

1 CHAPTER 24

2  
3 **Class VI Injection Wells and Facilities**  
4 **Underground Injection Control Program**  
5

6 **Section 1. Authority ~~and Purpose.~~**  
7

8 These regulations are promulgated pursuant to Wyoming Statutes (W.S.) §§ 35-11-101 through  
9 2005, specifically § 313, ~~and no person shall sequester carbon dioxide unless authorized by an~~  
10 ~~Underground Injection Control (UIC) permit issued by the Department of Environmental Quality~~  
11 ~~(DEQ). The injection of carbon dioxide for purposes of a project for enhanced recovery of oil or~~  
12 ~~other minerals approved by the Wyoming Oil and Gas Conservation Commission shall not be~~  
13 ~~subject to the provisions of this regulation unless the operator converts to geologic sequestration~~  
14 ~~upon the cessation of oil and gas recovery operations or as otherwise required by the~~  
15 ~~Commission or Director.~~

16  
17 ~~These rules and regulations also provide financial assurance for the purposes specified in § 35-~~  
18 ~~11-313.~~

19  
20 **Section 2. Definitions.** The following definitions supplement ~~those~~ the definitions  
21 contained in Section § 35-11-103 of the Wyoming Environmental Quality Act.  
22

23 (a) “Abandoned well” means a well whose use has been permanently discontinued or  
24 that is in a state of disrepair such that it cannot be used for its intended purpose or for  
25 observation purposes. Temporary or intermittent cessation of injection operations is not  
26 abandonment.  
27

28 (b) "Aquifer" means a zone, stratum, or group of strata that can store and transmit  
29 water in sufficient quantities for a specific use.  
30

31 (c) “Area of review” means the subsurface three-dimensional extent of the carbon  
32 dioxide plume, associated pressure front, and displaced fluids, as well as the overlying  
33 formations, and surface area above that delineated region. ~~The area of review is based on~~  
34 ~~available site characterization, monitoring, and operational data as set forth in Section 8 of this~~  
35 ~~chapter.~~  
36

37 (d) "Background" means the constituents or parameters and the concentrations or  
38 measurements that describe water quality and water quality variability prior to the ~~subsurface~~  
39 ~~discharge~~ underground injection.  
40

41 (e) “Bore/casing annulus” means the space between the wellbore and the well casing.  
42

43 (f) “Carbon dioxide plume” means the underground extent, in three dimensions, of  
44 an injected carbon dioxide stream.  
45

46 (g) “Carbon dioxide stream” means carbon dioxide, plus associated substances  
47 derived from the source materials and any processing, and any substances added to the stream to  
48 enable or improve the injection process. Within this Chapter, the term “carbon dioxide stream”  
49 ~~This chapter~~ does not ~~apply to~~ include any carbon dioxide stream that meets the definition of a  
50 hazardous waste under 40 C.F.R. ~~Part §~~ 261.3.

51  
52 (h) “Casing” means a pipe or tubing of appropriate material, of varying diameter and  
53 weight, lowered into a borehole during or after drilling ~~in order~~ to support the sides of the hole  
54 ~~and thus~~ to prevent the walls from caving, to prevent loss of drilling mud into porous ground, or  
55 to prevent water, gas, or other fluid from entering or leaving the hole.

56  
57 (i) “Casing/tubing annulus” means the space between the well casing and the tubing.

58  
59 (j) “Cementing” means ~~to seal~~ sealing the annular space around the outside of a  
60 casing string using a specially formulated mixture to hold the casing in place and prevent any  
61 movement of fluid in this annular space. Cementing also includes operations to seal the well at  
62 the time of abandonment.

63  
64 (k) “Class I well” means a well used to inject hazardous or non-hazardous industrial,  
65 commercial, or municipal waste beneath the lowermost formation containing, within one- quarter  
66 (1/4) mile of the well bore, an underground source of drinking water.

