

Chapter 25 Version 6/9/2016-Changes Made After 7/8/15 EQC Hearing

Section 3, Line Numbers 38 and 39:

Text changed from “New construction following the effective date of this regulation must obtain authorization under a new permit or modification of existing permitted facilities” to “New construction or modification of existing facilities following the effective date of this regulation must obtain authorization under a new permit.”

Section 17, Line Number 1678

Text changed from “A permit by rule requires the owner to submit the information contained in paragraph (e) of this section to the Wyoming Department of Environmental Quality, Water Quality Division prior to constructing or installing the system” to “A permit by rule requires the owner to submit the information contained in paragraph (e) of this section to the Wyoming Department of Environmental Quality, Water Quality Division prior to constructing, modifying, or installing the system.”

CHAPTER 25

SEPTIC TANKS, ~~AND/OR~~ SOIL ABSORPTION SYSTEMS, AND OTHER SMALL
WASTEWATER SYSTEMS

Section 1. ~~General~~ Authority.

This rule is promulgated pursuant to Wyoming Statutes (W.S.) 35-11-101 through 35-11-1904, specifically 35-11-302(a)(iii).

Section 2. ~~Definitions~~ Objective.

~~(formerly Section 1)~~ This ~~part~~ Chapter contains the minimum standards for the design and construction of ~~sewerage small wastewater systems, treatment works and disposal systems for domestic wastes and industrial wastes generated by facilities other than specifically covered by other parts of this Chapter~~ which that are defined by W.S. 35-11-103(c)(ix). In addition, this Chapter contains the minimum standards for the design and construction of Underground Injection Control (UIC) Class V facilities 5C1-5C3, 5C6, 5D1, 5E1, 5E3-5E5 as defined in Chapter 46-27, Appendices A and B-C and D.

The following situations will require the application package to be sealed, signed, and dated by a professional engineer (PE): non-domestic wastewater from commercial and industrial facilities, high strength wastewater, individual permits to construct, or standard soil absorption systems with a soil percolation rate ~~which that~~ is either less than 5 minutes per inch (mpi) or more than 60 minutes per inch (mpi).

These standards pertain to permits required pursuant to Chapters 3 and 25, Wyoming Water Quality Rules and Regulations. The installation of all components of a small wastewater system require a permit to construct. Permits to construct are specified throughout this chapter as general permits, described in Chapter 3, Section 7; permit by rule, described in Chapter 3, Section 8; or as individual permits to construct, described in Chapter 3, Section 6.

Section 3. ~~Design Flows~~ Timing of Compliance with These Regulations.

Any Chapter 3 permit-to-construct issued for facilities ~~otherwise~~ subject to this chapter prior to the effective date of these regulations, and any facility authorized under the Division's "General Permit to Construct, Install, Modify or Operate a Small Wastewater Facility" shall remain covered under those permits. New construction or modification of existing facilities following the effective date of this regulation must obtain authorization under a new permit.

Section 4. ~~Isolation~~ Definitions.

(a) ~~"Absorption system" means a system constructed under the surface of the ground which receives and distributes effluent from a pretreatment device effectively filtering the effluent through soil or media.~~ "100 year floodplain" means a tract of land throughout a watershed that has a one-in-one hundred chance or occurrence of flooding in any given year or a return period of once every 100 years, as determined by the United States Geological Survey (USGS), Federal Emergency Management Agency (FEMA) or a local planning and development authority.

51 (b) ~~“Aerobic unit” means a covered, watertight receptacle which receives wastewater.~~
52 ~~The unit removes settleable solids, floatable material, and a part of soluble organic matter by the~~
53 ~~use of aerobic biological treatment. “Absorption surface” means the interface where treated~~
54 ~~effluent infiltrates into native or fill soil.~~

55 (c) ~~“Building drain” means the building drain is that part of the lowest piping of a~~
56 ~~drainage system which receives the discharge from soil, waste and other drainage pipes inside the~~
57 ~~walls of the building and conveys it to the building sewer beginning two feet (.6m) outside the~~
58 ~~building wall. “Bed” means a soil treatment and dispersal system where the width is greater than~~
59 ~~three (3) feet.~~

60
61 (d) ~~“Bedrock” means geological layers, of which greater than 50 percent by volume~~
62 ~~consist of unweathered in-place consolidated rock or rock fragments. Bedrock also means~~
63 ~~weathered in-place rock which that cannot be hand augered or penetrated with a knife blade.~~

64
65 (e) ~~“Bedroom” means any room that is or may be used for sleeping.~~

66
67 (f) ~~“Dosing system” means the system of tanks, pumps or syphons, and piping located~~
68 ~~between the septic tank and soil absorption system which is intended to apply a large quantity of~~
69 ~~settled wastewater to the absorption system in a short period of time. “Blackwater” means water~~
70 ~~containing fecal matter and/or urine~~

71
72 (g) ~~“Hydrogeological study” means a study of the occurrence, distribution, quality and~~
73 ~~movement of the shallowmost groundwater of the site and the potential impact of wastewaters on~~
74 ~~the groundwater. “Five day biochemical oxygen demand (BOD₅)” means a measurement of~~
75 ~~the dissolved oxygen used by microorganisms in the biochemical oxidation of organic matter~~
76 ~~during a five (5) day period.~~

77
78 (h) ~~“Impermeable soil” means any soil which has a percolation rate greater than 60~~
79 ~~minutes per inch.~~

80
81 ~~Previously 2(d) “Building sewer” means the building sewer is that part of the horizontal piping~~
82 ~~the pipe of a drainage system which extends from the end of the building drain and conveys the~~
83 ~~building drain discharge to the septic tank or other onsite sewage disposal facility that carries~~
84 ~~wastewater from the building.~~

85
86 (i) ~~“Pump Tank” means a tank in which the dosing pumps or syphons are installed.~~
87 ~~“Chamber” means a domed open bottom structure that is used in lieu of perforated distribution~~
88 ~~pipe and gravel media.~~

89
90 (j) ~~“Delegated small wastewater program” means a local governmental entity,~~
91 ~~delegated by the Administrator, with the authority to administer the provisions of W.S. 35-11-~~
92 ~~301(a) (iii) for small wastewater systems pursuant to the provisions of W.S. 35-11-304.~~

93
94 (k) ~~“Direct human consumption food crops” are crops consumed directly by humans.~~
95 ~~These include, but are not limited to fruits, vegetables and grains grown for human consumption.~~

96
97 (l) ~~“Domestic wastewater” means a combination of the liquid or water-carried wastes~~
98 ~~from residences, business buildings, institutions, and other establishments arising from normal~~
99 ~~living activities.~~

100

101 ~~Previously 2(e) (m) “Domestic sewage septage” “Domestic”~~ means the liquid ~~and~~
102 ~~waterborne wastes or solid material derived removed from the ordinary living processes a waste~~
103 ~~treatment vessel, free from industrial wastes, and of such character as to permit satisfactory~~
104 ~~disposal without special treatment~~ that has received only wastes from residences, business
105 buildings, institutions, and other establishments arising from normal living activities.
106

107 (n) “Dosing tank” means a tank equipped with an automatic siphon or pump designed
108 to discharge effluent on an intermittent basis.
109

110 (o) “Effluent” means a liquid flowing out of a septic tank, other treatment vessel or
111 system.
112

113 (p) “Effluent filter” means a removable, cleanable device inserted into the outlet piping
114 of a septic tank or other treatment vessel designed to trap solids that would otherwise be
115 transported to the soil absorption system or other downstream treatment components.
116

117 (q) “Evapotranspiration” means the combined loss of water from soil by evaporation
118 from the soil or water surface and by transpiration from plants.
119

120 (r) “Greywater” means untreated wastewater that has not been contaminated by any
121 toilet discharge; ~~which that~~ is unaffected by infectious, contaminated, or unhealthy bodily wastes;
122 and does not present a threat from contamination by unhealthful processing, manufacturing, or
123 operating wastes. “Greywater” includes but is not limited to wastewater from bathtubs, showers,
124 washbasins, clothes washing machines (unless soiled diapers are serviced), laundry tubs, and
125 kitchen sinks.
126

127 (s) “Grease interceptor” means a device designed to separate fats, oils, and grease
128 from wastewater.
129

130 (t) “Groundwater” means subsurface water that fills available openings in rock or soil
131 materials such that they may be considered water saturated under hydrostatic pressure.
132

133 (u) “High groundwater” means seasonally or periodically elevated levels of
134 groundwater.
135

136 (v) “High strength wastewater” means a wastewater stream with a BOD₅ higher than
137 200 mg/L.
138

139 (w) “Holding Tank” means a watertight receptacle designed to receive and store
140 wastewater.
141

142 (x) “Manifold” means a non-perforated pipe that distributes effluent to individual
143 distribution pipes.
144

145 (y) “Mound system” means an onsite wastewater system where ~~the bottom~~ any part of
146 the absorption surface is above the elevation of the existing site grade, and the absorption surface
147 is contained in a mounded fill body above the grade.
148

149 (z) “Mulch basin” means an excavated area that has been refilled with a highly
150 permeable media, organic and inorganic materials intended to distribute greywater to irrigate
151 vegetation.

152
153 (aa) “Pathogens” are disease-causing organisms. These include, but are not limited to,
154 certain bacteria, protozoa, viruses, and viable helminth ova.

155
156 (bb) “Percolation rate” means the time expressed in minutes per inch required for water
157 to seep into saturated soil at a constant rate.

158
159 (cc) “Pipe invert” means the bottom ~~or lowest horizontal point~~ of the internal surface of
160 the pipe.

161
162 (dd) “Percolation test” means the method used to measure the percolation rate of water
163 into soil as described in Appendix A.

164
165 (ee) “Permit by rule” means an authorization included in these rules ~~which that~~ does not
166 require either an individual permit or a general permit. A facility which is permitted by rule must
167 meet the requirements found in this chapter, but is not required to apply for and obtain a permit to
168 construct and operate the facility.

169
170 (ff) “Pressure distribution” means a network of pipes in which effluent is forced
171 through orifices under pressure.

172
173 (gg) “Restrictive layer” means a nearly continuous layer that has one or more physical,
174 chemical, or thermal properties that significantly impede the movement of water and air through
175 the soil or that restrict roots or otherwise provide unfavorable root conditions. Examples are
176 bedrock, cemented layers, dense layers, and frozen layers.

177
178 (hh) “Septage” means liquid or solid material removed from a waste treatment vessel
179 that has received wastes from residences, business buildings, institutions, and other
180 establishments.

181
182 (ii) “Septic tank” means a ~~buried,~~ watertight tank designed and constructed to receive
183 and treat raw wastewater.

184
185 (jj) “Serial distribution” means a group of trenches arranged so that the total effective
186 absorption area of one trench is used before liquid flows into the next trench.

187
188 (kk) “Service provider” means a person authorized and trained by a system
189 manufacturer or their vendor to operate and maintain any proprietary system.

190
191 (ll) “Soil absorption system” means a shallow, covered, excavation ~~surface, or mound~~
192 made in unsaturated soil into which wastewater effluent from the septic tank is discharged
193 through distribution piping for application onto absorption surfaces through porous media or
194 manufactured components ~~placed in the excavations.~~

195
196 (mm) “Trench” means an absorption surface with a width of three (3) feet or less.

197
198 **Section 5. ~~Site Suitability~~ Design Flows.**

199
200 ~~(formerly Section 3) The sewerage system, treatment works and disposal system shall have a~~
201 ~~minimum absorption area based on the minimum peak design flows listed in Table 1 below. The~~
202 ~~volume of wastewater shall be determined by one of the following:~~

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- (a) Tables 1 and 2 provided in this section.
- (b) Metered water supply data from the facility.
- (c) Metered water supply data from another facility where similar water demands have been demonstrated.

Table 1

Quantities of Domestic Sewage Flows

| Type of Establishment | Flow (gallons per day per _____) |
|---|----------------------------------|
| Residential Units | |
| Single Family Dwellings | 150/bedroom |
| Multiple Family Dwelling (with laundry capabilities) | 150/bedroom |
| Multiple Family Dwelling (without laundry capabilities) | 120/bedroom |
| Cottages | 50/person |
| Mobile Home Parks | 350/home* |
| Commercial Facilities | |
| Airports | 4/passengers |
| Bar | 3/patron |
| Bathhouses and swimming pools | 10/person |
| Campgrounds (individual sewer outlets available) | 100/site |
| Campgrounds (service building only) | 75/site |
| Car or truck wash | 200/vehicle |
| Church (no food preparation and/or dishwashing) | 5/seat |
| Church (food preparation and/or dishwashing) | 7/seat |
| Country Club | 100/member |
| Factories | 30/employee |
| Hospital | 200/bed |
| Laundry (self-service) | 600/machine or 50/cycle |
| Motels | 80/double bed or 40/single bed |
| Office building | 30/employee |
| Restaurant (toilet and kitchen wastes) | 13/meal |
| Restaurant (kitchen wastes) | 6/meal |
| Restaurant (additional for bars and lounges) | 2/meal |
| Restaurant (kitchen wastes with disposable service) | 2/meal |
| Rest Home | 100/resident |
| Schools Boarding | 100/resident student |
| Day, without gyms, cafeterias, or showers | 15/student |
| Day, with cafeterias only | 20/student |
| Day, with cafeteria, gym and showers | 25/student |
| Service stations | 10/vehicle served |
| Shopping Center | 2/parking space |
| Store, Retail | 30/employee |

| | |
|---|--|
| Theaters: Movie Drive-In | 5/seat 15/vehicle space |
| Warehouses | 30/employee |

218 * ~~Must consider flow into the soil absorption system from mobile homes where taps are allowed~~
219 ~~to run to prevent freezing.~~
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Table 1. Residential Design Flow Rates per Bedroom (gallons per day, gpd)¹

| | |
|-------------------|------------|
| <u>1 bedroom</u> | <u>150</u> |
| <u>2 bedrooms</u> | <u>280</u> |
| <u>3 bedrooms</u> | <u>390</u> |
| <u>4 bedrooms</u> | <u>470</u> |
| <u>5 bedrooms</u> | <u>550</u> |
| <u>6 bedrooms</u> | <u>630</u> |

225 ¹An unfinished basement is considered two (2) additional bedrooms.

226 ²The design flow shall be increased by eighty (80) gpd for each additional bedroom over six (6).

227

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Table 2. Non-Residential Wastewater Design Flow Rates¹

| Facility | Unit | Flow (gallons/unit/day) |
|--|-----------------|------------------------------------|
| Airports | <u>person</u> | 4 |
| <u>Apartment</u> | <u>bedroom</u> | <u>120</u> |
| <u>Automobile</u> Service Station | vehicle served | 10 |
| <u>Bars</u> | <u>seat</u> | <u>20</u> |
| Bathhouses and swimming pools | person | 10 |
| Campgrounds (<u>w/ toilets only</u>) | <u>person</u> | <u>25</u> |
| Campgrounds (<u>w/shower facility</u>) | <u>person</u> | <u>45</u> |
| <u>Church</u> | <u>person</u> | 4 |
| Country Club | member | <u>25</u> |
| <u>Day School, Office Building, Retail Store, Warehouse (no showers)</u> | <u>person</u> | <u>15</u> |
| Hospital | bed | <u>250</u> |
| <u>Industrial Building (sanitary waste only)</u> | <u>employee</u> | <u>20</u> |
| Laundry (self-service) | <u>machine</u> | <u>450</u> |

| | | | |
|--|--|----------------|--------------------|
| Mobile Home | | <u>bedroom</u> | <u>See table 1</u> |
| Motel, <u>Hotel, Resort</u> | | <u>bedroom</u> | <u>140</u> |
| <u>Recreational Vehicle</u> | | <u>each</u> | <u>100</u> |
| Rest Home, <u>Care Facility, Boarding School</u> | | bed | 100 |
| Restaurant | | meal | <u>10</u> |
| <u>Restaurant (kitchen waste only)</u> | | <u>meal</u> | <u>6</u> |
| Theater | | <u>seat</u> | <u>3</u> |

¹Values shown in the above table are the typical flow rates from *Wastewater Engineering Treatment and Reuse*, Metcalf and Eddy, 2003 Edition.

Section 6. ~~Building Sewer Pipes~~ Systems not Specifically Covered by This Rule.

This section is provided to encourage new technology and equipment and provide a process for evaluating and permitting designs that deviate from this rule. The proposed construction of facilities and processes not in compliance with this rule may be permitted provided that the facility, when constructed and operated, meets the objective of these rules.

(a) Each application for a permit to construct shall include an engineering design report, detailed construction plans, and technical specifications for all piping, tanks, and equipment. All of the documents shall have a suitable title showing the owner's name and the Wyoming registration number, seal, and signature of the engineer.

(b) Each application for a permit to construct will be evaluated on a case-by-case basis using the best available technology. The application shall include at least one of the following:

(i) Data obtained from a full scale, comparable installation that demonstrates the acceptability of the design.

(ii) Data obtained from a pilot plant operated under the design condition for a sufficient length of time to demonstrate the acceptability of the design.

(iii) Data obtained from the theoretical evaluation of the design that demonstrates a reasonable probability the facility will meet the design objectives.

(iv) An evaluation of the flexibility of making corrective changes to the constructed facility in the event it does not function as planned.

(c) If an applicant wishes to construct a pilot plant to provide data necessary to show the design will meet the purpose of the act, a permit to construct must be obtained.

Section 7. ~~Soil Absorption System Sizing~~ Site Suitability.

(a) ~~(Formerly 4(e) Location.~~ Small wastewater systems must be located where the surface drainage is sufficient to allow proper operation of the small wastewater system. ~~Formerly 10(a)(iii) Runoff. Surface runoff shall be diverted around or away from all soil absorption systems.~~ Avoid depressions and bases of slopes and areas in the path of runoff from roofs, patios,

268 driveways, or other paved areas unless surface drainage is provided. ~~Formerly 4(e))Absorption~~
269 systems Small wastewater systems shall not be located beneath buildings, parking lots, roadways,
270 driveways, irrigated landscaping, or ~~other similarly~~ compacted areas.

271
272 ~~(formerly 10(a)(i))(b) Replacement area.—An area shall be designated and shown on the~~
273 ~~plans for future installation of a replacement absorption system.—The site must include area for~~
274 both the proposed soil absorption system and a future replacement soil absorption system. Both
275 the proposed and replacement soil absorption systems shall be sized to receive one-hundred
276 (100%) percent of the wastewater flow. If a trench system is used, the replacement ~~area soil~~
277 absorption system may ~~include the area be located~~ between the trenches ~~of the proposed soil~~
278 absorption system if ~~sufficient spacing has been provided~~ there is at least nine (9) feet of spacing
279 between trench sidewalls. ~~At least three feet of undisturbed soil shall remain between the existing~~
280 ~~and replacement trench side walls.~~

281
282 ~~—— (formerly 5(e)) Groundwater protection and bedrock or impermeable soil separation.~~

283
284 ~~(formerly 5(e)(i))~~ (c) For single family homes, For standard soil absorption systems the
285 effective suitable soil depth to bedrock or impermeable soil must be shall extend at least four (4)
286 feet ~~from below~~ the bottom of the absorption system ~~stone and the natural ground surface to any~~
287 restrictive layer, fractured rock, or highly permeable material.

