet of  
3323 compacted native material shall be placed above the abandoned well  
3324 upon completion.

3325 142.7 Abandonment of Artesian Wells.

3326 142.7.1 A neat cement grout, sand-cement grout, or concrete  
3327 plug shall be placed in the confining stratum overlying the  
3328 artesian zone so as to prevent subsurface leakage from the  
3329 artesian zone. The remainder of the well shall be filled with  
3330 sand-cement grout, neat cement grout, bentonite abandonment  
3331 products, or bentonite grout. The uppermost ten (10) feet of the  
3332 well shall be abandoned as required in Subsection R655-4-  
3333 142(142.5.3).

3334 142.8 Abandonment of Drilled and Jetted Wells.

3335 142.8.1 A neat cement grout or sand cement grout plug shall  
3336 be placed opposite all perforations, screens or openings in the  
3337 well casing. The remainder of the well shall be filled with cement  
3338 grout, neat cement, bentonite abandonment products, concrete, or  
3339 bentonite slurry. The uppermost ten feet of the well shall be  
3340 abandoned as required in Subsection R655-4-142(142.5.3).

3341 142.9 Abandonment of Gravel Packed Wells.

3342 142.9.1 All gravel packed wells shall be pressure grouted  
3343 throughout the perforated or screened section of the well. The  
3344 remainder of the well shall be filled with sand cement grout, neat  
3345 cement grout, bentonite abandonment products, or bentonite grout.



3346 The uppermost ten feet of the well shall be abandoned as required  
3347 in Subsection R655-4-142(142.5.3).

3348 142.10 Removal of Casing.

3349 142.10.1 It is recommended that the well casing be removed  
3350 during well abandonment, and when doing so, the abandonment  
3351 materials shall be placed from the bottom of the well or borehole  
3352 progressively upward as the casing is removed. The well shall be  
3353 sealed with sand cement grout, neat cement grout, bentonite  
3354 abandonment products, or bentonite grout. In the case of gravel  
3355 packed wells, the entire gravel section shall be pressure grouted.

3356 The uppermost ten feet of the well shall be abandoned as required  
3357 in Subsection R655-4-142(142.5.3).

3358 142.11 Replacement Wells.

3359 142.11.1 Wells which are to be removed from operation and  
3360 replaced by the drilling of a new well under an approved  
3361 replacement application, shall be abandoned in a manner consistent  
3362 with the provisions of Section R655-4-142 before the rig is  
3363 removed from the site of the newly constructed replacement well,  
3364 unless written authorization to remove the rig without abandonment  
3365 is provided by the state engineer. Also refer to the requirements  
3366 provided in Subsection R655-4-4(4.4).

3367 142.12 Abandonment of Cathodic Protection Wells.

3368 142.12.1 The general requirements for permanent well  
3369 abandonment in accordance with Section R655-4-142 shall be  
3370 followed for the abandonment of cathodic protection wells.

3371 142.12.2 A cathodic protection well shall be investigated  
3372 before it is destroyed to determine its condition, details of its  
3373 construction and whether conditions exist that will interfere with  
3374 filling and sealing.

3375 142.12.3 Casing, cables, anodes, granular backfill,  
3376 conductive backfill, and sealing material shall be removed as  
3377 needed, by re-drilling, if necessary, to the point needed to allow  
3378 proper placement of abandonment material. Casing that cannot be  
3379 removed shall be adequately perforated or punctured at specific  
3380 intervals to allow pressure injection of sealing materials into  
3381 granular backfill and all other voids that require sealing.

3382

### 3383 **R655-4-153. Monitor Well Construction Standards.**

3384 153.1 Scope.

3385 153.1.1 Certain construction standards that apply to water  
3386 wells also apply to monitor wells. Therefore, these monitoring  
3387 well standards refer frequently to the water well standard  
3388 sections of the rules. Standards that apply only to monitor  
3389 wells, or that require emphasis, are discussed in this section.  
3390 Figure 7 illustrates a schematic of an acceptable monitor well  
3391 with an above-ground surface completion. Figure 8 illustrates a  
3392 schematic of an acceptable monitor well with a flush-mount surface  
3393 completion. Figures 7 and 8 can be viewed in the publication,  
3394 State of Utah Administrative Rules for Water Wells-Drillers, most  
3395 recent edition dated January 1, 2001, available at the Division of  
3396 Water Rights, 1594 West North Temple, Salt Lake City, Utah.