67  
68 ~~(k)(l) “Class II Wwell” shall means any non-commercial well used to dispose of water~~  
69 ~~and/or fluids directly associated with the production of oil and/or gas, any well used to inject~~  
70 ~~fluids or gas for enhanced oil recovery, or any well used for the storage of liquid hydrocarbons.~~  
71 ~~Non-hazardous gas plant wastes may be disposed of in a Class II well pending Environmental~~  
72 ~~Protection Agency co-approval, as defined in Wyoming Oil and Gas Conservation Commission~~  
73 ~~Rules and Regulations, Chapter 1, Section 2.~~

74  
75 ~~(m)~~ (m) “Class V facility” means any property that contains an injection well, drywell, or  
76 subsurface fluid distribution system that is not defined as a Class I, II, III, IV, or VI well in ~~this~~  
77 ~~chapter~~ these Regulations. ~~The~~ A Class V facility includes all systems of collection, treatment,  
78 and control that are associated with the ~~subsurface disposal~~ underground injection. ~~Class V~~  
79 ~~injection wells are described in Water Quality Rules and Regulations Chapter 27.~~

80  
81 ~~(m)(n) “Class VI well” means a well injecting a carbon dioxide stream for geologic~~  
82 ~~sequestration, beneath the lowermost formation containing a USDW; or a well used for geologic~~  
83 ~~sequestration of carbon dioxide that has been granted a waiver of the injection depth~~  
84 ~~requirements pursuant to requirements of Section 10 of this chapter; or, a well used for geologic~~  
85 ~~sequestration of carbon dioxide that has received an expansion to the areal extent of an existing~~  
86 ~~Class II enhanced oil recovery or enhanced gas recovery aquifer exemption pursuant to Section 5~~  
87 ~~of this chapter. Class VI wells are regulated under this chapter. that is used for injecting a~~  
88 carbon dioxide stream for geologic sequestration that:

90 (i) Is not experimental in nature and injects a carbon dioxide stream for  
91 geologic sequestration, beneath the lowermost formation containing an underground source of  
92 drinking water;

94 (ii) Has been granted a waiver of the injection depth requirements pursuant to  
95 requirements of Section 15 of this Chapter; or

96  
97 (iii) Has received an expansion to the areal extent of an existing Class II  
98 enhanced oil recovery or enhanced gas recovery aquifer exemption pursuant to Section 16 of this  
99 Chapter.

100  
101 ~~(n)~~(o) “Confining zone” means a geological formation, group of formations, or part of a  
102 formation stratigraphically overlying the injection zone(s) that act(s) as a barrier to fluid  
103 movement. For Class VI wells operating under an injection depth waiver, confining zone means  
104 a geologic formation, group of formations, or part of a formation stratigraphically overlying and  
105 underlying the injection zone(s) that acts as a barrier to fluid movement.

106  
107 ~~(e)~~(p) “Contaminant” means any pollution; wastes; or physical, chemical, biological, or  
108 radiological substance or matter in water.

109  
110 ~~(p)~~(q) “Corrective action” means the use of Administrator-approved methods to ensure  
111 that wells within the area of review do not serve as conduits for the movement of fluids into  
112 geologic formations other than those ~~to be~~ authorized under the permit.

113  
114 ~~(q)~~ “Draft permit” means a document indicating the tentative decision by the  
115 Department to issue or deny, modify, revoke and reissue, or terminate a permit. A notice of  
116 intent to terminate a permit and a notice of intent to deny a permit are types of draft permits. A  
117 denial of a request for modification, revocation and reissuance, or termination is not a draft  
118 permit. A draft permit for issuance shall contain all conditions and content, compliance sched-  
119 ules and monitoring requirements required by this chapter.

120  
121 ~~(r)~~ “Duly authorized representative” means a specific individual or a position having  
122 responsibility for the overall operation of the regulated facility or activity. The authorization  
123 shall be made in writing by a responsible corporate officer and shall be submitted to the  
124 Administrator.

125  
126 ~~(s)~~(r) “Endangerment” means exposure to expose to actions or activities that could  
127 pollute an Underground Ssource of Ddrinking Wwater (USDW).

128  
129 ~~(t)~~(s) “Exempted aquifer” means an “aquifer” or a portion thereof that meets the criteria  
130 in the definition of “underground source of drinking water” but that has been exempted  
131 according to the procedures in Section ~~5(e)~~ 16 of this ~~e~~Chapter.