288
289 ~~(formerly 5(e)(i))(d) ——~~ The depth to ~~seasonally high groundwater must shall~~ be at least
290 four (4) feet ~~from below~~ the bottom of the absorption ~~system surface stone and at least two feet~~
291 ~~from the natural ground surface. for all treatment systems except pressure distribution. (formerly~~
292 ~~5(e)(ii)) ——~~ For all systems other than single family homes up to 2000 gallons per day, the depth
293 to bedrock or impermeable soil must be at least four feet from the natural ground surface. The
294 depth to seasonally high groundwater must be at least four feet from the bottom of the absorption
295 system ~~stone and at least two feet from the natural ground surface. Also, For pressure distribution~~
296 systems, the depth to high groundwater shall be a minimum of at least three (3) feet of
297 unsaturated soil shall be maintained between below the bottom of the absorption ~~system stone~~
298 surface ~~and the estimated groundwater mound imposed on the seasonally high groundwater table.~~
299 if the percolation rate of the soil is five (5) minutes per inch or greater (5-60 mpi). ~~The height of~~
300 ~~the groundwater mound may be estimated from Figures 1 through 6. The average daily flow~~
301 ~~should be used and may be estimated as 0.6 times the flow determined from Table.~~

302
303 ~~(formerly 5(e) (iii))~~ For all systems larger than 2000 gallons per day, a minimum of
304 ~~three feet of unsaturated soil shall be maintained between the bottom of the absorption system~~
305 ~~stone and the estimated groundwater mound imposed on the seasonally high groundwater table.~~
306 ~~The maximum height of the groundwater mound shall be estimated by the design engineer.~~

307
308 ~~—— (formerly Section 5(e))(e) Sloping ground installations~~ Slope

309
310 ~~(formerly Section 5(e)(i))(i)~~ Absorption systems shall not be located in an area
311 where the natural slope is steeper than stated below. The following are Table 3 shows the
312 maximum permissible slopes on which an absorption system may be constructed.

313

314
315
316

~~(formerly contained in Section 5(e)(i))~~ **Table 3. Slope and Percolation Rates for Absorption Systems**

| Percolation Rate (minutes/inch) | Maximum Slope¹ |
|--|----------------------------------|
| Faster than 5 | 25% |
| 6-45 | 20% |
| 46-60 | 15% |

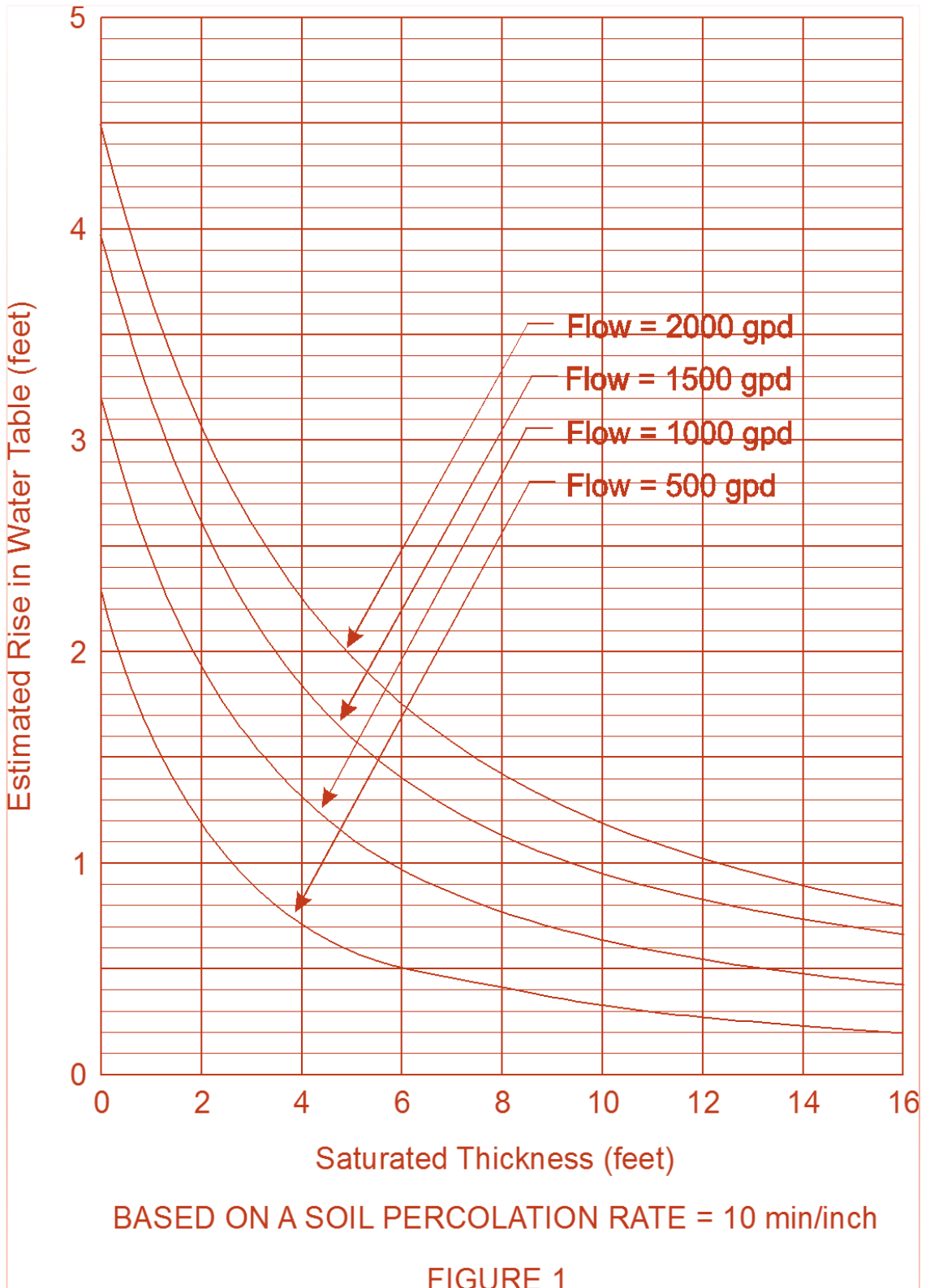
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¹ Flatter slopes may be required where the effluent ~~may surface~~ surfaces downslope.

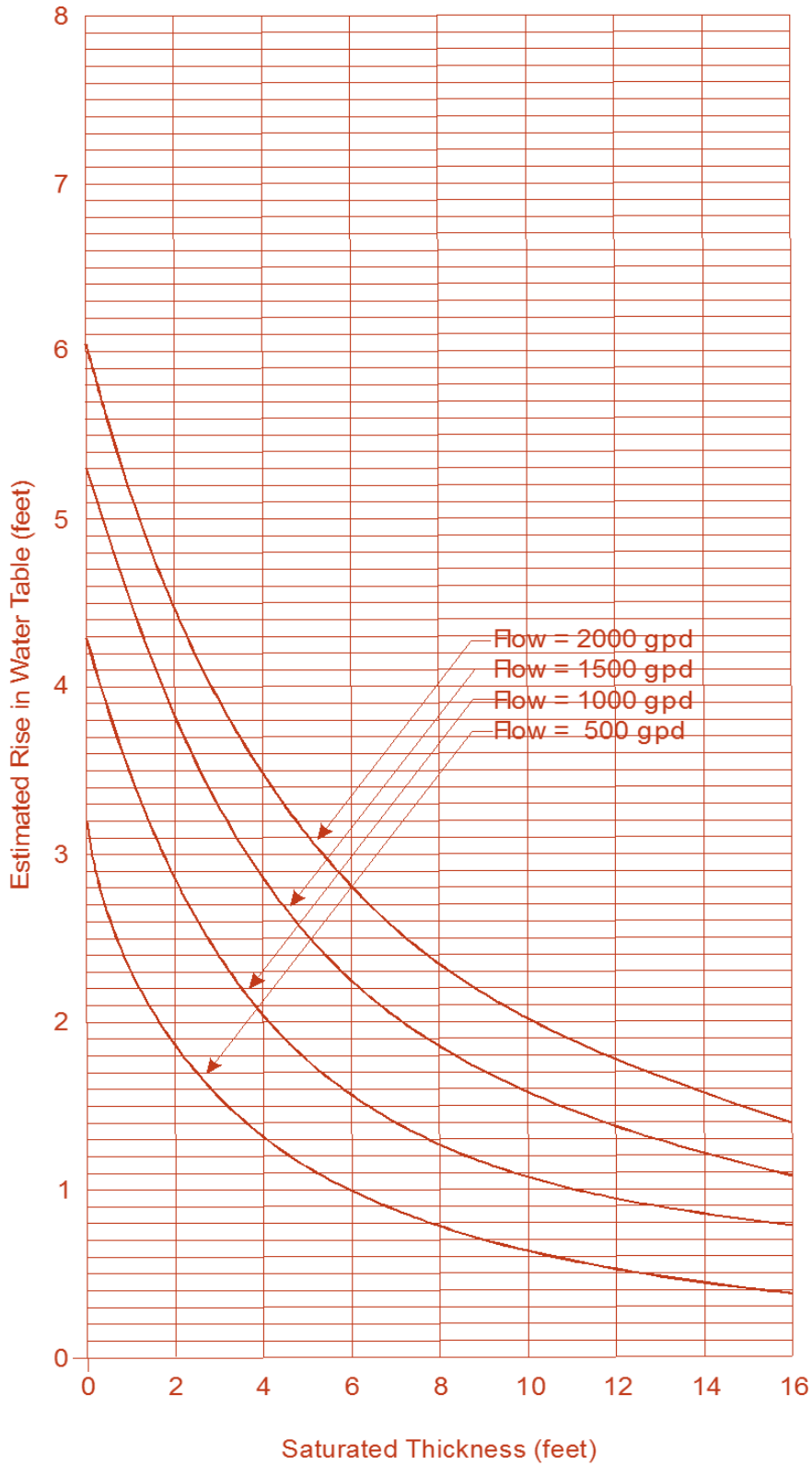
~~(formerly 5(e)(ii)) “Saturated thickness” Distance between the seasonally high groundwater table and the under lying impervious layer such as clay, bedrock or soils with significantly lower permeability.~~

~~(formerly 5 (e)(ii)) “Estimated Rise in Water Table”: The estimated distance the water table will rise at the center of the absorption system above the initial water table when the indicated flow is applied daily.~~

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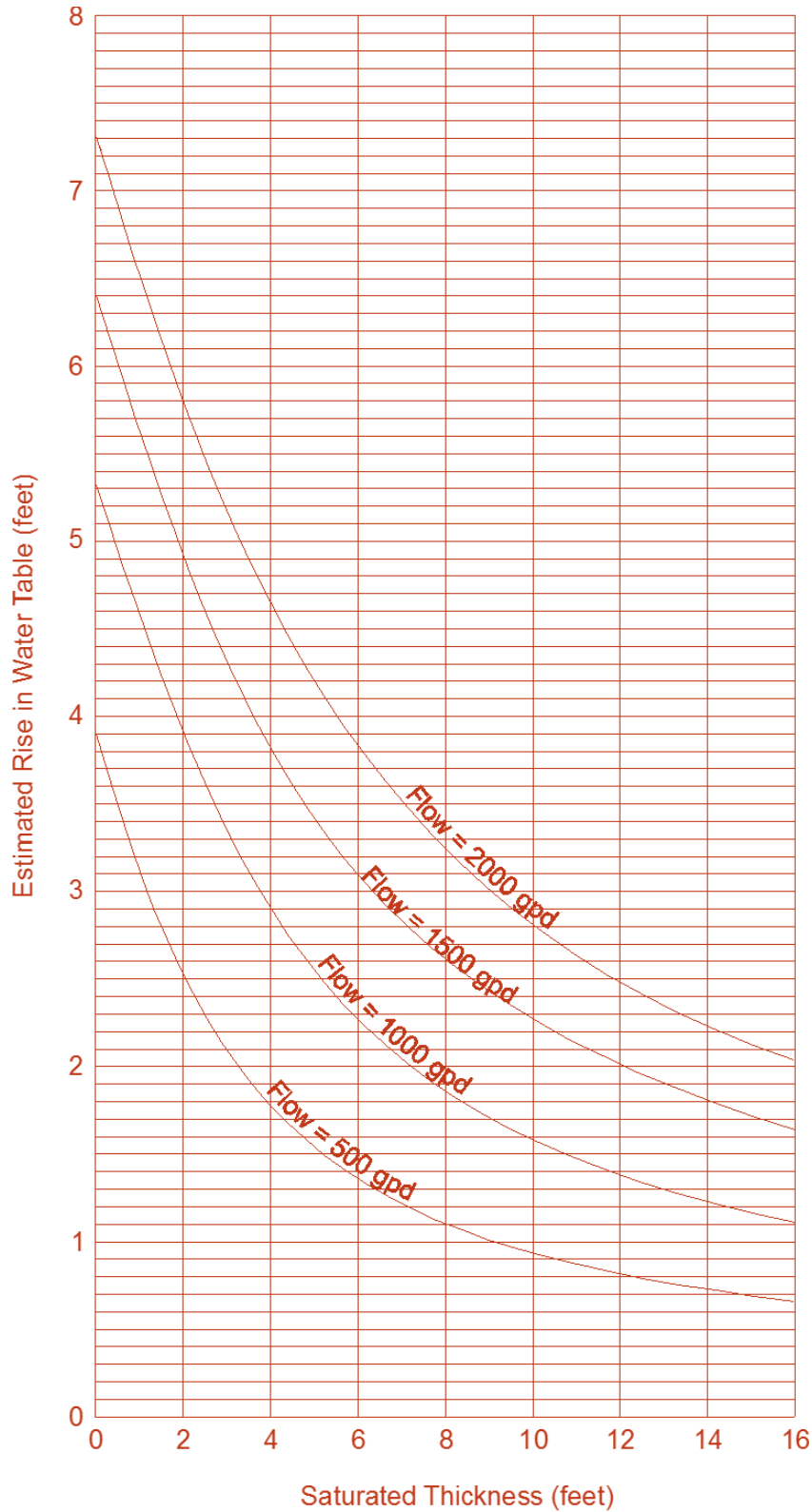


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BASED ON A SOIL PERCOLATION RATE = 20 min/inch

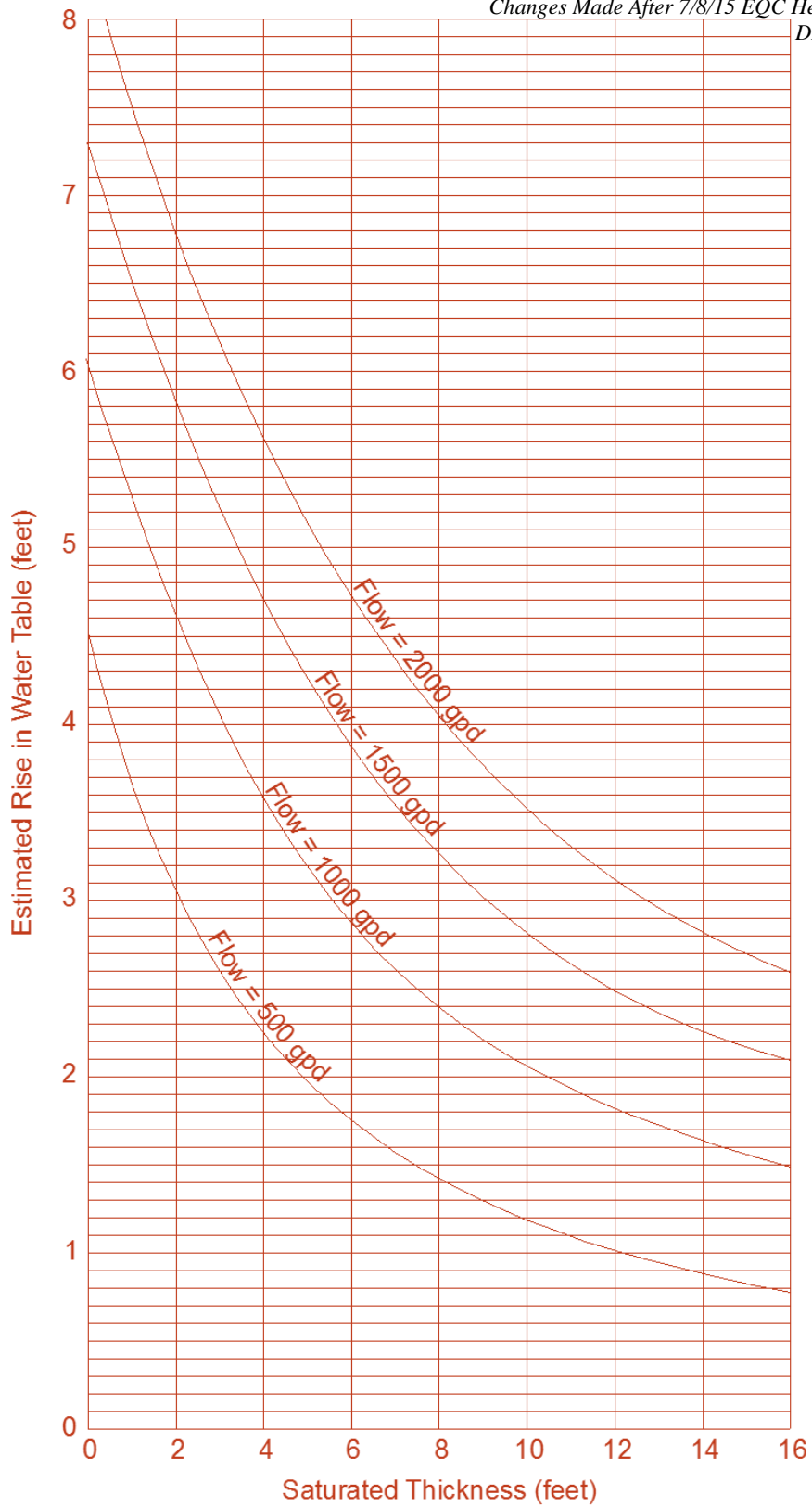
FIGURE 2



BASED ON A SOIL PERCOLATION RATE = 30 min/inch

FIGURE 3

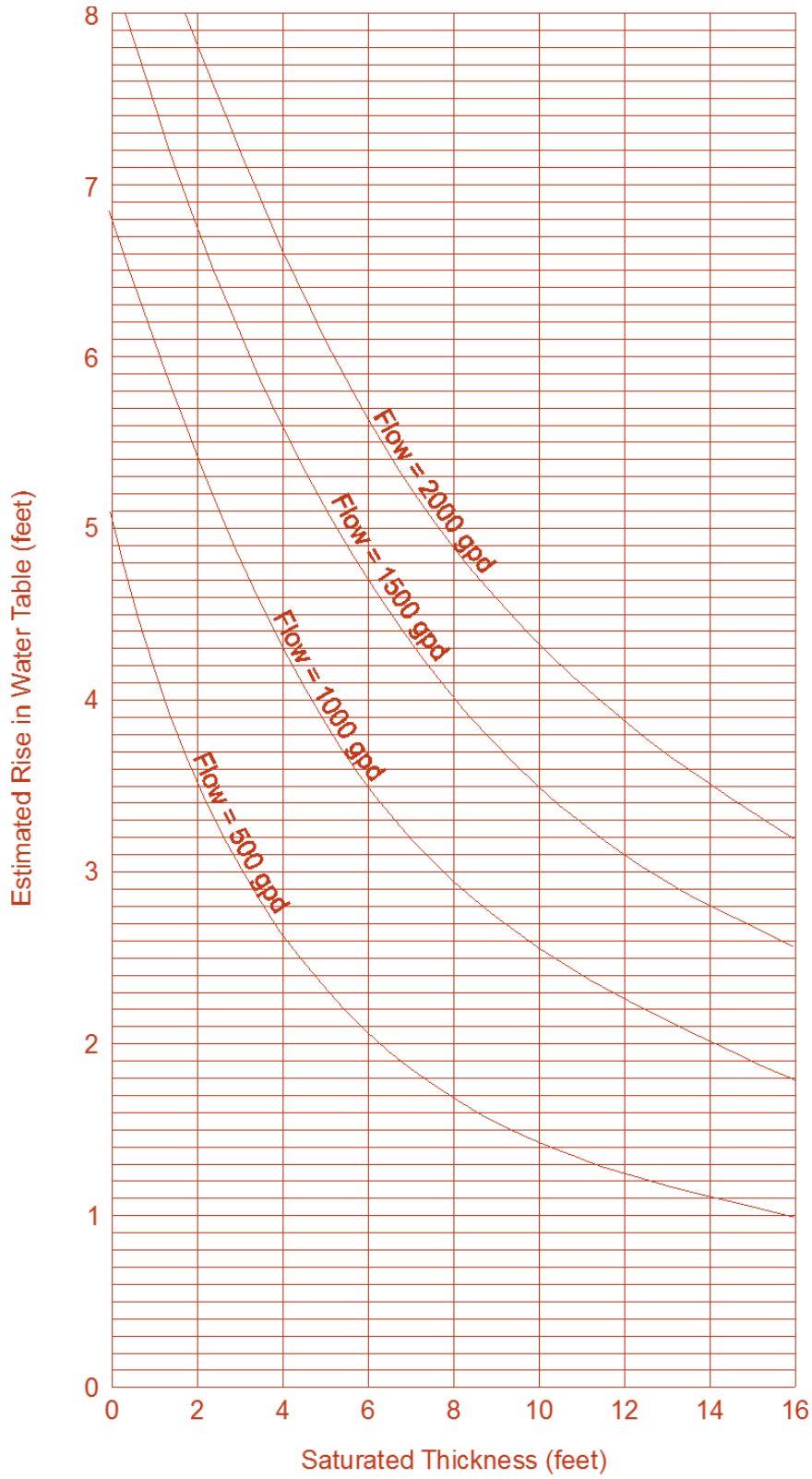
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BASED ON A SOIL PERCOLATION RATE = 40 min/inch