3397 153.1.2 These standards are not intended as a complete  
3398 manual for monitoring well construction, alteration, maintenance,  
3399 and abandonment. These standards serve only as minimum statewide

3400 guidelines towards ensuring that monitor wells do not constitute a  
3401 significant pathway for the movement of poor quality water,  
3402 pollutants, or contaminants. These standards provide no assurance  
3403 that a monitor well will perform a desired function. Ultimate  
3404 responsibility for the design and performance of a monitoring well  
3405 rests with the well owner and/or the owner's contractor, and/or  
3406 technical representative(s). Most monitor well projects are the  
3407 result of compliance with the Environmental Protection Agency  
3408 (EPA), Federal Regulations such as the Resource Conservation and  
3409 Recovery Act (RCRA), Comprehensive Environmental Response,  
3410 Compensation and Liability Act (CERCLA or "Superfund"), or  
3411 specific State Solid and Hazardous Waste requirements. The  
3412 contracts governing their installation are tightly written  
3413 containing specific requirements as to site location, materials  
3414 used, sampling procedures and overall objectives. Therefore  
3415 specific construction requirements for monitor well installation  
3416 shall be governed by applicable contracts and regulations  
3417 providing they meet or exceed state requirements and  
3418 specifications. Guidelines and recommended practices dealing with  
3419 the installation of monitor wells may be obtained from the state  
3420 engineer upon request. Additional recommended information may be  
3421 obtained from the Environmental Protection Agency (EPA), Resource  
3422 Conservation and Recovery Act (RCRA), Groundwater Monitoring  
3423 Enforcement and Compliance Document available from EPA's regional  
3424 office in Denver, Colorado and from the Handbook of Suggested  
3425 Practices for the Design and Installation of Groundwater  
3426 Monitoring Wells, available from the National Groundwater  
3427 Association in Dublin, Ohio.

3428 153.2 Installation and Construction.

3429 153.2.1 Materials and Equipment Contaminant-Free. All  
3430 material used in the installation of monitor wells shall be  
3431 contaminant-free when placed in the ground. Drilling equipment  
3432 shall be clean and contaminant free in accordance with Subsection  
3433 R655-4-119(119.6.4). During construction contaminated water  
3434 should not be allowed to enter contaminant-free geologic  
3435 formations or water bearing zones.

3436 153.2.2 Borehole Integrity. Some minor cross-contamination  
3437 may occur during the drilling process, but the integrity of the  
3438 borehole and individual formations must then be safeguarded from  
3439 permanent cross connection.

3440 153.2.3 Casing and Screen. The well casing should be  
3441 perforated or screened and filter packed with sand or gravel where  
3442 necessary to provide adequate sample collection at depths where  
3443 appropriate aquifer flow zones exist. The casing and screen  
3444 selected shall not affect or interfere with the chemical,  
3445 physical, radiological, or biological constituents of interest.  
3446 Screens in the same well shall not be placed across separate water  
3447 bearing zones in order to minimize interconnection, aquifer  
3448 commingling, and cross contamination. Screens in a nested well  
3449 can be placed in separate water bearing zones as long as the  
3450 intervals between the water bearing zones are appropriately sealed  
3451 and aquifer cross connection and commingling does not occur.  
3452 Monitor well casing and screen shall conform to ASTM standards, or  
3453 consist of at least 304 or 316 stainless steel, PTFE (Teflon), or

3454 Schedule 40 PVC casing.

3455 153.2.4 Gravel/Filter Pack. If installed, the gravel or  
3456 filter pack should generally extend two (2) feet to ten (10) feet  
3457 above screened or perforated areas to prevent the migration of the  
3458 sealing material from entering the zones being sampled. Gravel or  
3459 filter pack material shall meet the requirements of Subsection  
3460 R655-4-119(119.5.2). Gravel/filter pack for monitoring wells does  
3461 not require disinfection. Drill cutting should not be placed into  
3462 the open borehole annulus. The well driller shall ensure that a  
3463 bridge or voids do not occur in the annular space during the  
3464 placement of the gravel pack by means of a sounding device or  
3465 other mechanism.