132  
133 ~~(u)~~ “Experimental technology” means a technology that has not been proven feasible  
134 under the conditions in which it is being tested.

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~~(v)(t)~~ “Fact sheet” means a document briefly setting forth the principal facts and the significant factual, legal, methodological, and policy questions considered in preparing the draft permit. ~~Fact sheets for Class VI wells are incorporated into the public notice.~~

~~(w)~~—“Fault” means a surface or zone of rock fracture along which there has been displacement.

~~(x)~~—“Flow rate” means the volume per time unit given to the flow of gases or other fluid substance that emerges from an orifice, pump, turbine or passes along a conduit or channel.

~~(y)~~—“Fluid” means any material that flows or moves, whether semisolid, liquid, sludge, gas or any other form or state.

~~(z)~~—“Formation” means a body of consolidated or unconsolidated rock characterized by a degree of lithologic homogeneity that is prevailing, but not necessarily, tabular and is mappable on the earth’s surface or traceable in the subsurface.

~~(aa)~~—“Formation fluid” means fluid present in a formation under natural conditions as opposed to introduced fluids, such as drilling mud.

~~(bb)(u)~~ “Geologic sequestration project” means an injection well or wells used to emplace a carbon dioxide stream into an injection zone for geologic sequestration. It includes the subsurface three-dimensional extent of the carbon dioxide plume, associated pressure front, and displaced fluid, as well as the surface area above that delineated region. ~~(Reference Section 35-11-103(e) of the Wyoming Environmental Quality Act for definitions of geologic sequestration, geologic sequestration site, and geologic sequestration facilities.)~~

~~(ee)(v)~~ “Groundwater” means subsurface water that fills available openings in rock or soil materials such that they may be considered water saturated under hydrostatic pressure.

~~(dd)(w)~~ “Groundwaters of the State” are all bodies of underground water that are wholly or partially within the boundaries of the State.

~~(ee)(x)~~ “Hazardous waste” means a hazardous waste as defined in 40 C.F.R. § 261.3.

(y) “Indian lands” and “Indian country” means:

(i) All land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation;

(ii) All dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state; and

182 (iii) All Indian allotments, the Indian titles to which have not been  
183 extinguished, including rights-of-way running through the same.

184  
185 ~~(ff) “Individual permit” means a permit issued for a specific facility operated by an~~  
186 ~~individual operator, company, municipality, or agency. An individual permit may be established~~  
187 ~~as an area permit and include multiple points of discharge that are all operated by the same~~  
188 ~~person.~~

189  
190 ~~(gg)(z) “Injectate” means the material injected through any underground injection facility~~  
191 ~~after it has received whatever pretreatment is done.~~

192  
193 ~~(hh)(aa) “Injection zone” means a geologic formation, group of formations, or part~~  
194 ~~of a formation that is of sufficient areal extent, thickness, porosity, and permeability to receive~~  
195 ~~carbon dioxide through a well or wells associated with a geologic sequestration project.~~

196  
197 ~~(ii) “Lithology” means the description of rocks on the basis of their physical and~~  
198 ~~chemical characteristics.~~

199  
200 ~~(jj)(bb) “Log” means to make a written record progressively describing the strata and~~  
201 ~~geologic and hydrologic character thereof to include electrical, radioactivity, radioactive tracer,~~  
202 ~~temperature, cement bond and similar surveys, a lithologic description of all cores, and test data.~~

203  
204 ~~(kk)(cc) “Long string casing” means a casing that is continuous from at least the~~  
205 ~~top of the injection interval to the surface and that is cemented in place.~~

206  
207 ~~(ll) “Long term stewardship” means after release of financial assurance, upon site~~  
208 ~~closure, where the sequestration site may require periodic monitoring, measurement, or~~  
209 ~~verification of plume stabilization over an indefinite period of time.~~

210  
211 ~~(mm) “Mechanical integrity” means the sound and unimpaired condition of all~~  
212 ~~components of the well or facility or system for control of a subsurface discharge and associated~~  
213 ~~activities.~~