FIGURE 4

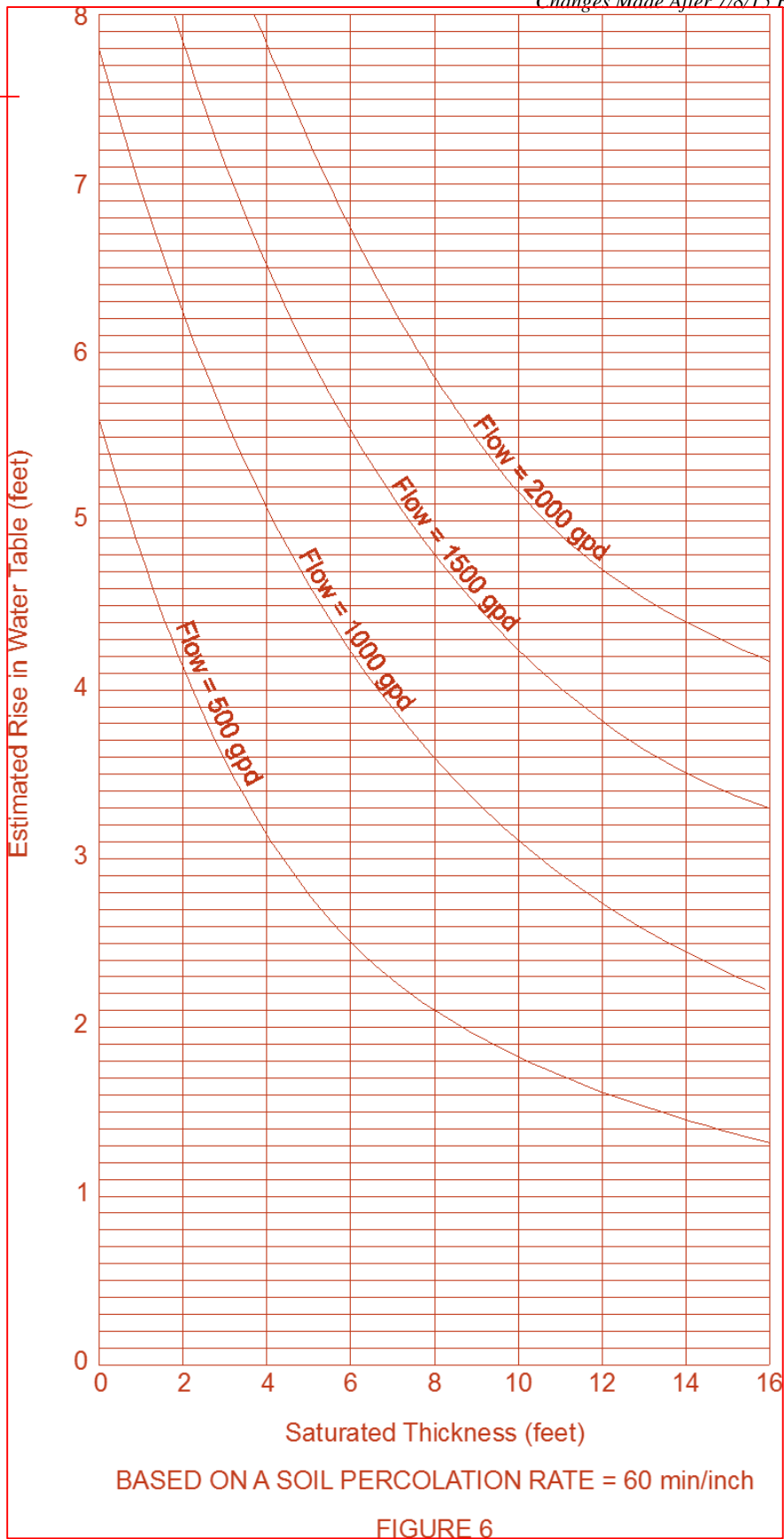
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BASED ON A SOIL PERCOLATION RATE = 50 min/inch

FIGURE 5

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389 (ii) Serial distribution, with the use of drop boxes or approved fittings, is the
390 preferred installation method for sloping terrain. The bottom of individual trenches shall be level
391 and the trenches shall be constructed to follow the contours of the land.

392
393 (iii) The placement of multiple trenches, with each subsequent trench down slope of
394 the previous trench shall be avoided when the addition of effluent to the soil absorption system
395 trenches may lead to either an unstable slope or seepage down slope.

396
397 ~~(formerly 5(e)(ii))~~(iv) All absorption surfaces must be located at least 15
398 horizontal feet from the top of any break in slope ~~which that~~ exceeds the maximum ~~allowed in~~
399 ~~subsection (i) above~~ slope allowed.

400
401 (f) Soil Exploration Pit and Percolation Tests

402
403 (i) Delegated small wastewater programs shall require a percolation test in
404 addition to the soil exploration pit.

405
406 (ii) ~~(formerly 5(a))~~ ~~Soil exploration. Soil exploration~~ A minimum of one soil
407 exploration pit within the proposed soil absorption system location shall be excavated to a
408 minimum depth of four (4) feet below the bottom of the proposed soil absorption system ~~shall be~~
409 ~~made to provide information on subsoil conditions~~ to evaluate the subsurface conditions.

410
411 ~~(formerly 5(b))~~ ~~Soil evaluation.~~

412
413 ~~(formerly 5(b)(i))~~ ~~No less than three percolation tests shall be run in the~~
414 ~~proposed absorption system location. The percolation tests shall be performed in accordance with~~
415 ~~Appendix A of this part. The type of soil encountered at the percolation test location shall be~~
416 ~~specified.~~

417
418 ~~((formerly 5b)(ii))~~ (iii) The percolation test shall be performed in accordance with
419 Appendix A of this chapter. An evaluation of the soil texture, in the proposed soil absorption
420 system location, by a person experienced in soils classification, may be used as an additional tool
421 to confirm the percolation rate. ~~but at least one percolation test shall be performed.~~

422
423 ~~(formerly Section 4)~~(g) Isolation Minimum horizontal setback distances (in feet) are as
424 follows:

425
426 ~~(formerly 4(a))~~ ~~Domestic wastewater. The isolation distances listed below apply when~~
427 ~~domestic wastewater is the only wastewater present.~~

428
429 ~~(formerly 4(a)(i))~~ ~~If the flow is less than 2000 gallons per day (gpd), the~~
430 ~~minimum isolation distance (in feet) shown in Table 2 shall be maintained.~~

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433
434
435
436
437
438 ~~(formerly Table 2)~~ Table 4. Minimum Horizontal Setbacks for Domestic
439 Wastewater in Feet^{1,2}

440

| From | To Septic Tank Or Equivalent | To Absorption System |
|--|------------------------------|------------------------|
| Wells (includes neighboring wells) | 50 | 100 |
| <u>Public Water Supply Well</u> | <u>100²</u> | <u>200²</u> |
| Property Lines | 10 | 10 |
| Foundation Wall (w/o drains) | 5 | 10 |
| Foundation Wall (with drains) | 5 | 25 |
| Potable Water Pipes | 25 | 25 |
| Septic Tank | <u>N/A</u> | 10 |
| Stream or Surface Body of Water, <u>Spring</u> (including seasonal and intermittent) | 50 | 50 |
| <u>Cisterns</u> | <u>25</u> | <u>25</u> |

441 ¹ ~~(formerly 4(b)) Non-domestic wastewater.~~ For disposal of ~~wastewaters other than~~
 442 ~~domestic non-domestic~~ wastewater, the ~~isolation setback~~ distance shall be determined by a
 443 hydrogeological study in accordance with Section ~~15~~ 17(b) of Chapter 3, but shall not be less than
 444 the distances shown in Table 4.

446 ² Small wastewater systems that discharge to the same aquifer that supplies a public water
 447 supply well and are located within Zone 1 or 2 (Attenuation) of the public water supply well, as
 448 determined by Wyoming Department of Environmental Quality Source Water Assessment Project
 449 (2004) or as established in Section 2 of the Wyoming Wellhead Protection Guidance Document
 450 (1997), shall provide additional treatment. These systems will be required to obtain an individual
 451 permit to construct and will require that a PE sign, stamp, and date the application, as stated in
 452 Section 2 of this chapter. The additional treatment shall be in accordance with Chapter 3 Section
 453 2(b)(ii). The treatment system shall be designed to reduce the nitrates to less than 10 mg/L of
 454 NO₃- as N and provide 4-log removal of pathogens before the discharge leaves the property
 455 boundary of each small wastewater system.

457 **Section 8. ~~Pretreatment~~ Soil Absorption System Sizing.**

459 ~~(formerly Section 7(a)-(a) Trench, bed and seepage pit systems.~~ The total ~~infiltrative~~
 460 ~~infiltration surface of a soil absorption system area of a soil absorption system~~ shall be calculated
 461 ~~based on the flow rate as determined by the criteria stated in Section 3 and with the allowable~~
 462 ~~loading rate as determined by using Figure 7.~~ by dividing the design flow rates (gpd) from Table
 463 1 or Table 2 by the loading rate (gpd/ft²) found in Table 5. ~~The total infiltrative surface is the sum~~
 464 ~~of the sidewall and bottom areas of the absorption system below the invert of the distribution~~
 465 ~~pipe.~~

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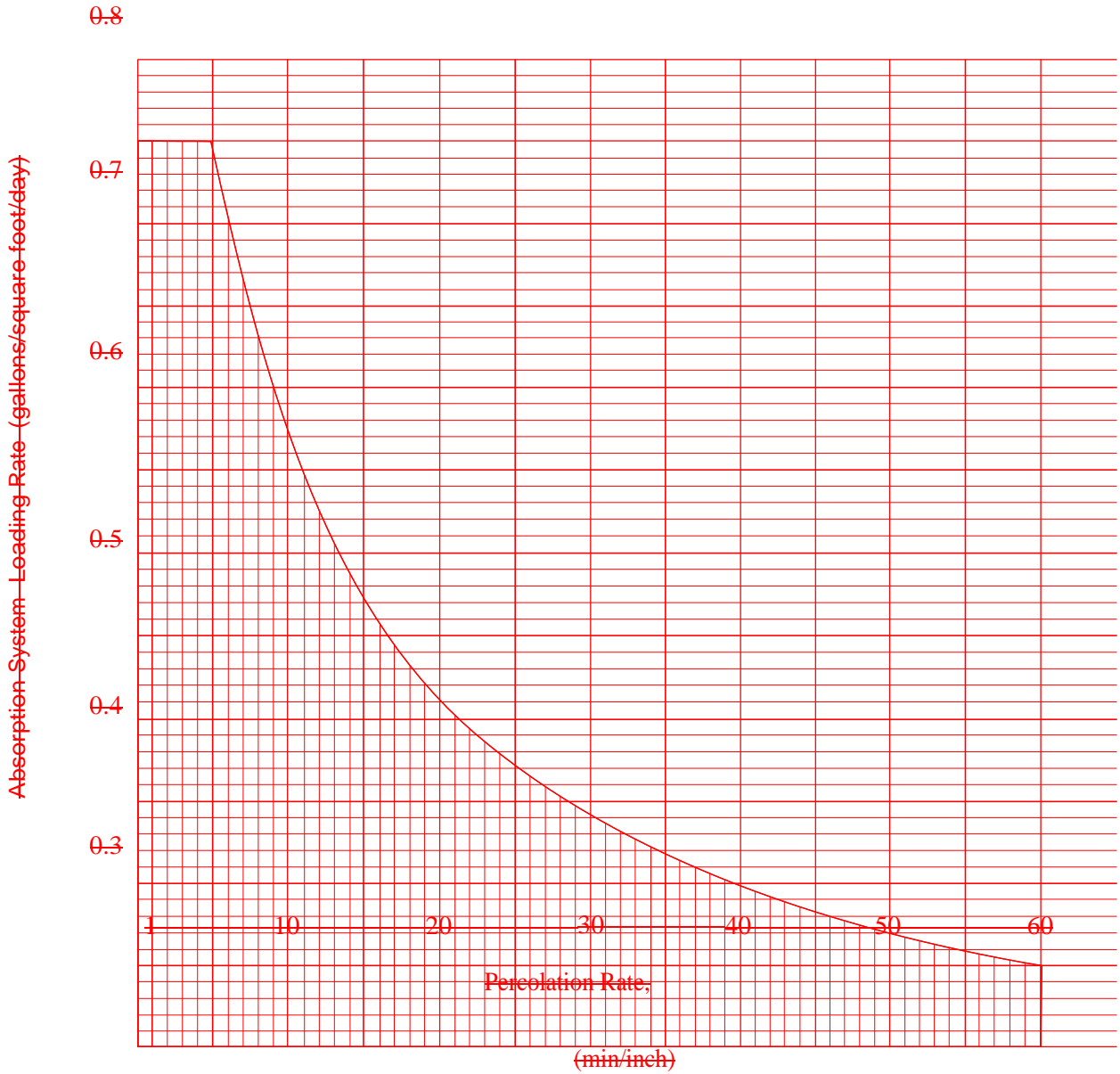


FIGURE 7

Table 5. Rates of Wastewater Application for Soil Absorption System Areas

| <u>Percolation Rate (mpi)</u> | <u>Loading Rate (gpd/ft²)</u> | <u>Percolation Rate (mpi)</u> | <u>Loading Rate (gpd/ft²)</u> |
|-----------------------------------|--|-----------------------------------|--|
| <u>5</u> | <u>0.80</u> | <u>21</u> | <u>0.45</u> |
| <u>6</u> | <u>0.75</u> | <u>22</u> | <u>0.44</u> |
| <u>7</u> | <u>0.71</u> | <u>23-24</u> | <u>0.43</u> |
| <u>8</u> | <u>0.68</u> | <u>25</u> | <u>0.42</u> |
| <u>9</u> | <u>0.65</u> | <u>26-27</u> | <u>0.41</u> |
| <u>10</u> | <u>0.62</u> | <u>28-29</u> | <u>0.40</u> |
| <u>11</u> | <u>0.60</u> | <u>30-31</u> | <u>0.39</u> |
| <u>12</u> | <u>0.58</u> | <u>32-33</u> | <u>0.38</u> |
| <u>13</u> | <u>0.56</u> | <u>34-35</u> | <u>0.37</u> |
| <u>14</u> | <u>0.54</u> | <u>36-37</u> | <u>0.36</u> |
| <u>15</u> | <u>0.52</u> | <u>38-40</u> | <u>0.35</u> |
| <u>16</u> | <u>0.50</u> | <u>41-43</u> | <u>0.34</u> |
| <u>17</u> | <u>0.49</u> | <u>44-46</u> | <u>0.33</u> |
| <u>18</u> | <u>0.48</u> | <u>47-50</u> | <u>0.32</u> |
| <u>19</u> | <u>0.47</u> | <u>51-55</u> | <u>0.31</u> |
| <u>20</u> | <u>0.46</u> | <u>56-60</u> | <u>0.30</u> |

522

523

524

(b) ~~Soils with a percolation rate of 60 minutes per inch or greater are unacceptable for standard absorption systems.~~ The total infiltration area shall be defined as follows:

525

526

527

(i) For standard trenches the total infiltration area shall be calculated based on the following formula:

528

529

530

$$A = L(W + 2S)$$

531

532

A = Total infiltration area

533

534

L = Total length of trench

535

536

W = Bottom width

537

538

S = Sidewall height of 12 inches or less

539

540

(A) The sidewall height is the depth below the flowline of the pipe to the bottom of the trench.

541

542

543

(B) The maximum credit for sidewall height shall not exceed twelve (12) inches even if the actual sidewall height exceeds twelve inches.

544

545

546

(ii) For chamber trenches, the total infiltration area shall be calculated based on the following formula:

547

548

549

$$A = L(E + 2S)$$

550

551

A = Total infiltration area

552

553

L = Total length of trench

554 _____
555 E = Effective bottom width (Multiply width of the chamber by factor of 1.43 to
556 get effective bottom width)

557 _____
558 S = Sidewall height of 12 inches or less

559 _____
560 (A) The factor of 1.43 incorporates a thirty percent (30%) reduction of the
561 bottom area.

562 _____
563 (B) The maximum credit for sidewall height shall not exceed twelve (12)
564 inches even if the actual sidewall height exceeds twelve (12) inches.

565 _____
566 (C) The sidewall height is the height of the slotted sidewall of the chamber or
567 depth below the flow line of the inlet pipe, whichever is less.

568 _____
569 (iii) For ~~standard~~ bed systems, the total infiltration area shall be calculated based
570 on the following formula:

571 A = LW

572 _____
573 A = Total infiltration area

574 _____
575 L = Total length of bed

576 _____
577 W = Width of the bed.

578 _____
579 (A) The sidewall credit shall not be used in calculating the total infiltration area
580 for a bed system.

581 _____
582 (iv) For chamber bed systems, the total infiltration area shall be calculated based
583 on the following formula:

584 A = L(E x R)

585 _____
586 A = Total infiltration area

587 _____
588 L = Total length of bed

589 _____
590 E = Effective bottom width of the chamber (Multiply width of the chamber by
591 factor of 1.43 to get effective bottom width)

592 _____
593 R = Number of chamber rows (Multiply effective bottom width of chamber by
594 number of chamber rows to get effective bottom width of bed.)

595 _____
596 (A) The factor of 1.43 incorporates a thirty percent (30%) reduction of the
597 bottom area.