3466 153.2.5 Annular Seal. All monitor wells constructed shall  
3467 have a continuous surface seal, which seals the annular space  
3468 between the borehole and the permanent casing, in accordance with  
3469 the provisions in Section R655-4-119. The surface seal depth  
3470 requirements of Section R655-4-119 do not apply to monitor wells.  
3471 The surface seal may be more or less than 50 feet depending on  
3472 the screen/perforation and/or gravel pack interval. Seals shall  
3473 also be constructed to prevent interconnection and commingling of  
3474 separate aquifers penetrated by the well, prevent migration of  
3475 surface water and contaminations into the well and aquifers, and  
3476 shall provide casing stability. The seal shall have a minimum  
3477 diameter of four inches larger than the nominal size of the  
3478 permanent casing, and shall extend from land surface to the top of  
3479 the filter pack. After the permanent casing and filter pack  
3480 (optional) has been set in final position, a layer of bentonite or  
3481 fine sand (e.g., mortar sand) shall be placed on top of the filter  
3482 pack to maintain separation between the seal material and the  
3483 screened interval in order to insure that the seal placement will  
3484 not interfere with the filter pack. The remaining annular space  
3485 shall be filled to land surface in a continuous operation with  
3486 unhydrated bentonite, neat cement grout, sand-cement grout, or  
3487 bentonite grout. Only potable water should be used to hydrate any  
3488 grout or slurry mixture. The completed annular space shall fully  
3489 surround the permanent casing, be evenly distributed, free of  
3490 voids, and extend from the permanent casing to undisturbed or  
3491 recompacted soil. All sealing materials and placement methods  
3492 shall conform to the standards in Section R655-4-2 and Subsection  
3493 R655-4-119(119.4). The well driller shall ensure that a bridge or  
3494 voids do not occur in the annular space during the placement of  
3495 the seal.

3496 153.2.6 Cuttings, Decon Water, Development Water, and Other  
3497 IDW. Drill cuttings, decontamination (Decon) water, monitor well  
3498 development water, and other investigation derived waste (IDW)  
3499 shall be managed and disposed of in accordance with applicable  
3500 state and federal environmental regulations. It is the  
3501 responsibility of the driller to know and understand such  
3502 requirements.

3503 153.3 Minimum Surface Protection Requirements.

3504 153.3.1 If a well is cased with metal and completed above  
3505 ground surface, a locking water resistant cap shall be installed  
3506 on the top of the well.

3507 153.3.2 If the well is not cased with metal and completed

3508 above ground surface, a protective metal casing shall be installed  
3509 over and around the well. The protective casing shall be cemented  
3510 at least two feet into the ground around the nonmetallic casing.  
3511 A water tight cap shall be installed in the top of the well  
3512 casing. A locking cap shall be installed on the top of the  
3513 protective casing.

3514 153.3.3 Monitor wells completed above ground and potentially  
3515 accessible to vehicular damage shall be protected in the following  
3516 manner. At least three metal posts, at least three inches in  
3517 diameter, shall be cemented in place around the casing. Each post  
3518 shall extend at least three feet above and two feet below ground  
3519 surface. A concrete pad may be installed to add protection to the  
3520 surface completion. If installed, the concrete pad shall be at  
3521 least four (4) inches thick and shall slope to drain away from the  
3522 well casing. The base shall extend at least two (2) feet  
3523 laterally in all directions from the outside of the well boring.  
3524 When a concrete pad is used, the well seal may be part of the  
3525 concrete pad.