214  
215 ~~(nn) “Owner or operator” means the owner or operator of any facility or activity~~  
216 ~~subject to regulation under the Resource Conservation Recovery Act (RCRA) or an approved~~  
217 ~~state program; the Safe Drinking Water Act Underground Injection Control (UIC) program~~  
218 ~~administered by the US EPA or a state; the National Pollutant Discharge Elimination System~~  
219 ~~(NPDES) or an authorized state program; or the Clean Water Act Section 404 Dredge and Fill~~  
220 ~~permit program.~~

221  
222 ~~(oo)(dd) “Packer” means a device lowered into a well to produce a fluid-tight seal.~~

223  
224 ~~(pp) “Permit” means a Wyoming Underground Injection Control permit, unless~~  
225 ~~otherwise specified.~~

226  
227 ~~(qq) “Permittee” means the named permit holder.~~

228  
229       ~~(rr)~~(ee) “Plugging” means the act or process of stopping the flow of water, oil, or gas into  
230 or out of a formation through a borehole or well penetrating that formation.

231  
232       ~~(ss)~~(ff) “Plugging record” means a systematic listing of permanent or temporary  
233 abandonment of water, oil, gas, test, exploration, and waste injection wells, ~~and~~ A plugging  
234 record may contain a well log, description of amounts and types of plugging material used, the  
235 method employed for plugging, a description of formations that are sealed, and a graphic log of  
236 the well showing formation location, formation thickness, and location of plugging structures.

237  
238       ~~(tt)~~(gg) “Plume stabilization” ~~means~~ has been achieved when the carbon dioxide stream  
239 that has been injected subsurface essentially no longer expands vertically or horizontally and  
240 poses no threat to USDWs underground sources of drinking water, human health, safety, or the  
241 environment, as demonstrated by a minimum of three (3) consecutive years of monitoring data.

242  
243       ~~(uu) — “Point of compliance” means a point at which the permittee shall meet all permit~~  
244 ~~and regulatory requirements.~~

245  
246       ~~(vv) — “Point of injection” means the last accessible sampling point prior to a fluid being~~  
247 ~~released into the subsurface environment through a Class VI injection well.~~

248  
249       ~~(ww)~~(hh)       “Post-injection site care” means the monitoring, measurement,  
250 verification, and other actions (including corrective action) needed to ensure that USDW’s  
251 underground sources of drinking water are not endangered, following the ~~closure~~ cessation of  
252 injection, and plugging and abandonment of injection wells until plume stabilization has been  
253 achieved and certified by the Administrator, as required under Section ~~17~~ 24 of this ~~e~~Chapter.

254  
255       ~~(xx) — “Pressure” means the total load or force per unit area acting on a surface.~~

256  
257       ~~(yy)~~(ii) “Pressure front” means the zone of elevated pressure that is created by the  
258 injection of the carbon dioxide stream into the subsurface. The pressure front of a carbon dioxide  
259 plume refers to a zone where there is a pressure differential sufficient to cause movement of  
260 injected fluids or formation fluid if a migration pathway or conduit ~~were to exist~~ed.

261  
262       ~~(zz) — “Public hearing” means a non-adversary hearing held by the Administrator or~~  
263 ~~Director of the Department. The hearing is conducted pursuant to Chapter 9 of the Wyoming~~  
264 ~~Department of Environmental Quality Rules of Practice and Procedure.~~

265  
266       ~~(aaa)~~(jj)       “Radioactive waste” means any waste that contains radioactive material in  
267 concentrations that exceed those listed in 10 C.F.R. Part 20, Appendix B, Table II, Column 2 ~~as~~  
268 ~~of March 27, 2006.~~

269  
270       ~~(bbb)~~(kk)       “Receiver” means any zone, interval, formation, or unit in the subsurface  
271 into which a carbon dioxide stream is injected.