598 _____
599 _____
600 ~~(formerly 5(d))(c) Excessively permeable soils. Coarse sand or soils having a~~
601 ~~percolation rate of less than one (1) minute per inch (mpi) or less are unsuitable for subsurface~~
602 ~~effluent-sewage disposal. These soils may be used if a six-inch a one (1) foot layer of soil-fine~~
603 ~~sand or loamy sand having a percolation rate of five minutes per inch or greater is placed between~~

604 ~~the leach system stone and the existing soil below the constructed soil absorption system.~~ The
605 soil absorption system shall be sized based on the percolation rate of the fill material.
606

607 **Section 9. ~~(formerly Dosing Systems Following Septic Tanks)~~ Building Sewer Pipes.**

608 ~~(formerly 6(a))—Building drain pipe. All building drain pipe shall comply with the~~
609 ~~standards published in the Uniform Plumbing Code 1982 or other locally approved, nationally~~
610 ~~recognized plumbing code.~~

611
612 ~~(formerly 6(b))—Building sewer pipe. All building sewers shall be installed in accordance~~
613 ~~with the Uniform Plumbing Code 1982 or other locally approved, nationally recognized~~
614 ~~plumbing code 2012 International Plumbing Code (IPC). In the absence of ~~an a locally~~ approved~~
615 ~~plumbing code, and in addition to the IPC, the building sewer shall comply with the following:~~
616

617
618 ~~(formerly 6(b)(i)) (a) (Material) Suitable building sewer pipe materials are Ppolyvinyl C~~
619 ~~chloride (PVC) or Acrylonitrile-Butadiene-Styrene (ABS) east or ductile iron, portland cement,~~
620 ~~or vitrified clay pipe shall be used for sewer pipes. The septic tank inlet and outlet pipes shall be~~
621 ~~east or ductile iron or schedule 40 PVC or ABS pipe and shall extend past the septic tank~~
622 ~~excavation to solid ground span the excavations for the septic tank and/or dosing chamber.~~
623 American Society for Testing and Materials (ASTM) D-3034 Standard Dimension Ratio (SDR)
624 35 plastic pipe may be used if the void at the tank's side is filled with material that is granular,
625 clean and compacted.
626

627 ~~(formerly 6(b)(ii)) (b) Size. Building sewer pipes shall not be smaller than four inches in~~
628 ~~diameter. They shall be sized to handle the peak hourly flow from the building.~~
629 Building sewer pipes shall be sized to handle the peak hourly flow from the building and shall
630 not be smaller than four (4) inches in diameter. When two different sizes or types of sewer pipes
631 are to be connected, a proper type of fitting or conversion adapter shall be used.
632

633 (c) Sewer pipe shall not decrease in size flowing downstream.

634
635 ~~(formerly 6(b)(iii))(d) Slope. Building sewer pipes should shall be laid at a ~~minimum~~~~
636 ~~standard slope of 1/4 inch per foot, but and shall not be flatter than 1/8 inch per foot.~~
637

638 ~~(formerly 6(b)(iv)) Alignment. Building sewer pipes should be laid in a straight~~
639 ~~line. Any single change or cumulative change of alignment of 22 ½ degrees or greater shall be~~
640 ~~served by a cleanout.~~

641
642 ~~(formerly 6(b)(v))(e) Cleanouts. Cleanouts shall be provided at branch connections,~~
643 ~~every change in alignment, and at least every 100 feet in straight runs ~~maximum.~~~~
644

645 ~~(formerly 6(b)(vi))(f) Backfilling. All sewer piping shall be laid on a firm bed~~
646 ~~throughout its entire length. It shall be protected from damage due to rocks, hard lumps of soil,~~
647 ~~debris and the like.~~
648

649 ~~(formerly 6(b)(vi))(g) Special care shall be ~~utilized~~ used to prevent lateral movement or~~
650 ~~ovalation deformation during backfill. The backfill material shall be compacted to a density at~~
651 ~~least equivalent to the trench walls. Backfill over the pipe shall be of sufficient depth to protect~~
652 ~~the pipe from expected traffic loads and the wastewater from freezing.~~
653

654 **Section 10. ~~Subsurface Treatment and Disposal Systems~~ Septic Tanks and Other**
655 **Treatment Tanks.**

656 ~~(formerly 8(a))~~(a) Septic tanks:-

657 ~~(formerly 8(a)(i))~~ (i) ~~Material. The~~ Septic tanks shall be fabricated or
658 constructed of ~~durable concrete, fiberglass, thermoplastic or an approved material not subject~~
659 ~~to excessive corrosion or decay and structurally capable of supporting the loads to which it~~
660 ~~will be subjected.~~ ~~The~~ Tanks shall be water tight and fabricated to constitute an individual
661 structure, and shall be designed and constructed to withstand anticipated loads. As part of the
662 application review process, Department of Environmental Quality, Water Quality Division
663 (DEQ/WQD) or the delegated small wastewater program shall review the design of
664 prefabricated septic tanks for compliance with applicable construction standards.

665 ~~(formerly 8(a)(v))~~ (ii) ~~Installation.~~ The septic tank shall be placed on a level
666 grade and a firm bedding to prevent settling. Where rock or other undesirable protruding
667 obstructions are encountered, the opening for the septic tank shall be over excavated, as needed,
668 and backfilled with sand, crushed stone, or gravel to the proper grade.

669 (A) Septic tanks shall not be buried deeper than the tank manufacturer's
670 maximum designed depth for the tank. The minimum depth of soil cover over the top of the tank
671 is six (6) inches.

672 (B) Backfill around and over the septic tank shall be placed in such a manner
673 as to prevent undue strain or damage to the tank or connected pipes.

674 (C) Septic tanks shall not be placed in areas subject to vehicular traffic unless
675 engineered for the anticipated load.

676 ~~(formerly 8(a)(ii))~~(iii) Size

677 ~~(formerly 8(a)(ii)(A))~~(A) ~~Residential units serving no more than 4 families. The~~
678 minimum liquid volume of a septic tanks shall be 1000 gallons for residences ~~through four~~
679 ~~bedroom capacity up to a four (4) bedroom capacity.~~ Additional capacity of 250 per bedroom
680 shall be provided for each bedroom over four (4).

681 ~~(formerly 8(a)(ii)(B))~~(B) ~~Commercial/industrial units.~~ Septic tanks for high strength
682 wastewater or non-residential units shall have a minimum effective liquid capacity sufficient to
683 provide at least ~~36~~ 48 hour retention at peak flow or 1,000 gallons, whichever is greater.

684 ~~(formerly 8(a)(iii))~~(iv) Configuration

685 ~~(formerly 8(a)(iii)(A))~~(A) ~~The Single compartment~~ septic tanks shall have a length
686 to width ratio of no less than two (2) to one (1), or be so partitioned ~~as to provide protection~~
687 ~~protect~~ against short circuiting of flow. ~~The inlet pipe shall be at least three inches higher than the~~
688 ~~outlet pipe.~~

689 ~~(formerly 8(a)(iii)(B))~~(B) ~~If the septic tank is partitioned,~~ For septic tanks with two
690 (2) compartments or more the volume of the first compartment must be at least 50 percent of the
691 total required volume, the inlet compartment shall not be less than one-half (1/2) of the total
692 capacity of the tank.

705
706 ~~(formerly 8(a)(iii)(A)(C))~~ The water depth shall be no less than
707 ~~four feet nor greater than six feet.~~ The liquid depth shall not be less than three (3) feet nor greater
708 than six (6) feet.

709
710 ~~(formerly 8(a)(iii)(C))~~ The outlet elevation shall be designed to
711 provide a distance of 20 percent of the liquid depth between the top of the liquid and the bottom
712 of the septic tank cover for scum storage.

713
714 ~~(formerly 8(a)(iii)(B)(D))~~ The partition shall allow venting of the
715 ~~tank.~~ The tank partition shall allow the venting of gases between compartments and out through
716 the vent stack on the plumbing system of the house. Gases generated during liquefaction of the
717 solids are normally vented through the building's plumbing stack vent.

718
719 ~~(formerly 8(a)(iii)(A)(E))~~ The septic tank inlet and outlet on all
720 tanks or tank compartments shall be provided with a open-ended sanitary tees or baffles. ~~The~~
721 ~~outlet shall be provided with a tee or baffle that extends into the middle third of the water depth to~~
722 ~~prevent floating or settled solids from carrying over into the disposal field or bed.~~ The inlet shall
723 be provided with tee or baffle made of approved materials constructed to distribute flow and
724 retain scum in the tank or compartments.

725
726 (I) The tees or baffles shall extend above the liquid
727 level a minimum distance of ~~six (6)~~ five (5) inches.

728
729 (II) The inlet tees or baffles shall extend below the
730 liquid level at least eight (8) inches but no more than a distance equal to thirty to forty 40%
731 percent (~~30-40%~~) of the liquid depth level. The outlet tees or baffles shall extend below the liquid
732 level at least ten (10) inches but no more than 45% of the liquid level.

733
734 (III) A minimum of ~~three (3)~~ one (1) inches of clear
735 space shall be provided over the top of the baffles or tees for venting.

736
737 ~~(formerly 8(a)(iii)(A)(IV))~~ (IV) The inlet pipe shall be at
738 least ~~three two (2)~~ inches higher than the outlet pipe. ~~(formerly 8(a)(iii)(C))~~ The outlet elevation
739 shall be designed to provide a minimum distance of nine (9) inches or twenty (20) percent of the
740 liquid depth, whichever is greater, between the top of the liquid and the bottom of the septic tank
741 cover for scum storage and the venting of gases.

742
743 (v) If additional septic tank capacity over 1,000 gallons is needed, it may be
744 obtained by joining tanks in series provided the following requirements are met:

745
746 (A) The inlet of each successive tank shall be at least two (2) inches lower
747 than the outlet of the preceding tank, and shall have no tee or baffle except for the inlet to the
748 first tank and the outlet for the last tank.

749
750 (B) The first tank or the first compartment of the first tank shall be equal to
751 fifty percent (50%) or larger of the total septic tank system volume.

752
753 ~~(formerly 8(a)(iv))(vi)~~ Access. A manway An-access riser opening shall be
754 provided to each compartment of the septic tank for inspection and cleaning. ~~A cleanout having a~~

755 ~~minimum diameter of six inches shall be provided in each tank compartment and shall extend to~~
756 ~~the ground surface and be capped.~~

757
758 ~~(formerly 8(a)(iv))~~ (A) The ~~manway-access~~ opening(s) in the cover/lid of
759 the tank shall have a minimum ~~opening diameter of twenty-(20) inches in the least dimension.~~
760 Both inlet and outlet devices shall be accessible.

761
762 (B) The riser from the access opening shall terminate at a maximum of six
763 (6) inches below the ground surface. Riser covers terminating above grade shall have an
764 approved locking device.

765
766 (vii) Land application of domestic septage in remote areas that meet the conditions
767 found in Appendix B will be permitted as a permit by rule. Delegated small wastewater programs
768 may issue individual permits.

769
770 (viii) An effluent filter with an opening of 1/8-inch or smaller shall be provided on
771 the outlet of a septic tank or other tank that precedes a small diameter pressure distribution
772 system.

773
774 ~~(formerly 8(b))—Aerobic units.~~

775
776 ~~(formerly 8(b)(i)) Residential units serving no more than four dwelling units.~~
777 ~~Aerobic treatment units can be used as a pretreatment device for a single residential unit serving~~
778 ~~no more than four families provided the unit carries the seal of testing and approval from the~~
779 ~~National Sanitation Foundation (NSF) for the NSF Standard No. 40—1978. The unit shall be~~
780 ~~sized based on the flow quantities stated in Section 3. No reduction in the sizing of soil absorption~~
781 ~~systems or the final treatment systems shall be permitted if an aerobic unit is used instead of a~~
782 ~~septic tank.~~

783
784 ~~(formerly 8(b)(ii)) Commercial and residential units serving more than four families.~~
785 ~~Aerobic units treating wastewater generated from other than a single residential unit serving four~~
786 ~~families or less shall meet the design requirements of Part B or Part C of Chapter XI~~

787
788 ~~(formerly 9(a))~~ (b) Pumping systems for flow up to 2000 gallons per day. Dosing Tanks

789
790 ~~formerly 9(a)(i)) (i) Pump tank—Where only one pump is provided, the pump~~
791 ~~tank shall have the minimum volume as required in Table 4 below. The~~ Dosing tanks
792 ~~shall comply with the~~ meet the same material and installation requirements for as ~~septic~~
793 ~~tanks. The pump tank shall be vented. The vent shall have a downward turn that~~
794 ~~terminates at least 12 inches above ground and be provided with a screen. The pump tank~~
795 ~~shall have an access manhole provided with an opening at least 20 inches in least~~
796 ~~dimension. Dosing tanks shall have a 20-inch diameter access riser opening and it shall~~
797 have a riser from the access opening ~~be brought to the ground surface.~~

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Table 4

Pump Tank
Volume (gallons) Required Between

| AVERAGE FLOWS (gallons per day) | “OFF” & “ON” SWITCH | “ON” & “ALARM” SWITCH | “ALARM” SWITCH & TANK INLET | RECOMMENDED PUMP CAPACITY (gpm) |
|------------------------------------|---------------------|-----------------------|-----------------------------|---------------------------------|
| 0-499 | 100 | 50 | 200 | 10 |
| 500-999 | 200 | 100 | 400 | 20 |
| 1000-1499 | 300 | 100 | 600 | 30 |
| 1500-2000 | 400 | 100 | 800 | 40 |

805
806
807
808

Table 6. Dosing Tank Volume (gallons)

| Average Design Flows (gpd) | 0-499 | 500-999 | 1000-1499 | 1500-2000 |
|-------------------------------------|-------|---------|-----------|-----------|
| Between Pump “off” and Tank Inlet | 350 | 700 | 1000 | 1300 |
| Between Tank Inlet and Alarm Switch | 200 | 400 | 600 | 800 |
| Between Alarm switch and Pump “on” | 50 | 100 | 100 | 100 |
| Between Pump “on” and Pump “off” | 100 | 200 | 300 | 400 |
| Recommended Pump Capacity (gpm) | 10 | 20 | 30 | 40 |

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821

~~(formerly 9(a)(ii) — Pumps.~~

~~(formerly 9(a)(ii)(A) — Sizing. The pump shall have a flow rate of at least ten gallons per minute when installed. The pressure loss (feet of head) of the system can be calculated by adding: the elevation difference between the discharge outlet at the soil absorption system and the low water level in the pump tank; and the friction losses incurred in the pressure transfer pipe and distribution piping. Table 5 may be used to estimate the head loss of the pipe when pumping ten gallons per minute and using plastic pipe.~~

Table 5

| Diameter (inches) | Head Loss per 100 feet of pipe (in feet) |
|-------------------|--|
| 1 | 12 |
| 1¼ | 4 |
| 1½ | 2 |

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824
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830
831
832

~~(B) — Installation/removal. The pump shall be installed in the tank so that it can be removed without entering the tank. This can be accomplished by (1) looping the pipe up near the access manhole with a pipe union provided at the top of the loop, (2) using a quick disconnect sliding coupler, or (3) using a pitless adapter. Chains, cable, or piping can be used to lift the pump out of the tank if designed for this loading. Setting the pump on an 8-inch block minimizes the transfer of any solids that may enter the pump tank.~~

~~(iii) — Pressure transfer pipe. The pressure transfer piping between the tank and the leach system shall be designed to drain after each pump cycle to prevent freezing. This~~

833 can be accomplished by either eliminating the check valve at the pump or by providing a
834 weep hole in the pipe in the tank. If the pipe is long, the tank shall be enlarged by the
835 volume of the pipe to accommodate the volume of liquid drained from the pipe.

836
837 (b) Syphons. Where automatic syphons are used, they shall be designed to empty the
838 syphon tank in less than 20 minutes. The syphon tank shall be sized in accordance with Section
839 9(a)(i) above.

840
841 (c) For all systems exceeding 2000 gallons per day. The pumping system shall
842 comply with the standards of Part B of Chapter XI.

843
844 (formerly 9(a)(ii)(C)) (ii) Electrical controls. The electrical control system for the
845 wastewater pump shall consist of a “pump off” switch, a “pump on” switch, and a “high water
846 alarm” switch which shall be located to provide the necessary volumes as stated in Table 4.
847 High water alarms shall be provided for all tanks that use pumps or syphons. The alarm device
848 shall be an audible alarm or an indoor illuminated alarm or both. All electrical controls (pump
849 electrical cord, switches, etc.) shall comply with the National Electrical Code—1981, Class 1,
850 Group D, Division 1 locations. All openings around the cables or cords entering the tank shall
851 be sealed.

852
853 (iii) The minimum effluent level shall achieve complete submergence of the pump.

854
855 (iv) Dosed systems using a siphon shall have a dose counter installed to check for
856 continued function of the siphon.

857
858 (formerly Section 12)-(c) Holding tanks

859
860 (i) Holding tanks shall meet the same material requirements as septic tanks.
861 Holding tanks shall have a twenty (20)-inch minimum diameter access riser opening. The A riser
862 shall be brought to ground surface from the access opening.

863
864 (formerly 12(a)) (ii) Uses. Holding tanks shall not be used for residential
865 systems when other alternative systems are available, except on a temporary, seasonal or
866 intermittent basis, or when used to correct a failed ~~subsurface disposal~~ soil absorption system
867 when other alternatives are unavailable. ~~Use of holding tanks for new construction is~~
868 ~~prohibited.~~

869
870 (formerly 12(b)) ~~Acceptance.~~ A letter of verification from the local
871 receiving agency, denoting acceptance of the wastewater generated shall be submitted with
872 the plans.

873
874 (formerly 12(e)) (iii) ~~Location.~~ The location and construction of
875 holding tanks shall meet the requirements for septic tanks in Sections 4(a)(i) and Section
876 8(a)(i) respectively. Holding tanks must be located in an area readily accessible to the
877 pump truck and where the tank itself will not float due to a high groundwater. If seasonal
878 high groundwater may be present, the tank shall be properly anchored.

879
880 (formerly 12(a)) (iv) ~~Where holding tanks are allowed, they shall be sized on the basis~~
881 ~~of seven days storage at the flow rate determined from Table 1. The minimum liquid volume shall~~
882 ~~be the greater of 1,000 gallons or seven (7) days storage based upon flow rate determined from~~
883 Section 5.

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~~(formerly 12(d))~~ ~~Vent. Each holding tank shall be provided with a two-inch minimum diameter vent ending in a return elbow above final grade. The vent shall terminate at least 30 feet from any door, window, or fresh air inlet. The vent should be screened.~~

~~(formerly 12(e))~~ ~~(v) Alarm.~~ All holding tanks shall be equipped with a high water level alarm. The device shall be an audible alarm or an indoor illuminated alarm or both. The ~~alarm level shall be placed~~ device shall be installed so that the alarm is triggered when the water level reaches at 3/4 of the ~~depth of the~~ tank capacity.

~~(formerly 12(f))~~ ~~Pumpout. A six inch pump out pipe which extends to the surface shall be provided. It shall be capped at all times.~~

(vi) A design package for holding tanks is provided online at the Division's website to assist the applicant in submitting a completed application for coverage under the general permit for small wastewater systems. The worksheet and calculations were prepared by a registered professional engineer employed by the Wyoming Department of Environmental Quality, Water Quality Division. The general design requirements stated in this section are incorporated into the worksheets such that by properly completing the forms and installing the components, the system will comply with these requirements.

~~(formerly 8(e)(d)) Grease Interceptors~~ ~~grease, oil, silt and sand.~~

~~(formerly 8(e)(i)) (i) When required. Liquid wastes containing grease, oil, or silt and sand~~ A commercial or institutional food preparation facility with a waste stream containing fat, oil, and grease (FOG) in excess of 25 mg/L shall provide install an exterior grease interceptor or a device approved by the delegated health department or county before the septic tank. Waste streams from residential living units are exempt from this requirement. Facilities that typically have waste streams high in FOG are, but not limited to, restaurants, cafeterias, slaughterhouses, and institutional kitchens.