3526 153.3.4 If the well is completed below land surface, a water  
3527 tight cap with a lock shall be attached to the top of the well  
3528 casing. A metal monument or equivalent shall be installed over  
3529 and around the well. The monument shall serve as a protective  
3530 cover and be installed level with the land surface and be equipped  
3531 with a waterproof seal to prevent inflow of any water or  
3532 contaminants. Drains will be provided, when feasible, to keep  
3533 water out of the well and below the well cap. The monument and  
3534 cover must be designed to withstand the maximum expected load.

3535 153.4 Abandonment.

3536 153.4.1 Abandonment of monitor wells shall be completed in  
3537 compliance with the provisions of Section R655-4-142. The  
3538 provisions of Section R655-4-142 are not required for the  
3539 permanent abandonment of monitor wells completed at a depth of 30  
3540 feet below natural ground surface.

3541  
3542 **R655-4-16. Pump Installation and Repair.**

3543 16.1 Pump installation practices. All pump installations shall be  
3544 completed in such a manner as to prevent waste and contamination  
3545 of groundwater by pollution material entering the well from  
3546 pumping equipment, casing connectors, fittings, piping, sanitary  
3547 seals or caps.

3548  
3549 16.2 Surface Seal. If in the process of pump installation or  
3550 repair, the well's surface seal is disturbed or damaged, it shall  
3551 be repaired and resealed in accordance with the standards provided  
3552 in Subsection R655-4-11(11.4).

3553  
3554 16.3 Tools, Equipment, and Materials. Down-hole tools and  
3555 equipment used in performance of pump installation and repair  
3556 shall be cleaned, disinfected, and free of contamination prior to  
3557 placement in a well. All tools, drilling equipment, and materials  
3558 used to drill a well shall be free of contaminants prior to  
3559 beginning pump-related work. Contaminants include lubricants,  
3560 fuel, bacteria, etc. that will reduce the well efficiency, and any

3561 other item(s) that will be harmful to public health and/or the  
3562 resource or reduce the life of the water well. It is recommended  
3563 that excess lubricants placed on equipment be wiped clean prior to  
3564 insertion into the well. Thread Compounds, Sealants, and  
3565 Lubricants must not exceed the maximum contaminant levels for  
3566 chemicals, taste, and odor. The licensee shall use pump-related  
3567 tools and equipment properly so as not to permanently damage the  
3568 well or aquifer.

3569  
3570 16.4 Disinfection. Following completion of pump installation and  
3571 repair work on a well, the well, pump, and in-well discharge  
3572 pipng shall be properly disinfected in accordance with Subsection  
3573 R655-4-11(11.6.5).

3574  
3575 16.5. Product, material, and Process Standards. Any product,  
3576 material or procedure designed for use related to pump  
3577 installation and repair of water production or non-production  
3578 wells, which has received certification and approval for its  
3579 intended use by the National Sanitation Foundation (NSF) under  
3580 ANSI/NSF Standard 60 or 61, the American Society for Testing  
3581 Materials (ASTM), the American Water Works Association (AWWA) or  
3582 the American National Standards Institute (ANSI) may be utilized.  
3583 Other products, materials or procedures may also be utilized for  
3584 their intended purpose upon manufacturers certification that they  
3585 meet or exceed the standards or certifications referred to in this  
3586 section and upon state engineer approval. Organic substances  
3587 shall not be introduced into the well or borehole during pump  
3588 installation and repair work.

3589  
3590 16.6 Surface Completions. Pump installers shall leave the well  
3591 surface completion upon completion of pump installation/repair  
3592 work in accordance with the standards in Subsection R655-4-11 as  
3593 it pertains to casing stick up, steel/PVC casing extensions,  
3594 sanitary capping and venting, and protective casings. Upon  
3595 completion, all wells shall be equipped with a watertight, tamper-  
3596 resistant casing cap or sanitary seal.

3597  
3598 16.7 Flowing Artesian Wells. In accordance with Subsection R655-  
3599 4-11(11.4.3.5, artesian wells that flow naturally at the surface,  
3600 the well shall be equipped with a control valve so that the flow  
3601 can be completely stopped. The control valve must be available  
3602 for inspection by the state engineer at all times.