272

273 ~~(eee)~~(ll) “Responsible corporate officer” means a president, secretary, treasurer, or  
274 vice president of the corporation in charge of a principal business function, or any other person  
275 who performs similar policy- or decision-making functions for the corporation.  
276

277 ~~(formerly located at Section 5(h)(i))~~(i) For a corporation, ~~a~~“responsible  
278 corporate officer” means:  
279

280 ~~(formerly located at Section 5(h)(i)(A))~~(A) A president, secretary,  
281 treasurer, or vice president of the corporation in charge of a principal business function, or any  
282 other person who performs similar policy\_ or decision\_making functions for the corporation; or  
283

284 ~~(formerly located at Section 5(h)(i)(B))~~(B) The manager of one (1) or  
285 more manufacturing, production, or operating facilities employing more than 250 persons or  
286 having gross annual sales or expenditures exceeding \$25 million (in second quarter 1980  
287 dollars), if authority to sign documents has been assigned or delegated to the manager in  
288 accordance with corporate procedures.  
289

290 ~~(formerly located at Section 5(h)(ii))~~(ii) For a partnership ~~or sole~~  
291 ~~proprietorship~~, “responsible corporate officer” ~~– by a~~ means a general partner, ~~or the proprietor,~~  
292 ~~respectively;~~  
293

294 ~~(formerly located at Section 5(h)(ii))~~(iii) For a ~~partnership or~~ sole  
295 proprietorship ~~–~~, “responsible corporate officer” means by a general partner or the proprietor;  
296 ~~respectively;~~  
297

298 ~~(formerly located at Section 5(h)(iii))~~(iv) For a municipality, state, federal or  
299 other public agency~~–~~, “responsible corporate officer” means by either the principal executive  
300 officer or ranking elected official. For the purposes of this ~~section~~ definition, a principal  
301 executive officer of a ~~F~~ederal agency includes:  
302

303 ~~(formerly located at Section 5(h)(iii)(A))~~(A) The chief executive officer of  
304 the agency; ~~;~~ or  
305

306 ~~(formerly located at Section 5(h)(iii)(B))~~(B) A senior executive officer  
307 having responsibility for the overall operations of a principal geographic unit of the agency ~~(e.g.,~~  
308 ~~Regional Administrators of EPA), such as a Regional Administrator.~~  
309

310 (v) A corporation, municipality, state, federal or other public agency may  
311 authorize an individual or a position that does not meet the requirements of subparagraphs (i),  
312 (ii), (iii), or (iv) of this paragraph to act as a “responsible corporate officer.”  
313

314 ~~(formerly located at Section 5(h)(iv))~~(A) ~~A person is authorized To~~  
315 authorize as a responsible corporate officer ~~only if:~~  
316

317 ~~(formerly located at Section 5(h)(iv)(A))~~(D) ~~The authorization is~~  
318 ~~made in writing by a person described in paragraphs (i) through (iii) in this subsection~~ A person

319 who meets the requirements of subparagraph (i), (ii), (iii), or (iv) of this paragraph shall  
320 authorize the responsible corporate officer in writing;

321  
322 ~~(formerly located at Section 5(h)(iv)(B))(II)~~ The authorization  
323 shall specify either an individual or a position having responsibility for the overall  
324 operation of the regulated facility or activity, such as the position of plant manager, operator of a  
325 well or a well field, superintendent, or position of equivalent responsibility. ~~(A duly authorized~~  
326 ~~representative may thus be either a named individual or any individual occupying a named~~  
327 ~~position); and~~

328  
329 ~~(formerly located at Section 5(h)(iv)(B))(III)~~ The corporation shall  
330 submit the written authorization ~~is submitted~~ to the Administrator.

331  
332 ~~(formerly located at Section 5(h)(v))(B)~~ If an authorization under  
333 ~~paragraph (iv) of this subsection~~ subparagraph (A) of this subparagraph is no longer accurate  
334 because a different individual or position has responsibility for the overall operation of the  
335 facility, ~~a new authorization satisfying the requirements of paragraph (iv) of this subsection must~~  
336 ~~be submitted to the corporation shall notify~~ the Administrator that the authorization is no longer  
337 accurate or shall submit to the Administrator a new authorization satisfying the requirements of  
338 subparagraph (A) of this subparagraph prior to or together with any reports, information, or  
339 applications to be signed by an authorized representative.