~~(formerly 8(e)(ii)) (ii) Material.~~ The interceptor shall meet the material requirements of Section 8(a)(i). ~~Waste streams high in FOG shall be plumbed separately and directly to a grease interceptor prior to the waste treatment process.~~

(iii) Waste streams from sanitary facilities such as bathrooms, toilets, urinals, or other similar fixtures shall not be discharged into the grease interceptor. These sources must be connected at least four to six (4-6) feet downstream of the grease interceptor's discharge. The design shall prevent any backflow from the sanitary sources into the grease interceptor.

(iv) Only one source facility per grease interceptor shall be allowed.

~~(formerly 8(e)(v)) Access.~~ The access shall meet the requirements of Section 8(a)(iv).

~~(formerly 8(e)(vi)) (v) Location.~~ Grease interceptors shall be located so that they are easily accessible for inspection, cleaning, and removal of the collected wastes. Interceptors shall be placed as close as practical to the fixture it serves. The wastewater from fixtures not producing grease, oil, or sand and silt shall bypass the interceptor. The interceptor shall not be closer than fifteen (15) feet from the last discharging fixture and no further away than thirty-five (35) feet.

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(formerly 8(e)(iv)) (vi) ~~Configuration.~~ Grease interceptors shall have a minimum at least of two (2) compartments with the first compartment having at least 50 percent of the total required volume a 20-inch minimum diameter clean out riser access opening for each compartment for cleanout. ~~Each compartment shall be vented. Each clean out riser access opening shall have a riser be~~ brought to the surface and have a sealed lid that is rated for any anticipated load. There shall be a means provided to sample the effluent.

(vii) There shall be no internal cleanout tees or bypasses.

(viii) The inlet and outlet of the grease interceptor shall be vented. The vent pipe shall be at least two (2) inches in diameter. The inlet and outlet vents shall not be interconnected.

(ix) The outlet pipe invert shall be no more than two (2) inches lower than the inlet invert.

(x) The dividing wall between compartments shall be the same height as the other walls and the cover must should contact the top of the dividing wall. If the partition/dividing wall does not contact the cover, the outlet tee or baffle shall extend below the liquid level, 40-50% of the total liquid depth.

(xi) The effluent from each compartment shall be drawn from the bottom of a riser pipe that terminates at least eighteen (18) inches below the inlet pipe invert of that same compartment.

(xii) Grease interceptors shall be accessible during normal business hours without interrupting normal business operations.

(xiii) Grease interceptors shall be installed in accordance with the manufacturer's instructions and applicable requirements of this section. A copy of the manufacturer's instructions shall be submitted with every permit to construct application submitted to DEQ/WQD.

(formerly 8(e)(iii)) (xiv) Grease interceptors shall be sized using one of the according to the following formulas:

~~Commercial kitchens (grease, garbage)~~

| | | | | | | | | |
|-------------------------------|--------------|------------------|--------------|------------------|--------------|-------------------|---|------------------------------------|
| Number of meals per peak hour | X | Waste Flow rate* | X | Retention time** | X | Storage factor*** | = | Interceptor size (liquid capacity) |
|-------------------------------|--------------|------------------|--------------|------------------|--------------|-------------------|---|------------------------------------|

~~Car wash (sand, silt, oil)~~

| | | | | | | | | |
|--|--------------|----|--------------|----------------|--------------|----------------|---|-------------------------------------|
| Total washer equipment flow rate (GPM) | X | 60 | X | Retention time | X | Storage factor | = | Intereceptor size (liquid capacity) |
|--|--------------|----|--------------|----------------|--------------|----------------|---|-------------------------------------|

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Laundrie
s (grease,
lint, silt)

| | | | | | | | | |
|---|----------|------------------------|----------|-----------------------|----------|-----------------------|----------|---|
| <u>Number of 2-cycles machines X per hour</u> | <u>X</u> | <u>Waste flow rate</u> | <u>X</u> | <u>Retention time</u> | <u>X</u> | <u>Storage factor</u> | <u>=</u> | <u>Interceptor size (liquid capacity)</u> |
|---|----------|------------------------|----------|-----------------------|----------|-----------------------|----------|---|

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*Waste flow rate—see Table 1.

** Retention Times

| | |
|-------------------------------------|------------------|
| <u>Commercial kitchen waste:</u> | |
| <u>Dishwasher and/or disposal</u> | <u>2.5 hours</u> |
| <u>Single service kitchen:</u> | |
| <u>Single serving with disposal</u> | <u>1.5 hours</u> |
| <u>Car washers</u> | <u>2.0 hours</u> |
| <u>Laundries</u> | <u>2.0 hours</u> |

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***Storage Factors

| | |
|--|---|
| <u>Fully equipped commercial kitchen</u> | <u>8 hr. operation: 1</u> <u>16 hr. operation: 2</u> <u>24 hr. operation: 3</u> |
| <u>Single service kitchen</u> | <u>1.5</u> |
| <u>Carwashers</u> | <u>self-serve: 1.5</u> <u>employee operated: 2</u> |
| <u>Laundries</u> | <u>1.5 (allows for rock filter)</u> |

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Commercial Kitchens (grease, garbage)

| | | | | | | | | |
|--------------------------------------|----------|-------------------------|----------|-------------------------|----------|--------------------------|----------|---|
| <u>Number of meals per peak hour</u> | <u>X</u> | <u>Waste Flow rate*</u> | <u>X</u> | <u>Retention time**</u> | <u>X</u> | <u>Storage factor***</u> | <u>=</u> | <u>Interceptor size (liquid capacity)</u> |
|--------------------------------------|----------|-------------------------|----------|-------------------------|----------|--------------------------|----------|---|

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1003

*Waste flow rate – see Table 2.

**Retention times

| | |
|-------------------------------------|------------------|
| <u>Kitchen waste:</u> | |
| <u>Dishwasher and/or disposal</u> | <u>2.5 hours</u> |
| <u>Single service kitchen:</u> | |
| <u>Single serving with disposal</u> | <u>1.5 hours</u> |

1004
1005
1006

***Storage factors

| | |
|--|---|
| <u>Fully equipped commercial kitchen</u> | <u>8 hr. operation: 1</u> <u>16 hr. operation: 2</u> <u>24 hr. operation: 3</u> |
|--|---|

| | |
|--------------------------------|------------|
| <u>Single service kitchen:</u> | <u>1.5</u> |
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(A) The minimum volume shall not be less than 750 gallons

(e) Other Interceptors

(i) Interceptors are required for oil, grease, sand and other substances harmful or hazardous to the building drainage system, or the small wastewater treatment system.

(A) Laundries

(I) Commercial laundries, laundromats, and dry-cleaners shall be equipped with an interceptor in order to reduce the quantity of lint and silt that enter the collection system.

(II) The system must be of adequate size and design to allow for cool-down of wastewater so that separation can be more readily achieved.

(III) The interceptor must be installed with a wire basket or similar device, removable for cleaning, that prevents passage into the drainage system of solids ½ inch (12.7 mm) or larger in size, string, rags, buttons, or other materials that are detrimental to the waste treatment system.

(IV) Sizing must be in accordance with the following formula:

Laundries (grease, lint, silt)

| | | | | | | | | |
|--------------------------------|----------|------------------------|----------|------------------------|----------|-------------------------|----------|--------------------|
| <u>Total gallons per cycle</u> | <u>X</u> | <u>Cycles per hour</u> | <u>X</u> | <u>Retention time*</u> | <u>X</u> | <u>Storage factor**</u> | <u>≡</u> | <u>Interceptor</u> |
|--------------------------------|----------|------------------------|----------|------------------------|----------|-------------------------|----------|--------------------|

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1036

*Retention times

| | |
|------------------------------------|------------------|
| <u>Institutional laundries</u> | <u>2.5 hours</u> |
| <u>Standard commercial laundry</u> | <u>2.0 hours</u> |
| <u>Light commercial laundry</u> | <u>1.5 hours</u> |

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1038
1039

**Storage factors

| | |
|--------------------------------------|------------|
| <u>8 hours of operation</u> | <u>1.0</u> |
| <u>12 or more hours of operation</u> | <u>1.5</u> |

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(B) Car Washes

(I) Where automobiles are washed (including detail shops utilizing hand-wash practices), separators shall have a minimum capacity of 1000 gallons for the first bay, with an additional 500 gallons of capacity for every other bay.

(II) Additionally, wash racks must be constructed to eliminate or minimize the impact of run-off from rain/storm events. Minimum requirements are roofed

1049 structures with at least two walls and appropriate grading to prevent stormwater infiltration into
1050 the sanitary sewer.

1051
1052 (III) An effluent sampling point is required.

1053
1054 (f) Abandonment of Septic and Holding Tanks

1055
1056 The following is the procedure to abandon septic tanks and holding tanks when the system is
1057 upgraded, equipment replacement is necessary, or central sewer lines are made available.

1058
1059 (i) The abandoned tank should be pumped and the septage hauled to a licensed
1060 facility approved to receive the waste or the septage pumped into the newly constructed septic or
1061 holding tank. Discharging to a central sewer requires coordination with, and the approval of, the
1062 owner/operator of the sewer system.

1063
1064 (ii) Once the abandoned tank is empty, it should be removed and the excavation
1065 backfilled. As an alternative to removing the tank, the access covers can be removed; the bottom
1066 drilled or broken up sufficient to drain; and the tank filled with native soil, pit run, or sand.

1067
1068 (iii) If the abandoned tank is part of a Class V UIC facility, the abandonment must
1069 also be in compliance with Chapter ~~16~~ 27, Section ~~12~~ 19.

1070
1071 **Section 11. ~~Evapotranspiration Beds~~ Effluent Distribution Devices.**

1072
1073 ~~Formerly Section 11(a) — Sizing. The area of evapotranspiration beds shall be determined using~~
1074 ~~the following formula:~~

1075
1076
1077 ~~AREA = 586~~
$$\left[\frac{Q}{PET - P} \right]$$

1078
1079 where:

1080
1081 ~~Area = Area of the evapotranspiration bed at the ground surface in square feet~~

1082
1083 ~~Q = Average daily sewage flow, gallons per day, (0.6 times the flow determined from~~

1084 ~~Table 1) PET = Potential evapotranspiration rate in inches per year~~

1085
1086 ~~P = Annual precipitation rate in inches per year.~~

1087 ~~Formerly 11 (b) — Construction.~~

1088
1089 ~~Formerly 11 (b) (i) If an impervious barrier is necessary for the protection of~~
1090 ~~groundwater it shall be installed between the evapotranspiration bed and the native soil. It shall~~
1091 ~~be a polyvinyl chloride sheet with a minimum thickness of 20 mils or equivalent. A 3 inch~~
1092 ~~layer of sand shall be placed under and over the liner.~~

1093
1094 ~~Formerly 11 (b) (ii) — The bottom 12 inches of the bed shall be filled with clean~~
1095 ~~stone 1/2 — 2 1/2 inches in~~
1096

1097 ~~Formerly 11 (b) (iii) — Perforated pipe complying with Section 10(a)(v) shall be~~
1098 ~~placed in the stone.~~

1099
1100 ~~Formerly 11 (b) (iv) — Four inches of pea gravel (less than 1/4 inch in~~
1101 ~~diameter) or durable filter cloth shall be placed over the stone.~~

1102
1103 ~~Formerly 11 (b)(v) A 24 inch uniform sand layer in the size range of D50~~
1104 ~~(0.10mm) shall be placed on top of the pea gravel or filter cloth.~~

1105
1106 ~~Formerly 11 (b) (vi) — A six inch layer of sandy topsoil shall be placed on top of~~
1107 ~~the evapotranspiration bed.~~

1108
1109 ~~Formerly 11 (b) (vii) — The bed should be vegetated with small shrubs and/or grasses~~
1110 ~~such as fescue, brome, or alfalfa.~~

1111
1112 ~~Formerly 11 (b) (viii) — The evapotranspiration bed shall be placed at a depth~~
1113 ~~sufficient to prevent surcharging of the septic tank.~~

1114
1115 Distribution boxes and flow divider tees are suitable for level or nearly level ground and are
1116 installed before the soil absorption system with the goal of splitting flows equally between soil
1117 absorption system laterals. Drop boxes are suitable for sloping ground and are installed to
1118 achieve serial loading.

1119
1120 (a) Distribution Boxes

1121
1122 ~~(formerly 10(a)(vii)(i) Distribution box. If a The~~ distribution box is used, it shall
1123 be installed to provide uniform distribution of the wastewater on a level, stable base to ensure
1124 against tilting or settling and shall be placed so that it will not be subject to and to minimize
1125 movement from frost heave.

1126
1127 (ii) Boxes shall be watertight and constructed of concrete or other durable material.

1128
1129 (iii) Boxes shall be designed to accommodate the inlet pipe and the necessary
1130 distribution lines. The inlet piping to the distribution box shall be at least one (1) inch above the
1131 outlet pipes and all pipes shall have a watertight connection to the distribution box.

1132
1133 (iv) The box shall be protected against freezing and made accessible for
1134 observation and maintenance.

1135
1136 (v) Boxes shall have flow equalizers installed on each outflow.

1137
1138 (b) Flow divider tees may be used in place of distribution boxes.

1139
1140 (c) Drop boxes are suitable for sloping ground and are installed to achieve serial loading.
1141 The drop boxes shall meet the requirements in paragraphs (a)(i through v) of this section.

1142
1143 **Section 12. ~~Holding Tanks~~ Standard Soil Absorption Systems.**

1144
1145 ~~(formerly 10(a) (a) General~~ Design ~~Requirements;~~

1146

1147 (i) All soil absorption systems shall be designed in such a manner that the
1148 effluent is effectively filtered and retained below ground surface. The absorption surface accepts,
1149 treats, and disperses wastewater as it percolates through the soil.

1150
1151 ~~(formerly 10(a)(ii)(ii) Protection. Effort shall be made to protect the natural~~
1152 ~~absorptive properties of the soil. Soil absorption systems shall not be installed during adverse~~
1153 ~~weather or soil conditions. Rain, severely cold temperatures, or excessively moist soils are~~
1154 ~~considered adverse weather or soil conditions. All smeared or compacted surfaces shall be~~
1155 ~~restored to their original infiltrative conditions prior to placement of the stone. Soil absorption~~
1156 systems shall not be excavated when the soil is wet enough to smear or compact easily. Open soil
1157 absorption system excavations shall be protected from surface runoff to prevent the entrance of
1158 silt and debris. All smeared or compacted surfaces shall be raked to a depth of one (1) inch, and
1159 loose material removed before filter or filler material is placed in the soil absorption system
1160 excavation.

1161
1162 ~~(formerly 10(a)(iii) Runoff. Surface runoff shall be diverted around or away from all~~
1163 ~~soil absorption systems.~~

1164
1165 (iii) Soil absorption systems shall be designed to approximately follow the ground
1166 surface contours so that variation in excavation depths will be minimized. The trenches may be
1167 installed at different elevations, but the bottom of each individual trench shall be level throughout
1168 its length.

1169
1170 ~~(formerly 10(a)(ix) (iv) Earth cover. Shallow soil absorption system depths are~~
1171 ~~encouraged to promote treatment and evapotranspiration. A minimum of 12 inches of earth shall~~
1172 ~~be placed over the absorption system stone. The minimum soil cover depth over the soil~~
1173 ~~absorption system is one (1) foot. The maximum depth to the bottom absorption surface of a soil~~
1174 ~~absorption system is five (5) feet. The earth shall be permeable soil that will allow aeration of the~~
1175 ~~system and will support the growth of grass. The earth cover shall be graded to insure that water~~
1176 ~~will not pond on the surface. Finished grading shall prevent ponding and promote surface water~~
1177 runoff.

1178
1179 (v) Pipes, chambers or other products shall be bedded on firm, stable material.
1180 Heavy equipment shall not be driven in or over soil absorption systems during construction or
1181 backfilling.

1182
1183 (vi) Standard trenches refer to perforated pipe embedded in aggregate-filled
1184 trenches that shall conform to the following:

1185
1186 ~~(formerly 10(a)(v))(A) Gravity pipe. All plastic gravity absorption system~~
1187 The perforated pipes shall have a minimum diameter of four (4) inches and shall conform to ASTM
1188 standard D2729. Suitable pipe materials include: ASTM D-2729-11 PVC, ASTM D-3034-08
1189 PVC, Schedule 40 PVC ASTM d1784-11, and ASTM F810-07 PE. Piping in all horizontally
1190 constructed absorption systems shall be layed with the holes centered around the vertical axis at

1191 ~~the bottom of the pipe. All field tile pipe shall be spaced 1/4 inch apart. Piping in horizontally~~
1192 ~~constructed absorption systems shall have a maximum slope of three inches per 100 feet.~~

1193

1194 ~~(formerly 10(a)(vi)) Pressure pipe. All pressure distribution piping shall be~~
1195 ~~designed to withstand the anticipated pressures with a safety factor of two, provide uniform~~
1196 ~~application of the wastewater, and have non-clogging orifices.~~

1197

1198 ~~(formerly 10(a)(iv)) (B) — Stone. Soil absorption system stone.~~ The aggregate
1199 shall be crushed rock, gravel or other acceptable, durable and inert material that is free of
1200 finer, sized and has an effective diameter between 1/2-inch to 2 1/2 inches.

1201

1202 ~~(formerly 10(a)(viii)) (C) Stone cover. A suitable cover such as untreated~~
1203 ~~building paper, filter cloth, or straw shall be placed over the stone prior to backfilling the system.~~
1204 Prior to backfilling, the aggregate shall be covered throughout with a woven/non-woven
1205 geotextile material or a three (3) inch layer of straw.

1206

1207 ~~((formerly 10(a)(iv)) (D) At least two inches of stone shall be placed over the~~
1208 ~~distribution pipe, and at least six inches of stone shall be placed under and beside the distribution~~
1209 ~~piping. A minimum of 12 inches of stone shall be placed between a seepage pit wall and~~
1210 ~~structural liner. The stone shall be free from sand, silt, and clay. Aggregate shall extend the full~~
1211 width and length of the soil absorption system to a depth of at least twelve (12) inches with at
1212 least six (6) inches of drain gravel under the distribution pipe and at least two (2) inches over the
1213 distribution pipe.

1214

1215 (E) Maximum width of trench excavation is three (3) feet.

1216

1217 ~~(formerly 10(d)) (F) Special requirements for trench systems. A Minimum~~
1218 ~~separation spacing of trenches (wall to wall) of is three (3) feet or a horizontal distance equal to~~
1219 ~~1.25 times the vertical depth of the trenches, whichever is greater, of undisturbed soil shall be~~
1220 ~~maintained between adjacent trench sidewalls. Trench spacing shall be increased to nine (9) feet~~
1221 when the area between each trench is considered as reserve area. For clay loam soils that have
1222 percolation rates greater than 60 min/in., the nine (9) foot spacing shall also be required but it is
1223 not considered as reserve area.

1224

1225 ~~(formerly 10(f)) (vii) Special requirement for bed systems. The distribution~~
1226 ~~system piping shall be spaced no more than 10 feet apart. Standard beds shall conform to the~~
1227 same pipe and aggregate requirements for trenches as found in subparagraphs (vi)(A through D)
1228 of this section. Standard beds shall also conform to the following:

1229

1230 ~~(formerly 10(a)(x)) (A) Levelness. The soils shall have percolation rates~~
1231 less than 60 minutes per inch (5-60 mpi). The bottom of soil absorption systems and each
1232 segment of a sidehill system the bed shall must be level, therefore the site shall be relatively flat,
1233 sloping no more than one (1) foot from the highest to the lowest point in the installation area.