3603  
3604 16.8 Seals Between Casings. If the well is constructed of  
3605 multiple casing strings at or near the ground surface and if a  
3606 pitless adapter/unit is installed, the standards of Subsection  
3607 R655-4-11(11.5.5) shall be employed to ensure proper sealing  
3608 between casings is maintained.

3609  
3610 16.9 Water Level and Flow Measurement. Following pump  
3611 installation and repair work, the well shall be left in such a  
3612 manner to allow for access to water level measurements in  
3613 accordance with R655-4-11(11.7.2). After pump installation and  
3614 repair work is completed on a well, the static water level should

3615 be measured after which a test should be performed to determine  
3616 the rate at which groundwater can be reliably produced from the  
3617 well. Pumping water level should be measured and recorded during  
3618 this test. Static water level and well testing information shall  
3619 be noted on the official submittal of the Pump Log by the pump  
3620 installer or well driller.

3621  
3622 16.10 Surface Security. If it becomes necessary for the pump  
3623 installer to temporarily discontinue operation on a well before  
3624 completion or otherwise leave the well unattended, the well must  
3625 be covered securely to prevent contaminants from entering the  
3626 casing and rendered secure against entry by children, vandals,  
3627 domestic animals, and wildlife.

3628  
3629 16.11 Above-grade connections. An above-grade connection into the  
3630 top or side of a well casing shall be at least eighteen inches  
3631 (18") above the land surface and shall be constructed so as to  
3632 exclude dirt or other foreign matter by at least one of the  
3633 following methods, as may be applicable:

3634 (A) Threaded connection;

3635 (B) Welded connection;

3636 (C) Rubber expansion sealer;

3637 (D) Bolted flanges with rubber gaskets;

3638 (E) Overlapping well cap; or

3639 (F) If a water well pump is mounted or sealed on a concrete  
3640 pedestal, the casing shall extend at least one inch (1") into the  
3641 base of the pedestal and at least eighteen inches (18") above the  
3642 land surface.

3643  
3644 16.12 Pitless Connections. Pitless adapters and units shall be  
3645 installed in accordance with the standards set forth in Subsection  
3646 R655-4-11(11.7.5). Pitless adapters shall be installed below the  
3647 frost line. A below-ground connection shall not be submerged in  
3648 water at the time of installation. Holes cut in the casing  
3649 through which the pitless adapters are installed must be sized and  
3650 constructed so as to guarantee a watertight seal with the pitless  
3651 adapter in place.

3652  
3653 16.13 Backflow Protection. When a check valve or foot valve is  
3654 not a part of the pump, a check valve or back-siphon prevention  
3655 device shall be installed on the pump discharge line within the  
3656 well to eliminate the opportunity for contaminated water to  
3657 backflush into the well. Such device must be designed to direct  
3658 or isolate the water flow to prevent water in the distribution  
3659 line from running back down the well during removal or repair to  
3660 the pump and pumping equipment. When a flow meter is installed on  
3661 a well the meter must be located downstream from the backflow  
3662 preventer and be placed in accordance with manufacturer spacing  
3663 specifications.

3664  
3665 16.14 Hand Pumps. Hand pumps shall be of the force type equipped  
3666 with a packing gland around the pump rod, a delivery spout which  
3667 is closed and downward directed, and a one-piece bell-type base



3668 which is part of the pump stand or is attached to the pump column  
3669 in a watertight manner. The bell base of the pump shall be bolted  
3670 with a gasket to a flange which is securely attached to the casing  
3671 or pipe sleeve.

3672  
3673 16.15 Pumping Water Level. In a screened or perforated well, the  
3674 well pump setting and suction inlet shall be located so that the  
3675 pumping level of the water cannot be drawn below the top of the  
3676 screen.

3677  
3678 16.16 Pump and Column/Drop Pipe Removal. During any repair or  
3679 installation of a water well pump, the licensed installer shall  
3680 make a reasonable effort to maintain the integrity of ground water  
3681 and to prevent contamination by elevating the pump column and  
3682 fittings, or by other means suitable under the circumstances.

3683