340  
341 ~~(ddd)(mm)~~ “Secondarily affected aquifer” means any an aquifer affected by migration  
342 of fluids from an injection facility, ~~when the aquifer is not directly discharged into that does not~~  
343 directly discharge into the secondarily affected aquifer.

344  
345 ~~(eee)(nn)~~ “Site closure” ~~means the point/time, as certified by the Administrator~~  
346 ~~following the requirements of Section 17 of this chapter, at which time the owner or operator of~~  
347 occurs when a geologic sequestration project is released from post-injection site care  
348 responsibilities and the Administrator certifies site closure pursuant to Section 24(b)(iii) of this  
349 Chapter.

350  
351 ~~(fff)~~ “Stratum” (plural strata) means a single sedimentary bed or layer, regardless of  
352 thickness, that consists of generally the same kind of rock material.

353  
354 ~~(ggg)~~ “Subsurface discharge” means ~~a discharge into a receiver.~~

355  
356 ~~(hhh)(oo)~~ “Surface casing” means the first string of well casing to be installed in the  
357 well.

358  
359 ~~(iii)~~ “Transmissive fault or fracture” means ~~a fault or fracture that has sufficient~~  
360 ~~permeability and vertical extent to allow fluids to move beyond the confining zone.~~

361  
362 ~~(jjj)(pp)~~ “Underground injection” means a well injection, a subsurface discharge, a  
363 discharge into a receiver, or the subsurface emplacement of fluids through a well.

364

365 ~~(kkk)~~(qq) ~~“USDW” or~~ “Underground source of drinking water” or “USDW” means  
366 those an aquifers or portions thereof that ~~meet the definition at 40 CFR 144.3 as of November 15,~~  
367 ~~1984. is not an exempted aquifer and:~~

368 (i) Supplies any public water system; or

369  
370 (ii) Contains a sufficient quantity of groundwater to supply a public water  
371 system, and

372  
373 (A) Currently supplies drinking water for human consumption; or

374  
375 (B) Contains fewer than 10,000 mg/L total dissolved solids.

376  
377  
378 ~~(III) “US EPA Administrator” means the Administrator of US EPA in Washington,~~  
379 ~~D.C.~~

380  
381 ~~(mmm) “Vadose Zone” means the unsaturated zone in the earth, between the land~~  
382 ~~surface and the top of the first saturated aquifer. The vadose zone contains water at less than~~  
383 ~~saturated conditions.~~

384  
385 ~~(nnn)~~(rr) “Water quality management area” means the area delineated for the  
386 protection of water quality under a Department-approved plan developed under Sections 303,  
387 208, ~~and~~/or 201 of the ~~Federal~~ Clean Water Act, 33 U.S.C. § 1251 et seq. as amended.

388  
389 ~~(ooo)~~(ss) “Well” means ~~an opening, excavation, shaft, or hole in the ground~~  
390 ~~allowing or used for an underground injection, or for monitoring, or an improved sinkhole; or a~~  
391 ~~subsurface fluid distribution system.;~~

392  
393 (i) An opening, excavation, shaft, or hole in the ground allowing or used for  
394 underground injection or monitoring;

395  
396 (ii) An improved sinkhole; or

397  
398 (iii) A subsurface fluid distribution system.

399  
400 ~~(ppp) “Well injection” means the subsurface emplacement of fluids through a well.~~

401  
402 ~~(qqq)~~(tt) “Well plug” means a watertight and gastight seal installed in a borehole or  
403 well to prevent movement of fluids.

404  
405 ~~(rrr)~~(uu) “Well stimulation” means ~~several~~ any processes used to clean the  
406 wellbore, enlarge channels, ~~and~~ or increase pore space in the interval to be injected and includes  
407 surging, jetting, blasting, acidizing, and hydraulic fracturing.

408  
409 ~~(sss) “Well monitoring” means the measurement by on-site instruments or laboratory~~  
410 ~~methods, of the quality of water in a well.~~

411  
412 ~~(vv)~~ “Workover” means to pull the tubing, packer, or any downhole hardware  
413 from the well and inspect, replace, or refurbish it prior to placing that hardware back in service,  
414 or to enter the hole with any drilling tool.