1234

1235 (B) Distribution laterals within a bed must be spaced on not greater than six
1236 (6) feet centers. Sidewalls shall not be more than three (3) feet from a distribution lateral.

1237
1238 (C) Beds must not be wider than twenty-five (25) feet if gravity distribution
1239 is used. Multiple beds must be spaced at one-half the bed width.

1240
1241 (D) Rubber tired vehicles must not be driven on the bottom surface of any
1242 bed excavation.

1243
1244 (viii) Chambered trenches, when used in lieu of perforated pipe and aggregate, shall
1245 be installed in conformance with the manufacturer recommendations. No cracked, weakened,
1246 modified, or otherwise damaged chamber units shall be used in any installation.

1247
1248 (A) All chambers shall be an open, arch-shaped structure of durable, non-
1249 degradable design, suitable for distribution of effluent without filter material.

1250
1251 (B) All chamber endplates shall be designed so that the bottom elevation of
1252 the inlet pipe is at least six (6) inches from the bottom of the chamber.

1253
1254 (C) Inlet and outlet effluent sewer pipes shall enter and exit the chamber
1255 endplates. Inspection ports shall be installed at all outlet effluent sewer pipes.

1256
1257 (D) All chambers shall have a splash plate under the inlet pipe or another
1258 design feature to avoid unnecessary channeling into the trench bottom.

1259
1260 (E) Maximum width of trench excavation is three (3) feet.

1261
1262 (F) Minimum spacing of trenches (wall to wall) is three (3) feet. Trench
1263 spacing shall be increased to nine (9) feet when the area between each trench is considered as
1264 reserve area. For clay loam soils that have percolation rates more than 60 min/in., the nine (9)
1265 foot spacing shall also be required but it is not considered as reserve area.

1266
1267 (ix) Chambered beds shall conform to the same requirements for chambered
1268 trenches as found in subparagraphs (viii)(A through D) of this section. Aggregate, as specified in
1269 subparagraph (vi)(B) of this section, or native soil shall be used to fill the space between the
1270 chambers.

1271
1272 ~~(formerly 10(e)(x) Special requirements for serial sidehill trench or bed systems.~~
1273 Serial Sidehill Trench:

1274
1275 ~~(formerly 10(e)(i)) (A) — Separation. — A minimum of ~~three~~ six (6) feet of~~
1276 undisturbed soil shall be maintained between adjacent trench or bed side walls.

1277

1278 ~~(formerly 10(e)(ii))(B)~~ Levelness. The bottom of each serial trench or bed
1279 system shall be level.

1280
1281 ~~(formerly 10(e)(iii))(C)~~ Overflow. The overflow pipe between serial soil
1282 absorption systems shall be set no higher than the mid-point of the upstream distribution pipe.
1283 The overflow pipe shall not be perforated.

1284
1285 ~~(formerly 10(b) — Special requirements for seepage pits. If a structural lining is needed to~~
1286 ~~support stone in a seepage pit, it shall be constructed of durable material not subject to excessive~~
1287 ~~corrosion or decay and structurally capable of supporting the loads to which it will be subjected.~~
1288 ~~The lining shall be perforated or otherwise designed to allow the passage of wastewater. Seepage~~
1289 ~~pits shall be separated by a minimum distance equal to 3 times their diameter.~~

1290
1291 (b) A design package for standard soil absorption systems is provided online at the
1292 Division’s website to assist the applicant in submitting a completed application for coverage
1293 under the general permit for small wastewater systems. The worksheet and calculations were
1294 prepared by a registered professional engineer employed by the Wyoming Department of
1295 Environmental Quality, Water Quality Division. The general design requirements stated in this
1296 section are incorporated into the worksheets such that by properly completing the forms and
1297 installing the components, the system will comply with these requirements.

1298
1299 **Section 13. ~~Privies~~ Pressure Distribution Systems.**

1300
1301 (a) General Design Requirements:

1302
1303 (i) The basic elements of a pressure distribution system include a dosing tank,
1304 filter, and a means to deliver specified doses to a small diameter pipe network within a soil
1305 absorption system. Pressure distribution is required for mound systems or for bed systems with a
1306 width greater than twenty-five (25) feet.

1307
1308 (ii) Pumps must be sized to match the distribution system curve or demand.
1309 Pumps shall be designed for sewage pumping applications and be accessible from the ground
1310 surface.

1311
1312 (iii) The control system for the pump and dosing tank shall, at a minimum, consist
1313 of a “pump off” switch, a “pump on” switch, a “high liquid alarm”.

1314
1315 (A) All electrical connections must be made outside of the chamber in either
1316 an approved weatherproof box or an explosion-proof junction box.

1317
1318 (B) The wiring from the junction box to the control box must pass through a
1319 sealing fitting to prevent corrosive gases from entering the control panel.

1320
1321 (C) All wires must be contained in solid conduit from the dosing chamber to
1322 the control box.

1323
1324 (iv) The pressure transport piping between the tank and the soil absorption system
1325 shall be designed to prevent freezing.

1326
1327 (A) The ends of lateral piping shall be constructed with long sweep elbows or
1328 an equivalent method to bring the end of the pipe to finished grade. The ends of the pipe shall be
1329 provided with threaded plugs, caps, or other devices to allow for access and flushing of the
1330 lateral.

1331
1332 (B) All joints in the manifold, lateral piping, and fittings shall be solvent-
1333 welded using the appropriate joint compound for the pipe material. Pressure transport piping
1334 may be solvent-welded or flexible gasket jointed.

1335
1336 (C) Where automatic siphons or other devices are used, they shall be
1337 designed to empty the dosing tank in less than ten (10) minutes.

1338
1339 (v) The pressure distribution system shall have a combination of at least three (3)
1340 vertical feet of filter sand and/or unsaturated native soil above the high groundwater level. The
1341 filter sand shall conform to ASTM C-33, with less than 2% passing the #200 sieve.

1342
1343 (b) A design package for pressure distribution systems is provided online at the
1344 Division's website to assist the applicant in submitting a completed application for coverage
1345 under the general permit for small wastewater systems. The worksheet and calculations were
1346 prepared by a registered professional engineer employed by the Wyoming Department of
1347 Environmental Quality, Water Quality Division. The general design requirements stated in this
1348 section are incorporated into the worksheets such that by properly completing the forms and
1349 installing the components, the system will comply with these requirements.

1350

1351 **Section 14. ~~Chemical Toilets~~ Sand Mound Systems.**

1352

1353 ~~(formerly 14(a) — General requirements. Chemical toilets shall only be used in the containment~~
1354 ~~of body wastes. These requirements apply only to the use of chemical toilets for permanent~~
1355 ~~structures.~~

1356

1357 ~~— (formerly 14(b) — Greywater. If indoor plumbing is installed, a separate greywater~~
1358 ~~disposal is required and shall meet the requirements of Section 3 through 12. The minimum~~
1359 ~~design flows for greywater shall be obtained from Table 1 with a reduction of 33 percent~~
1360 ~~allowed for the elimination of blackwater wastes.~~

1361

1362 ~~— (formerly 14(c) — Disposal. All chemical toilet wastes shall be disposed of at an~~
1363 ~~approved wastewater facility. A letter of verification from the receiving agency, denoting~~
1364 ~~acceptance of the wastewater generated shall be submitted with the plans. These wastes shall~~
1365 ~~not be discharged into a soil absorption system.~~

1366

1367 ~~— (formerly 14(d) — Construction. Chemical toilets shall be constructed and installed to~~
1368 ~~resist breakage or damage from routine usage. Outdoor chemical toilets shall be adequately~~
1369 ~~stabilized and secured to prevent overturning. Materials used shall be resistant to the sewage~~
1370 ~~wastes and the chemicals encountered. The holding compartment of the toilet shall be~~
1371 ~~constructed to prevent accessibility to the public and to disease transmitting vectors.~~

1372

1373 ~~— (formerly 14(e) — Additives. No chemical or biological additive shall be placed in the~~
1374 ~~toilet that may adversely affect the operation of a sewage treatment facility where the toilet~~
1375 ~~waste will ultimately be disposed or that may adversely impact the quality of the groundwater~~

1376 ~~as specified in Chapter VIII, "Quality Standards for Groundwater of Wyoming."~~

1377

1378 The sand mound consists of a sand fill, an aggregate bed and a soil cap.

1379

1380 (a) Selection Criteria:

1381

1382 The high groundwater level, bedrock or impervious clay layer is less than four (4) feet below the
1383 bottom of the soil absorption system excavation.

1384

1385 (b) Site Requirements:

1386

1387 (i) A minimum of one (1) foot of vertical separation of the native soil is required
1388 between the bottom of the sand fill and the top of the high groundwater level, any restrictive
1389 layer, or any highly permeable material.

1390

1391 (ii) The percolation rate of the native soil at the interface of the sand fill shall be
1392 greater than five (5) and less than sixty (60) minutes per inch (5-60 mpi). The percolation shall
1393 be measured in the top twelve (12) inches of native soil.

1394

1395 ~~(formerly 10(e)) (c) — Special requirements for mounded systems.~~ General Design
1396 Requirements:

1397

1398 ~~(formerly 10(c)(i)) Sizing~~ (i) Sand Layer

1399

1400 ~~(A) The infiltrative surface between the stone and the fill material shall be~~
1401 ~~sized based on the flow rate as determined by Section 3 and the allowable loading rate as~~
1402 ~~determined by Figure 7 of Section 7 for the percolation rate of the fill. The total infiltrative~~
1403 ~~surface is the sum of the sidewall and bottom areas of the stone-soil interface below the~~
1404 ~~distribution pipe.~~

1405

1406 ~~(B) The interface area between the fill soil and the native soil shall be sized~~
1407 ~~based on the infiltration rate of the native soil as determined by Figure 7 of Section 38 but shall~~
1408 ~~not be smaller than a system designed to the requirements of subsection (ii) below.~~

1409

1410 (A) Filter sand shall conform to ASTM C-33, with less than 2% passing the
1411 #200 sieve.

1412

1413 (B) The minimum depth of sand below the aggregate bed surface shall be
1414 one (1) foot.

1415

1416 (C) The sand mound shall have a combination of at least four (4) vertical
1417 feet of filter sand and unsaturated native soil above the high groundwater level.

1418

1419 (I) For sand mounds using pressure distribution systems, the depth
1420 to high groundwater shall be three (3) feet below the bottom of the absorption surface if the
1421 percolation rate of the soil is five (5) minutes per inch or greater (5-60 mpi).

1422
1423 (D) The top of the sand layer under the aggregate bed shall be level in all
1424 directions.

1425
1426 (E) The sand layer shall fill around the perimeter of and to the top of the
1427 aggregate bed.

1428
1429 ~~(formerly 10(c)(ii))(F) Grade. The finished grade shall extend at~~
1430 ~~least three feet horizontally beyond the stone and then be sloped to the parent soil at a grade no~~
1431 ~~steeper than four horizontal to one vertical. The slope of all sides shall be three (3) horizontal to~~
1432 ~~one (1) vertical or flatter.~~

1433
1434 ~~(formerly 10(c)(i)(B))(G) The interface infiltration area between the fill soil~~
1435 ~~and the native soil, which is the bottom of the sand fill, shall be sized calculated based on the~~
1436 ~~infiltration rate of the native soil as determined by Figure 7 of Section 38 by dividing the design~~
1437 ~~flowrates (gpd) from Table 1 or Table 2 by the loading rate (gpd/ft²) found in Table 5 but shall~~
1438 ~~not be smaller than a system designed to the requirements of subsection (ii) below.~~

1439
1440 (ii) Aggregate Bed

1441
1442 (A) The aggregate shall be crushed rock, gravel or other acceptable, durable
1443 and inert material that is free from fines, and has an effective diameter between one-half (1/2)
1444 inch and two and one half (2 ½) inch.

1445
1446 (B) The aggregate bed depth shall not be less than nine (9) inches with a
1447 minimum of six (6) inches of clean aggregate placed below the distribution pipe and two (2)
1448 inches above the distribution pipe. The aggregate shall be covered with an approved geotextile
1449 material after installation and testing of the pressure distribution system.

1450
1451 (C) The design shall be a long, narrow bed design with a maximum width of
1452 twenty-five (25) feet.

1453
1454 (D) The infiltration area, which is the bottom of the aggregate bed, shall be
1455 calculated by dividing the design flowrates (gpd) from Table 1 and Table 2 by the loading rate of
1456 0.8 gpd/ft².

1457
1458 (iii) Soil Cover

1459
1460 (A) The soil cap shall be constructed of a sandy loam, loamy sand, or silt
1461 loam. The depth of the soil cap shall be at least six (6) inches at the edges at twelve (12) inches
1462 at the center. The slope of all sides shall be three (3) horizontal to one (1) vertical or flatter.

1463
1464 ~~(formerly 10(c)(iii))(B) — Fill soil. The fill soil that is A layer of top soil at~~
1465 ~~least six (6) inches thick shall be placed between the native soil and the stone over the entire sand~~
1466 ~~mound area. shall have a minimum percolation rate of five minutes per inch. Topsoil shall be~~

1467 ~~placed over the mound to promote vegetative cover.~~ The sand mound should be planted with
1468 vegetation that does not require watering and will not establish deep roots. Native grasses are
1469 commonly used.

1470

1471 ~~(formerly 10(c)(iv)) — Preparation. All trees, roots, and other organic matter shall be~~
1472 ~~removed from the area to be occupied by the mound.~~

1473

1474 (d) A design package for sand mound systems is provided online at the Division's
1475 website to assist the applicant in submitting a completed application for coverage under the
1476 general permit for small wastewater systems. The worksheet and calculations were prepared by a
1477 registered professional engineer employed by the Wyoming Department of Environmental
1478 Quality, Water Quality Division. The general design requirements stated in this section are
1479 incorporated into the worksheets such that by properly completing the forms and installing the
1480 components, the system will comply with these requirements.

1481

1482 **Section 15. ~~Small Non-discharging Waste Stabilization Ponds~~ Small Wastewater**
1483 **Lagoons.**

1484

1485 (a) ~~General requirements.~~ Selection Criteria:

1486

1487 (i) ~~The use of this section for small nondischarging waste stabilization ponds~~
1488 ~~applies only to those systems defined as small wastewater systems. All other treatment systems~~
1489 ~~shall meet the requirements of Part B or Part C of Chapter XI as applicable.~~ Lagoons shall only
1490 be considered in areas of Wyoming where the annual evaporation exceeds the annual
1491 precipitation during the active use of the lagoon.

1492

1493 (ii) ~~Non discharging waste stabilization ponds Lagoons~~ shall only be constructed
1494 in soils allowed where when the percolation rate exceeds sixty (60) minutes per inch and the soil
1495 is at least 1 foot thick on both the sides and bottom of the pond extends vertically down at least
1496 two (2) feet from the bottom of the lagoon to the seasonal high groundwater table or bedrock
1497 formations. If the 60 minute per inch percolation rate cannot be obtained, a sufficient clay shall be
1498 incorporated into the top foot of soil until the 60 minute per inch percolation rate is reached. An
1499 impermeable artificial liner of 20 mils in thickness may be substituted.

1500

1501 (iii) A lagoon shall not be constructed within the 100 year ~~flood plain~~ floodplain.

1502

1503 (b) General Design Requirements:

1504

1505 ~~(formerly 15(b)) (i) Isolation. The isolation distances shall meet the requirements for~~
1506 ~~absorption systems as specified in Section 4(a)(i). Beyond the horizontal setback distances~~
1507 ~~requirements specified in Section 7(g) of this rule, the lagoon shall not be placed within one~~
1508 ~~hundred (100) feet of the owner's property line.~~

1509

1510 (ii) The use of a septic tank that meets the specifications in Section 9 of this rule
1511 shall be required before the small wastewater lagoon.

1512

1513 (iii) The lagoon shall be located and constructed so it will not receive surface runoff
1514 water.

1515 (iv) The slope of the lagoon site shall not exceed five percent (5%).

1516 (v) The lagoon site must be located in an area of maximum exposure to sun and
1517 wind.

1518
1519 (vi) The lagoon shall be designed for complete retention.

1520

1521 ~~(formerly 15(d)) Sizing.~~ (vii) The area of the lagoon shall be calculated based on
1522 the following formula.

1523

1524
$$A = \frac{584 \times Q}{(365 \times S) + (E - P)} \times 1.3$$

1525

1526 A = Area of the lagoon (in square feet) at the maximum operating depth of 5 feet feet
1527 ~~water level in square feet~~

1528

1529 Q = Average daily sewage flow, gallons per day. ~~(0.6 times the flow determined from~~
1530 ~~Table 1)~~ (Multiply values from Table 1 or 2 by 0.6 to get average daily flow.)

1531

1532 E = Average annual lake evaporation rate in inches per year. (Note: lake evaporation is
1533 less than pan evaporation; lake evaporation equals pan evaporation times a pan coefficient of 0.7)

1534

1535 P = Average annual precipitation rate in inches per year.

1536

1537 S = Soil permeability in inches per day "S" cannot be greater than 0.25 inches per day
1538 "S" shall equal zero for an artificial liner or for bedrock Seepage rate in decimal form, in inches
1539 per day.

1540

1541 ~~(formerly 15(e)) Construction requirements.~~

1542

1543 ~~(formerly 15(e)(i)(viii))~~ (viii) The slopes of the ~~inside~~ dikes shall not be steeper than
1544 three ~~(3)~~ horizontal to one (1) vertical ~~nor flatter than four horizontal to one vertical. The slopes~~
1545 ~~of the outside dikes shall not be steeper than three horizontal to one vertical and shall not allow~~
1546 ~~surface runoff to enter the pond. (formerly 15(e)(iv))~~ The minimum ~~top~~ width of the top of the
1547 dike shall be ~~eight~~ four (4) feet.

1548

1549 ~~(formerly 15(e)(iii))~~ (ix) All fill ~~material~~ shall consist of impervious material that is
1550 well compacted and free of rocks, frozen soil, or other large material.

1551

1552 ~~(x) (formerly 15(d)(ii))~~ (x) ~~A~~ The minimum ~~water level~~ operating depth of at least two
1553 ~~feet shall be two (2) feet maintained in the pond at all times, including start-up. (formerly~~
1554 ~~15(d)(iii))~~ ~~A minimum free board of two feet shall be provided between the lowest embankment~~
1555 ~~berm and the maximum water level. The maximum water level shall not be less than five feet. The~~
1556 ~~dikes shall provide a minimum freeboard of two (2) feet.~~

1557

1558 ~~(formerly 15(e)(ii))~~ (xi) ~~All organic material and debris shall be removed from the~~
1559 ~~pond site prior to construction. The floor of the lagoon shall be level and maintained free of all~~
1560 ~~vegetation.~~

1561

1562 (xii) The influent line into the lagoon must discharge near the center.

1563
1564 (xiii) A cleanout or manhole shall be provided in the influent line near the dike.

1565
1566 (xiv) The area around the small wastewater lagoon shall be fenced to preclude the
1567 entrance of livestock, pets, and humans. The fence shall be equipped with a locking gate. The
1568 gate shall have a sign indicating “NO TRESPASSING – WASTEWATER LAGOON”.

1569
1570 (c) A design package for a small wastewater lagoons is provided online at the Division’s
1571 website to assist the applicant in submitting a completed application for coverage under the
1572 general permit for small wastewater systems. The worksheet and calculations were prepared by a
1573 registered professional engineer employed by the Wyoming Department of Environmental
1574 Quality, Water Quality Division. The general design requirements stated in this section are
1575 incorporated into the worksheets such that by properly completing the forms and installing the
1576 components, the system will comply with these requirements.

1577
1578 ~~(formerly 15(c))—Groundwater protection and bedrock or impermeable soil separation.~~

1579
1580 ~~(formerly 15(c)(i))—For single family homes, the depth to seasonally high~~
1581 ~~groundwater shall be at least four feet from the bottom of pond.~~

1582
1583 ~~(formerly 15(c)(ii)) For all “small wastewater systems” other than single family~~
1584 ~~homes, a minimum of three feet of unsaturated soil shall be maintained between the bottom of the~~
1585 ~~pond and the estimated groundwater mound imposed on the seasonally high groundwater table.~~
1586 ~~The height of the groundwater mound can be estimated from Figures 1-6, Section 5 in~~
1587 ~~conjunction with the average daily sewage flow.~~

1588
1589 **Section 16. ~~Commercial/Industrial Wastes~~ Privies or Outhouses.**

1590
1591 Privies ~~and~~ or outhouses that meet the requirements of this section are permitted by rule. A permit
1592 by rule requires the owner to submit the information contained in paragraph (g) of this section to
1593 the Wyoming Department of Environmental Quality, Water Quality Division prior to constructing
1594 or installing the facility. By submission of the required information, the owner acknowledges and
1595 certifies they will comply with the requirements contained in this section.

1596
1597 Pre-fabricated privies or outhouses shall be sealed, water-tight vaults and shall meet the following
1598 conditions.

1599
1600 ~~(formerly 13(a))~~ General requirements.

1601
1602 ~~(formerly 13(a)(ii)) If indoor plumbing is installed, the grey water disposal method~~
1603 ~~shall meet the requirements of Section 3 through 12. The minimum design flow for grey water~~
1604 ~~shall be obtained from Table 1 with a reduction of 33 percent allowed for the elimination of black~~
1605 ~~wastes.~~

1606
1607 ~~(formerly 13(a)(iii)) The privy shall consist of a vault and an outhouse building.~~

1608
1609 ~~(formerly 13(b)(a))—Isolation.~~ The ~~isolation~~ horizontal setback distance requirements
1610 for ~~sealed~~ privies ~~and~~ or outhouses shall comply with Section 7(g) for septic tanks.

1611

1612 ~~(formerly 13(d)(ii))~~(b) The depth to seasonally high groundwater from the bottom of a
1613 water tight vault shall be sufficient to prevent floatation of the empty vault.

1614
1615 ~~(formerly 13(e))—Soil exploration.—Soil exploration to a minimum depth of 4 feet below~~
1616 ~~the bottom of the proposed vault shall be made to provide information on subsoil condition.~~

1617
1618 (c) The vault must have sufficient capacity for the dwelling served, and must have at
1619 least 27 cubic feet or 200 gallons of capacity.

1620
1621 ~~(formerly 13(a)(i))~~(d) ~~All privies shall be designed and constructed to prevent access~~
1622 ~~by flies and rodents. Privies and or outhouses must be easily maintained and insect tight; must~~
1623 ~~have a self-closing door; the privy or outhouse seat must include a cover; and all exterior~~
1624 ~~openings, including vent openings, shall be screened. The door must be self closing. The privy~~
1625 ~~seat must include a cover. All exterior openings, including vent openings, shall be screened.~~

1626
1627 ~~(formerly 13(d))—Groundwater and bedrock separation.~~

1628
1629 ~~(formerly 13(d)(i))—The depth to seasonally high groundwater and bedrock or~~
1630 ~~impermeable soil shall be at least four feet from the bottom of an unlined vault.~~

1631
1632 ~~(formerly 13(e))—Sizing.—Vaults shall have a minimum capacity of 500 gallons per riser~~
1633 ~~and shall be a minimum of 4.5 feet deep.~~

1634
1635 ~~(formerly 13(f))—Construction.~~

1636
1637 ~~(formerly 13(f)(i))The vault shall be constructed and installed to resist breakage and~~
1638 ~~damage imposed by frost heave, uplift pressures from a fluctuating water table, loads imposed by~~
1639 ~~the outhouse building and soils, and damage that may be caused by vandalism or rough cleaning~~
1640 ~~procedures. The vault shall be constructed~~
1641 ~~to prevent access by flies.~~

1642
1643 ~~(formerly 13(f)(ii))—Materials used for vault construction shall be resistant to alkali~~
1644 ~~attack, hydrogen sulfide gas, and other corrosive elements associated with decomposing waste.~~

1645
1646 ~~(formerly 13(f)(iii))—A clean-out manhole shall be installed and shall have a~~
1647 ~~minimum opening of 20 inches in the least dimension. The manhole shall be located outside of~~
1648 ~~the outhouse building and be equipped with a tightfitting secure cover.~~

1649
1650 ~~(formerly 13(f)(iv))~~(e) Privies and or outhouses must be adequately vented.
1651 ~~The vault shall be ventilated to a point outside and above the outhouse building. The outhouse~~
1652 ~~building shall have a set of vents installed near the floor on two opposite sides of the building and~~
1653 ~~a roof vent that has a rain cap. All vents shall be screened.~~

1654
1655 ~~(formerly 13(g))—Vault additives.—No chemical or biological additive shall be placed in the~~
1656 ~~vault that may adversely effect the operation of a sewage treatment facility where the vault waste~~
1657 ~~will ultimately be disposed or that may adversely impact the quality of the groundwater as~~
1658 ~~specified in Chapter VIII, “Quality Standards for Groundwater of Wyoming”.~~

1659
1660 (f) Privies and or outhouses shall not be constructed within the 100 year flood plain
1661 floodplain.

1662

1663 (g) A design package for privies is provided online at the Division's website to assist the
1664 applicant in submitting a completed application for coverage under the general permit for small
1665 wastewater systems. The worksheet and calculations were prepared by a registered professional
1666 engineer employed by the Wyoming Department of Environmental Quality, Water Quality
1667 Division. The general design requirements stated in this section are incorporated into the
1668 worksheets such that by properly completing the forms and installing the components, the system
1669 will comply with these requirements. Owner's name, address, phone number, legal description of
1670 privy or outhouse (address, latitude/longitude, or ¼ ¼ section), and the date construction or
1671 installation will begin.

1673 **Section 17. Greywater Systems.**

1674 It is the intent of this section to encourage and facilitate the productive and safe reuse of
1675 greywater from domestic wastewater. Greywater systems that meet the requirements of this
1676 section are permitted by rule. A permit by rule requires the owner to submit the information
1677 contained in paragraph (e) of this section to the Wyoming Department of Environmental Quality,
1678 Water Quality Division prior to constructing, modifying, or installing the system. By submission
1679 of the required information, the owner acknowledges and certifies they will comply with the
1680 requirements contained in this section.

1681 _____ (a) Applicability

1682 _____ (i) This section applies to any person who utilizes greywater for beneficial
1683 irrigation uses.

1684 _____ (ii) This section is not applicable if the intent is to provide blackwater treatment.

1685 _____ (iii) A city, county, or other local government agency may, after a public hearing
1686 and enactment of an ordinance or resolution, further restrict or prohibit the use of greywater
1687 systems.

1688 _____ (b) (a) Greywater Operation and Requirements

1689 _____ (i) Restrictions

1690 _____ (A) Spray irrigation of greywater is not permitted.

1691 _____ (B) The installation of a greywater system shall not reduce or alter the
1692 sizing requirements of the onsite wastewater system.

1693 _____ (C) Human, domestic pets, and animal contact with greywater and soil
1694 irrigated with greywater shall be minimized.

1695 _____ (D)(A) Greywater shall not leave the property on which it is generated.
1696 Ponding or runoff is prohibited.

1697 _____ (E) Water which has been used to wash diapers or similarly soiled or
1698 infectious garments shall not enter the greywater system and shall be diverted into the sanitary
1699 sewer or septic system.

1700 _____ (F) Water which contains hazardous materials such as paint, solvents,
1701 petroleum products, oil, gasoline, antifreeze, solvents, pesticides and herbicides shall not enter the

1714 ~~greywater system. Greywater shall not contain hazardous chemicals derived from activities such~~
1715 ~~as cleaning car parts, washing greasy or oily rags, or disposing of wastewater solutions from~~
1716 ~~home photo labs or similar hobbyist or home occupational activities.~~

1717
1718 ~~(G)(B) Greywater systems shall not be installed in a delineated~~
1719 ~~floodplain.~~

1720
1721 ~~(H)(C) The volume of greywater shall not exceed an average of 2000~~
1722 ~~gallons per day.~~

1723
1724 ~~(I)(D) Greywater shall not come in direct contact with or adversely~~
1725 ~~impact surface or groundwater.~~

1726
1727 ~~(J) Filter backwash water and flush water shall not be used for any~~
1728 ~~purpose. The filter backwash and flush discharge shall be contained and disposed of into the~~
1729 ~~building sewer system or septic tank with a design capacity to accept all the blackwater and~~
1730 ~~greywater. Sanitary procedures shall be followed when handling filter backwash and flush~~
1731 ~~discharge or greywater.~~

1732
1733 ~~(ii) Odor control of the greywater system shall meet the requirement of~~
1734 ~~Wyoming DEQ Air Quality Regulations Chapter 2, Section 11.~~

1735
1736 ~~(iii) Stormwater~~

1737
1738 ~~(A) The greywater system shall not be located in a drainage way.~~

1739
1740 ~~(B) The greywater system shall prevent storm runoff from carrying the~~
1741 ~~greywater off of the application site.~~

1742
1743 ~~(iv)(iii) If the greywater system is to be used during the winter, the greywater~~
1744 ~~system shall be designed to prevent freezing.~~

1745
1746 ~~(e)(b) Estimating Greywater Discharge~~

1747
1748 ~~(i) The greywater discharge for single family and multi-family dwellings shall be~~
1749 ~~calculated by estimates of greywater use based on water use records, or the following procedure:~~

1750
1751 ~~(A) The number of occupants of each dwelling unit shall be calculated as 2~~
1752 ~~occupants per bedroom.~~

1753
1754 ~~(B) The estimated greywater flows of each occupant shall be calculated in~~
1755 ~~gallons per day (gpd) as follows:~~

1756
1757 ~~Showers, bathtubs and wash basins – 25 gpd/occupant~~

1758
1759 ~~Laundry – 15 gpd/occupant~~

1760
1761 ~~(ii) The total number of occupants shall be multiplied by the applicable estimated~~
1762 ~~greywater discharge as provided above and the type of fixtures connected to the greywater~~
1763 ~~system.~~

1764

1765 ~~_____ (d) (c) _____~~ Greywater System Components and Configurations
1766
1767 ~~_____ (i) _____~~ Flow Diversion
1768
1769 ~~_____ (A)(i) _____~~ All greywater systems shall have a flow diverter which directs means to
1770 direct greywater to either the blackwater system or the greywater system.
1771
1772 ~~_____ (B)(ii) _____~~ Diverter valves shall not have the potential to allow backflow
1773 from the blackwater system into the greywater system.
1774
1775 ~~_____ (C) _____~~ Pipe elbows with rotatable compression fittings or equivalent
1776 components may be used to connect greywater sources with the greywater system or blackwater
1777 system if the pipe can only be connected to one system at a time. A capping device such as a
1778 rubber slip cap with band clamp shall be used to seal the plumbing of the system that is not in
1779 use.
1780
1781 ~~_____ (D) _____~~ The rubber discharge hose from a laundry washing machine may be
1782 moved between a vertical blackwater riser pipe and a vertical greywater riser pipe without the
1783 need for a diverter valve.
1784
1785 ~~_____ (ii) _____~~ Greywater Collection Tank
1786
1787 ~~_____ (A) _____~~ When the greywater system design includes a tank, specifications for
1788 the tank shall be submitted for approval. Such plans shall show all dimensions and other
1789 pertinent data.
1790
1791 ~~_____ (B) _____~~ Shall be constructed of solid, durable materials not subject to excessive
1792 corrosion or decay and shall be water tight.
1793
1794 ~~_____ (C) _____~~ Shall be structurally designed to withstand all anticipated earth or other
1795 loads. Tank covers shall be capable of supporting an earth load of not less than three hundred
1796 (300) pounds per square foot when the tank is installed underground.
1797
1798 ~~_____ (D) _____~~ Shall be covered to prevent access by flying insects, rodents, domestic
1799 animals and people.
1800
1801 ~~_____ (E) _____~~ Shall be vented with a suitable screen to keep animals and insects out
1802 of the system.
1803
1804 ~~_____ (F) _____~~ Inside collection tank shall be installed in accordance with the
1805 International Building Code for internal plumbing for black water.
1806
1807 ~~_____ (G) _____~~ Shall not hold greywater for more than 24 hours.
1808
1809 ~~_____ (H) _____~~ Overflow Requirements:
1810
1811 ~~_____ (I) _____~~ Each tank shall have an overflow drain. The overflow drain
1812 shall have a permanent connection to the building drain or building sewer, upstream of septic
1813 tanks, if any. The overflow drain shall not be equipped with a shutoff valve.
1814

1815 ~~_____ (II) The overflow drain shall not be less in diameter than the inlet~~
1816 ~~pipe.~~

1817
1818 ~~_____ (III) The overflow system must be designed so that the tank overflow~~
1819 ~~will drain by gravity to the existing sewer line or septic tank. The tank shall be protected against~~
1820 ~~sewer line backflow by a check valve.~~

1821 ~~_____~~
1822 ~~_____ (iii) Piping~~

1823
1824 ~~_____ (A) Greywater conveyance pipes shall be permanently labeled for~~
1825 ~~Greywater or shall be colored purple. Non-paint marking pens are unacceptable as permanent~~
1826 ~~labeling.~~

1827
1828 ~~_____ (B) Gravity flow pipes shall be constructed to allow complete draining of~~
1829 ~~the pipe.~~

1830
1831 ~~_____ (C) Pressurized pipe systems shall be constructed and designed to be~~
1832 ~~drained or the water evacuated by compressed air for winterization.~~

1833
1834 ~~_____ (iv) Disinfection~~

1835
1836 ~~_____ (A)(iii) All greywater Greywater to be used for surface irrigation shall~~
1837 ~~should be disinfected. The disinfection should achieve a fecal coliform level of 200 cfu/100 mL~~
1838 ~~or less.~~

1839
1840 ~~_____ (B) Disinfection may be accomplished through chemical methods or~~
1841 ~~ultraviolet disinfection systems.~~

1842
1843 ~~_____ (I) Chemical disinfection~~

1844
1845 ~~_____ (1.) Chemical disinfection methods include the use of iodine,~~
1846 ~~chlorine, or bromine.~~

1847
1848 ~~_____ (2.) Chemical disinfection shall provide the proper dosage of~~
1849 ~~disinfection to achieve a fecal coliform level of 200/100 mL or less.~~

1850
1851 ~~_____ (II) Ultraviolet disinfection systems~~

1852
1853 ~~_____ (1.) Ultraviolet (UV) disinfection systems shall be designed~~
1854 ~~and installed according to the manufacturer recommendations.~~

1855
1856 ~~_____ (2.) Greywater disinfected by a UV disinfection system shall~~
1857 ~~have a UV transmittance less than the UV transmittance rated by the manufacturer.~~

1858
1859 ~~_____ (3.) The max flow rate of the UV disinfection system shall not~~
1860 ~~be exceeded.~~

1861 ~~_____ (e)(d) Setbacks~~

1863

1864 (i) A 30 foot buffer zone is required between the greywater application site and
1865 adjacent property lines and any public right-of-way. This buffer zone requirement may be met by
1866 the use of a subsurface drip irrigation system.

1867 _____
1868 (ii) A 30 foot separation distance is required between greywater application sites
1869 and all surface waters.

1870 _____
1871 (iii) A 100 foot separation distance is required between greywater application sites
1872 and all potable water supply wells.

1873 _____
1874 (f) ~~Greywater Applications.~~

1875 _____
1876 (i) ~~General~~

1877 _____
1878 (A) ~~Each zone of an irrigation field must be of adequate size to receive the~~
1879 greywater anticipated in that zone.

1880 _____
1881 (B) ~~No irrigation or disposal field shall extend within three (3) vertical feet~~
1882 of the highest known seasonal groundwater, or to a depth where greywater contaminates the
1883 groundwater or surface water.

1884 _____
1885 (C) ~~Permeable pipe systems designed for greywater shall be installed~~
1886 according to manufacturer's recommendations.

1887 _____
1888 (ii) ~~Subsurface Irrigation~~

1889 _____
1890 (A) ~~Subsurface irrigation with greywater may be used to irrigate land and~~
1891 vegetation.

1892 _____
1893 (B) ~~Food crops for direct human consumption shall not be harvested for 30~~
1894 days after application of greywater.

1895 _____
1896 (C) ~~Subsurface irrigation shall not overwhelm the absorption system~~
1897 leading to overland flow.

1898 _____
1899 (D) ~~Mulch Basins~~

1900 _____
1901 (1.) ~~The total irrigation and/or mulch basin area required must be~~
1902 equal to the estimated greywater discharge (gpd) divided by the absorption capacity (gpd/ft2).

1903 _____
1904 (2.) ~~Shall be sized to provide sufficient depth, length and width to~~
1905 prevent ponding or runoff during the greywater surge of a clothes washer, bathtub or shower.
1906 Mulch shall be replenished as required due to decomposition of organic matter. Mulch basins
1907 will require periodic maintenance, reshaping or removal of dirt to maintain surge capacity,
1908 accommodate plant growth, and prevent ponding or runoff.

1909 _____
1910 (3.) ~~Shall not be deeper than the root zone of the plants to be~~
1911 irrigated.