415  
416 ~~(ww)~~ “Wellhead protection area” means the area delineated for the protection of  
417 a public water supply utilizing a groundwater source under a Department-approved plan  
418 developed pursuant to Section ~~1528~~ 1428 of the ~~federal~~ Safe Drinking Water Act, 42 U.S.C. §  
419 300h-7, or Section 1453 of the Safe Drinking Water Act, 42 U.S.C. § 300j-13.

### 421 **Section 3. Applicability.**

422  
423 ~~(formerly located at Section 4(a)(ii))~~(a) Construction, installation, operation,  
424 monitoring, testing, plugging, post-injection site care, and modification ~~to, or~~ of, any Class VI  
425 well shall be allowed only in accordance with ~~these regulations~~ this Chapter.

426  
427 ~~(a)(b) These regulations shall apply~~ This chapter applies to all Class VI wells ~~used to~~  
428 ~~inject carbon dioxide streams for the purpose of geologic sequestration.~~

429  
430 (i) This Chapter applies to owners, operators, and permittees of Class VI  
431 wells.

432  
433 ~~(b)(ii) In addition, these regulations shall apply to owners and operators of~~ This  
434 Chapter applies to any Class I industrial, Class II, or Class V experimental or demonstration  
435 carbon dioxide injection projects ~~who seek to apply for a Class VI geologic sequestration permit~~  
436 ~~for their well or wells.~~ that is converted to a Class VI well. A permitted Class I, Class II, or Class  
437 V injection well may be converted to a Class VI well by obtaining a Class VI permit pursuant to  
438 this Chapter.

439  
440 ~~(i)(A) Owners and/or operators of~~ To convert a permitted Class I, Class  
441 II, or Class V injection well ~~(s) seeking to convert their well(s) to a Class VI well,~~ the applicant  
442 shall:

443  
444 ~~(i)(I) a~~ Apply for a Class VI permit; and

445  
446 ~~(i)(II) shall d~~ Demonstrate to the Administrator that the well(s)  
447 was/were engineered and constructed to meet the requirements ~~outlined in Section 9(a) of~~  
448 Section 14(a) of ~~of these regulations~~ this Chapter; and

449  
450 ~~(i)(III) ensure protection of USDWs, In~~ lieu of ~~meeting the~~  
451 requirements of Section ~~9(b) 14(b) and Section 11(a) 17(a) of this e~~ Chapter, demonstrate to the  
452 Administrator that the well will ensure protection of USDWs and will not endanger any USDW.

453  
454 ~~(i)(B) By~~ After December 10, 2011, owners or operators of ~~either~~ Class I  
455 wells previously permitted for the purpose of geologic sequestration ~~or and~~ Class V experimental  
456 technology wells no longer being used for experimental purposes that will continue injection of

457 carbon dioxide for the purpose of geologic sequestration ~~must~~ shall apply for obtain a Class VI  
458 permit.

459  
460 ~~(ii)~~ (C) If the Administrator determines that a converted Class I, Class II,  
461 or Class V injection well will not endanger any USDWs ~~will not be endangered, such wells are~~  
462 ~~exempt, at the Administrator's discretion, may exempt the well~~ from the requirements of Section  
463 ~~914(b)(i) through - (vii) and Section 11-17(a)(i) through - (v) of this eChapter.~~

464  
465 ~~(formerly located at Section 1)~~ (c) The injection of carbon dioxide for purposes of a  
466 project for enhanced recovery of oil or other minerals approved by the Wyoming Oil and Gas  
467 Conservation Commission ~~shall is not be~~ subject to the provisions of this ~~regulation~~ Chapter  
468 unless the operator converts to geologic sequestration upon the cessation of oil and gas recovery  
469 operations or as otherwise required by the Commission or Director.