1912 _____
1913 (4.) ~~Free Flow Outlets~~

1914 _____

- 1915 ~~_____ a. _____ Greywater shall be applied at the top of the mulch.~~
1916
1917 ~~_____ b. _____ Application point(s) shall be protected from access by~~
1918 ~~_____ flying insects, rodents, domestic animals and people. Protections shall be constructed to allow~~
1919 ~~_____ easy access for cleaning and maintenance.~~
1920
1921 ~~_____ c. _____ Inlet piping to the mulch basin shall be no less than 1 inch~~
1922 ~~_____ higher than the surface to which it is applied to allow for free fall of water.~~
1923
1924 ~~_____ (5.) _____ Sub mulch Outlets~~
1925
1926 ~~_____ a. _____ Greywater shall be applied below the surface of the mulch~~
1927 ~~_____ into one or more distribution chambers constructed of perforated material.~~
1928
1929 ~~_____ b. _____ Inlet piping to distribution chamber of the mulch basin~~
1930 ~~_____ shall be no less than 2 inches higher than the surface to which it is applied to allow for free fall of~~
1931 ~~_____ water.~~
1932 ~~_____ c. _____ Distribution chamber shall be constructed for easy~~
1933 ~~_____ cleaning and maintenance.~~
1934
1935 ~~_____ (6.) _____ A compost pile shall meet the requirements of a mulch basin.~~
1936
1937 ~~_____ (E) _____ Drip Systems~~
1938 ~~_____~~
1939 ~~_____ (1.) _____ Shall be filtered prior to the point of application or shall be~~
1940 ~~_____ designed to prevent frequent clogging.~~
1941
1942 ~~_____ (2.) _____ Discharge nozzles shall be specifically designed for the~~
1943 ~~_____ application of greywater without clogging.~~
1944
1945 ~~_____ (3.) _____ Drilled pipe drip system holes shall be no smaller than ¼ inches~~
1946 ~~_____ in diameter.~~
1947
1948 ~~_____ (4.) _____ Point of application flow shall be low enough to prevent any~~
1949 ~~_____ surface flow of greywater.~~
1950
1951 ~~_____ (iii) _____ Surface Irrigation~~
1952 ~~_____~~
1953 ~~_____ (A) _____ Greywater used for surface irrigation shall receive a level of~~
1954 ~~_____ disinfection so the maximum fecal coliform level is 200/100 mL or less.~~
1955 ~~_____~~
1956 ~~_____ (B) _____ Surface irrigation with greywater that has been treated by disinfection~~
1957 ~~_____ may be used for irrigation of land and vegetation.~~
1958
1959 ~~_____ (C) _____ Flood irrigation~~
1960
1961 ~~_____ (1.) _____ Shall not cause channeling or erosion of the application site.~~
1962
1963 ~~_____ (2.) _____ Shall use a distribution system to evenly distribute flows across~~
1964 ~~_____ the site.~~
1965

1966 ~~_____ (3.) Shall not pond in excess of ¼ inch in depth.~~

1967

1968 ~~_____ (4.) Greywater shall not remain on the ground surface for more than~~
1969 ~~15 minutes after source flow has stopped.~~

1970

1971 ~~_____ (g) A design package for greywater systems is provided online at the Division's website~~
1972 ~~to assist the applicant in submitting a completed application for coverage under the general permit~~
1973 ~~for small wastewater systems. The worksheet and calculations were prepared by a registered~~
1974 ~~professional engineer employed by the Wyoming Department of Environmental Quality, Water~~
1975 ~~Quality Division. The general design requirements stated in this section are incorporated into the~~
1976 ~~worksheets such that by properly completing the forms and installing the components, the system~~
1977 ~~will comply with these requirements.~~

1978

1979 ~~(e) Owner's name, address, phone number, legal description of greywater system~~
1980 ~~(address, latitude/longitude, or ¼ ¼ section), and the date construction or installation will begin.~~

1981

1982

1983 **Section 18. Operation and Maintenance.**

1984

1985 ~~(a) For any system that disposes of wastewater through land application or subsurface~~
1986 ~~filtration, the owner shall not add any chemical or biochemical additive to the system that would~~
1987 ~~adversely affect the quality of the groundwater as stated in the WDEQ Water Quality Rules &~~
1988 ~~Regulations, Chapter 8.~~

1989

1990 ~~(b) Septic tanks shall be pumped as needed to prevent solids carryover into the soil~~
1991 ~~absorption system.~~

1992

1993 ~~(c) Holding tanks and sealed vaults shall be pumped prior to reaching their maximum~~
1994 ~~capacity. It is preferable that these types of tanks be pumped before the wastewater volume~~
1995 ~~exceeds 75% of the tank's capacity.~~

1996

1997 ~~(d) Any service provider that pumps septic tanks, holding tanks, or sealed vaults, shall~~
1998 ~~dispose of the wastewater contents at a permitted wastewater treatment facility or in a manner~~
1999 ~~approved by the Division or delegated authority.~~

2000

2001 ~~(e) Damaged fittings and broken, crushed or plugged piping associated with any small~~
2002 ~~wastewater system shall be replaced in a timely manner.~~

2003

2004 ~~(f) Composting or non-discharging toilets where permitted shall have their waste~~
2005 ~~disposed of at a permitted wastewater treatment facility or landfill, or in a manner approved by~~
2006 ~~the Division or delegated authority.~~

2007

2008 **Section 19. Commercial and Industrial Wastes and/or Domestic Wastes Greater**
2009 **Than 2000 Gallons per Day.**

2010

2011 ~~(formerly 16 (a)) (a) General requirements. Those Commercial/industrial wastewater systems or~~
2012 ~~combination commercial/industrial and domestic wastewater systems are subject to applicable~~

2013 requirements listed in Section 1 through ~~12 and 15~~ 14-15 of this chapter, in addition to
2014 requirements in this section.

2015
2016 ~~(formerly 16(b)) (b) — Hydrogeologic investigation.~~ If the wastewater is classified as, or
2017 determined to be hazardous and/or toxic and/or contain petroleum products, the applicant shall
2018 demonstrate to the administrator that any discharge or seepage from the wastewater facility will
2019 not cause a violation of the surface and/or groundwaters of the state in accordance with Chapter
2020 1, “Quality Standards for Wyoming Surface Waters” and Chapter 8, “Quality Standards for
2021 Wyoming Groundwaters.” Due to the wide variety of wastes, wastewater and site conditions, the
2022 latest available scientific information shall be used to demonstrate that violation will not occur.

2023
2024 ~~(formerly 16(c)) (c) — Impact.~~ If the impact of the hazardous and/or toxic substance
2025 and/or petroleum products cannot be determined and mitigated, disposal of the wastewater using
2026 a soil absorption system shall be prohibited.

2027
2028 ~~(formerly 16(d)) (d) — Pre-treatment.~~ Pre-treatment of the wastewater to remove the
2029 hazardous, ~~and/or toxic, substance(s)~~ and/or petroleum products shall be required prior to disposal
2030 if deemed necessary to protect the groundwater and surface water(s) of the state .

2031
2032 ~~(formerly 4(a)(ii)) (e) If the flow is greater than 2000 gpd but less than 10,000 gpd, the~~
2033 ~~minimum isolation distances (in feet) shown in Table 3 shall be maintained.~~ The minimum
2034 horizontal setback distances (in feet) shown in Table 7 shall be maintained for commercial and
2035 industrial wastes and/or wastes greater than 2000 gallons per day but less than 10,000 gallons per
2036 day.

2037
2038 ~~(formerly Table 3)~~ **Table 7. Minimum Horizontal Setbacks for Commercial and**
2039 **Industrial Wastes in Feet¹**

| From | To Septic Tank Or Equivalent | To Absorption System |
|--|------------------------------|-------------------------|
| Wells (includes neighboring wells) | 50 | 200 |
| <u>Public Water Supply Well</u> | <u>100</u> ² | <u>500</u> ² |
| Property Lines | 10 | 10 |
| Foundation Wall (w/o drains) | 5 | 10 |
| Foundation Wall (with drains) | 5 | 50 |
| Potable Water Pipes | 25 | 50 |
| Septic Tank | N/A | 10 |
| Stream or Surface Body of Water, <u>Spring</u> (including seasonal and intermittent) | 50 | 100 |
| <u>Cisterns</u> | <u>50</u> | <u>50</u> |

2041 ¹ ~~(formerly 4(a)(iii))~~ For systems larger than 10,000 gallons per day, the isolation distance shall be
2042 determined by a hydrogeological study in accordance with ~~Section 15(b)~~ Section 17(b) of Chapter
2043 III, but shall not be less than those ~~in subsection two above~~ shown in Table 7.

2045 ² Wastewater systems that discharge to the same aquifer that supplies a public water supply well and
2046 are located within Zone 1 or 2 (Attenuation) of the public water supply well, as determined by
2047 Wyoming Department of Environmental Quality Source Water Assessment Project (2004) or as
2048 established in Section 2 of the Wyoming Wellhead Protection Guidance Document (1997), shall
2049 provide additional treatment. These systems will be required to obtain an individual permit to
2050 construct and will require that a PE sign, stamp, and date the application, as stated in Section 2 of
2051 this chapter. The additional treatment shall be in accordance with Chapter III, Section 2(b)(ii). The
2052 treatment shall reduce the nitrates to less than 10 mg/L of NO₃- as N and provide 4-log removal of
2053 pathogens before the discharge leaves the property boundary of each small wastewater system.
2054
2055

2056 **APPENDIX A**
2057 **Percolation Test Procedure**
2058

2059 **Section 1. Purpose**
2060

2061 (a) Percolation tests are used to determine absorption system site suitability and to size
2062 the absorption system.
2063

2064 **Section 2. Procedure**
2065

2066 ~~(formerly (a))~~ (a) ~~Location.~~ General Requirements:
2067

2068 (i) Percolation tests shall not be conducted in test holes that extend into
2069 groundwater, bedrock, or frozen ground.
2070

2071 (ii) The percolation test shall be conducted only after the soil exploration pit has
2072 been dug and examined.
2073

2074 ~~(formerly (a))~~ (iii) A minimum of three (3) percolation test holes are required.
2075

2076 ~~(formerly (a))~~ (iv) The percolation test holes shall be spaced uniformly over the
2077 proposed soil absorption system site.
2078

2079 ~~(formerly (b))~~ (b) Preparation.
2080

2081 ~~(formerly (b))~~ (i) A ~~four (4) inch to~~ twelve (12) inch diameter hole shall be dug or
2082 bored to the proposed depth of the soil absorption ~~field~~ system.
2083

2084 (ii) The walls shall be vertical, with the natural soil surface exposed without
2085 smearing.
2086

2087 ~~(iii) To expose a natural soil surface~~ The sides and bottom shall be ~~seraped~~ scarified
2088 with a sharp pointed instrument and the loose material shall be removed from the hole.
2089

2090 (iv) Two (2) inches of ~~Coarse sand or gravel~~ gravel or coarse sand shall be placed
2091 in the bottom of the hole to prevent it from scouring and sealing during water addition.
2092

2093 (c) Presoaking
2094

2095 ~~(formerly (c))~~ (i) ~~Presoaking.~~ The purpose of presoaking is to have the water
2096 conditions in the soil reach a stable condition similar to that which exists during continual
2097 wastewater application. The minimum time of presoaking varies with soil conditions but must
2098 be sufficiently long so that the water seeps away at a constant rate. The following presoaking
2099 instructions are usually sufficient to obtain a constant rate.
2100

2101 ~~(formerly (c)(i))~~ (A) ~~In sandy soils, place 12 inches of water in the hole. Fill~~
2102 each hole with clear water to a level at least eighteen (18) inches above the gravel or coarse
2103 sand and allow it to seep away. Fill the hole again with 12 inches of water and if the water
2104 seeps away in ten minutes or less, it indicates that the soil is excessively permeable and

2105 ~~requirements in Section 5(d) of these regulations shall be followed. If the eighteen (18) inches~~
2106 ~~of water seeps away in eighteen (18) minutes or less, add eighteen (18) inches of water a~~
2107 ~~second time. If the water remains after ten minutes, additional saturation is necessary. Refer to~~
2108 ~~Appendix A(e)(ii) below. If the second filling of eighteen (18) inches of water seeps away in~~
2109 ~~eighteen (18) minutes or less, this indicates the soil is sandy and is excessively permeable. The~~
2110 ~~soil absorption system shall meet the requirements of Section 8 (c).~~

2111
2112 ~~(formerly (e) (ii)) (B) In other soils, maintain 12 inches of water in the hole~~
2113 ~~for at least four hours. If either the first or second fillings of eighteen (18) inches of water~~
2114 ~~does not seep away in ninety (90) minutes, eighteen (18) inches of water must be~~
2115 ~~maintained in the hole for at least four (4) hours to presoak the test hole. After the four (4)~~
2116 ~~hours of water contact time, allow the soil to swell for wait at least twelve (12) hours before~~
2117 ~~starting the percolation rate measurement as stated in Appendix A (d) below.~~

2118
2119 ~~(formerly (d) (d) Percolation Rate Measurement The water level should be~~
2120 ~~adjusted to six inches above the gravel initially and after each time interval measurement~~
2121 ~~when necessary.~~

2122
2123 ~~(formerly (i)) (i) In other soils, establish a fixed reference point and measure the~~
2124 ~~drop in water level at constant intervals. The water level drop should be measured to the~~
2125 ~~nearest 1/8 of an inch. The test may be terminated when the water drop is consistent for three~~
2126 ~~consecutive measurements. Fill each test hole with twelve (12) inches of water and allow the~~
2127 ~~soil to rehydrate for 15 minutes prior to any measurements~~

2128
2129 (ii) Establish a fixed reference point to measure the incremental water level
2130 drop at constant time intervals. The water level drop should be measured to the nearest 1/8 of
2131 an inch and the minimum time interval is ten (10) minutes.

2132
2133 (iii) Refill the test hole to twelve (12) inches above the gravel before starting
2134 the measurements. Continue to measure the incremental water level drop at a constant time
2135 interval until a consistent incremental water level drop is achieved. A consistent water level
2136 drop is achieved when three (3) consecutive water level drops are within 1/8 inches of each
2137 other.

2138 (iv) Before the water level drops below one (1) inch above the gravel, refill the
2139 test hole to twelve (12) inches and continue to measure the incremental water level drop.

2140
2141 ~~(formerly d(ii))(v) The percolation rate for each hole is calculated as follows~~
2142 ~~for each hole using the following formula:~~
2143

$$\begin{array}{l} \text{Time Interval (Minutes)} \\ \text{Final Water Level Drop (inches)} \end{array} = \begin{array}{l} \text{Percolation Rate} \\ \text{(minutes/inch)} \end{array}$$

2144 ~~(formerly d(ii)) (vi) If only three to five percolation tests are performed, the~~
2145 ~~design percolation rate for the absorption system is the slowest rate from all the holes tested. If six~~
2146 ~~or more percolation tests are performed, the design percolation rate for the absorption system is~~
2147 ~~the average of all the holes tested as determined by the above formula.~~

2148
2149 (e) The following information shall be recorded:
2150

- 2151 (i) Date(s) of test(s);
- 2152
- 2153 (ii) Location, diameter, and depth of each test hole;
- 2154
- 2155 (iii) Duration of presoak;
- 2156
- 2157 (iv) Time of day for beginning and end of each water-level drop interval;
- 2158
- 2159 (v) Each water-level drop measurement;
- 2160
- 2161 (vi) Calculated percolation rate;
- 2162
- 2163 (vii) Name and signature of person performing test;
- 2164
- 2165 (viii) Name of owner or project name; and
- 2166
- 2167 (ix) Certification that the percolation test was done in accordance with Wyoming
- 2168 Water Quality Rules and Regulations Chapter 25 Appendix A.
- 2169

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~~(Formerly Chapter 15, Appendix C)~~ **APPENDIX B**
~~General Statewide Permit~~
~~For Land Application of Domestic Septage in Remote Areas~~

~~Department of Environmental Quality/Water Quality Division~~
~~Septage Land Application Worksheet~~

Section 1. Restrictions and Requirements

To qualify for the land application of domestic septage (~~domestic septage being defined as either liquid or solid material removed from a septic tank result from normal household wastes~~) in remote areas, the following conditions must be met.

DEFINITIONS

* ~~“Permanent waterbody” means perennial streams, lakes, wetlands, etc. that have water throughout the year~~

* ~~“Intermittent stream” means a stream or part of a stream that is below the local water table for some part of the year but is not a perennial stream.~~

* ~~“Ephemeral stream” means a stream which flows only in direct response to precipitation in the immediate watershed or in response to snow melt, and has a channel bottom that is always above the prevailing water table.~~

* ~~“Wetland” means those areas having all three essential characteristics:~~

~~—— (A) Hydrophytic vegetation;~~

~~—— (B) Hydric soils;~~

~~—— (C) Wetlands hydrology.~~

(a) Location restrictions

(i) Only domestic septage generated on the property owner's location may be land applied on the same property owner's location. Domestic septage generated on a specific property may be land applied on said property, and shall not be transported to another location for land application.

(ii) A minimum distance of at least 1,000 feet must be maintained from all adjacent properties. No land application of domestic septage shall occur within 1,000 feet of all adjacent properties.

(iii) No land application of domestic septage may occur within 300 feet of a permanent waterbody, intermittent stream, ephemeral stream or wetland.

~~—— No land application of domestic septage may occur within 300 feet of public road.~~

2218 ~~_____~~ No land application of domestic septage shall occur within 300 feet of a public road,
2219 permanent surface water body, or intermittent stream.

2220
2221 ~~_____~~ No land application of domestic sewage may occur within 1000 feet of a residence
2222

2223 (b) Site restrictions;
2224

2225 (i) The land application of domestic septage shall only occur on those sites with
2226 established vegetation such as rangeland, pasture or hay meadows.

2227
2228 (ii) No more than 5,000 gallons of domestic septage per acre per year shall be land
2229 applied.

2230
2231 (iii) ~~No land application of domestic septage may occur where the depth from the~~
2232 ~~surface to groundwater is less than four (4) feet.~~

2233
2234 ~~_____~~ No land application of domestic septage may occur where site slopes exceed five
2235 percent (5%).

2236
2237 ~~_____~~ No land application of domestic septage shall occur where the site's slope exceeds
2238 five percent (5%) or where the depth to groundwater is less than four (4) feet.

2239
2240 (iv) The land application of domestic septage shall not occur between November 1
2241 and May 1, or any other time when frozen or saturated ground conditions exists.

2242
2243 (v) No public access shall be allowed to any site where domestic septage has been
2244 applied for at least one (1) year following application. ~~to any site where domestic septage has~~
2245 ~~been applied.~~

2246
2247 ~~_____~~ Lime stabilization of the septage to pH 12 for 30 minutes prior to land application is
2248 optional

2249 (vi) No grazing animals shall be allowed access to any site where domestic septage
2250 has been land applied for at least thirty (30) days following application. ~~to any site where~~
2251 ~~domestic septage has been land applied.~~

2252
2253 (c) Crop restrictions;
2254

2255 (i) No root crops shall be harvested from soils where domestic septage has been
2256 land applied for at least thirty-eight(38) months following application. ~~from soils where domestic~~
2257 ~~septage has been land applied.~~

2258
2259 (ii) No truck crops (harvested parts touch land surface) shall be harvested from
2260 soils where domestic septage has been land applied for at least fourteen(14) months following
2261 application. ~~from soils where domestic septage has been land applied.~~

2262
2263 (iii) No commodity crops (other food, feed, and fiber crops whose harvested parts
2264 do not touch land surface) shall be harvested from soils where domestic septage has been land
2265 applied for at least thirty(30) days following application. ~~from soils where domestic septage has~~
2266 ~~been land applied.~~

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(iv) No turf shall be harvested from soils where domestic septage has been land applied for at least one(1) year following application. ~~from soils where domestic septage has been land applied.~~

(d) Reporting Requirements:

(i) The property owner shall notify the appropriate Department of Environmental Quality, Water Quality Division (DEQ/WQD) District Office Engineer prior to the land application of domestic septage to confirm the requirements and to arrange a possible DEQ/WQD inspection of the land application.

(ii) All records concerned with each septage application will be maintained for at least five (5) years.

(iii) There is a worksheet provided online at the Division's website that must be completed, signed and returned to the DEQ/WQD or the appropriate delegated local permitting authority within 15 days of the land application.

~~————— This worksheet must be completed, signed, and returned to the Department of Environmental Quality, Water Quality Division or the appropriate delegated local permitting authority within 15 days of the land application.~~

~~————— Provide the following information concerning your site. Enter NA if not applicable.~~

- ~~1. Date of the application: _____~~
- ~~2. Number of acres receiving septage: _____~~
- ~~3. Number of gallons of septage land applied: _____~~
- ~~4. Type of vegetation receiving: _____~~
- ~~5. Name, address and telephone number of septage hauler:~~

~~6. If septage was optionally alkali stabilized, please indicate what material was used for stabilization and how pH was measured: _____~~

~~7) Please indicate that the site sketch on the back of this sheet has been completed and complies with the site restriction distances yes/no:~~

~~8) Please indicate if photos of the land application site will be sent to the appropriate District Office: Yes/no. _____~~

~~9) Please provide physical address or legal description of land application site: _____~~

~~10) Please give the name of the DEQ/WQD representative contacted, and time and date. This contact needs to be made prior to the domestic septage land application: _____~~

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STRIKE
SKETCH

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REQUIRED ISOLATION
DISTANCE FROM LAND
APPLICATION SITE

-) 1,000 feet from adjacent property
-) 1,000 feet from any dwelling
-) 300 feet from any live water, into stream or drainage

~~I certify that the information provided in this worksheet is accurate and meets the requirements set forth~~
here

~~Signature of landowner _____ Date~~

Name (printed)

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signature of applicator _____ Date
Name (printed)