470  
471 ~~(e)~~ (d) For owners ~~and or~~ operators of Class II ~~operations~~ wells described in W.S. § 35-  
472 11-313(c):

473  
474 (i) The Director's determination of primary purpose and increased risk to a  
475 USDW shall include, at a minimum, an evaluation of the following criteria:

- 476  
477 (A) Increase in reservoir pressure within the injection zone(s).  
478  
479 (B) Increase in carbon dioxide injection rates.  
480  
481 (C) Decrease in reservoir production rates.  
482  
483 (D) Distance between the injection zone(s) and USDWs.  
484  
485 (E) Suitability of the Class II area of review delineation.  
486  
487 (F) Quality of abandoned well plugs within the area of review.  
488  
489 (G) The owner's and/or operator's plan for recovery of carbon dioxide  
490 at the cessation of injection.  
491  
492 (H) The source and properties of the injected carbon dioxide.  
493  
494 (I) Any additional site-specific factors as determined by the  
495 Administrator.

496  
497 (ii) An owner ~~and/or~~ operator may apply for a Class VI permit upon  
498 recommendation by the Oil and Gas Conservation Commission supervisor, or by the  
499 Commission, that regulation of a Class II enhanced recovery operation be transferred to the  
500 Department.  
501

502 (iii) An owner ~~and~~/or operator of a Class II enhanced recovery operation shall  
503 apply for a Class VI permit within thirty (30) days of receipt of written notice from the Director  
504 that a Class VI permit is required.

505  
506 ~~(d) — These regulations do not apply to the injection of any carbon dioxide stream that~~  
507 ~~meets the definition of a hazardous waste.~~

508  
509 ~~(e) — Compliance with a permit during its term constitutes compliance, for purposes of~~  
510 ~~enforcement, with Part C of the SDWA. However, a permit may be modified, revoked and~~  
511 ~~reissued, or terminated during its term for cause as set forth in Section 4 of this chapter.~~

512  
513 ~~(f) — The requirements to maintain and implement approved plans, and maintain~~  
514 ~~adequate financial responsibility, are directly enforceable regardless of whether the requirements~~  
515 ~~are conditions of the permit.~~

516  
517 **Section 4. Permits Required; Processing of Permits; Requirements Applicable to**  
518 **All Permits.**

519  
520 ~~(a) — Permits required:~~

521  
522 ~~————— (i) — Owners or operators of Class VI wells must obtain a permit in accordance~~  
523 ~~with these regulations. Class VI wells are not authorized by rule to inject.~~

524  
525 ~~————— (ii) — Construction, installation, operation, monitoring, testing, plugging, post-~~  
526 ~~injection site care, and modification to, or of, any Class VI well shall be allowed only in~~  
527 ~~accordance with these regulations.~~

528  
529 ~~————— (iii) — Injections from Class VI wells shall be restricted to those receivers~~  
530 ~~defined as Class V (Hydrocarbon Commercial) or Class VI groundwaters by the Department~~  
531 ~~pursuant to Water Quality Rules and Regulations Chapter 8.~~

532  
533 ~~————— (iv) — A separate permit to construct is not required under Water Quality Rules~~  
534 ~~and Regulations Chapter 3 for any Class VI facility.~~

535  
536 ~~————— (v) — Permits for Class VI wells shall be issued for the operating life of the~~  
537 ~~facility and extend through the post injection site care period until the geologic sequestration~~  
538 ~~project is closed in accordance with Department rules and regulations.~~

539  
540 ~~————— (vi) — Permits may be issued for individual Class VI wells and shall not be~~  
541 ~~issued on an area basis for multiple points of discharge operated by the same person.~~

542  
543 ~~————— (vii) — Each permit shall be reviewed by the Department at least once every five~~  
544 ~~(5) years to determine whether it should be modified, revoked and reissued, terminated or a~~  
545 ~~minor modification made pursuant to this chapter.~~

546

547 ~~\_\_\_\_\_ (viii) Sections of permit applications filed under this chapter that represent~~  
548 ~~engineering work shall be sealed, signed, and dated by a licensed professional engineer as~~  
549 ~~required by W.S. § 33-29-601.~~

550  
551 ~~\_\_\_\_\_ (ix) Sections of permit applications filed under this chapter that represent~~  
552 ~~geologic work shall be sealed, signed, and dated by a licensed professional geologist as required~~  
553 ~~by W.S. § 33-41-115.~~

554  
555 ~~(b)(a)~~ The following Ppermit processing procedures are applicable to all Class VI  
556 ~~facilities, individual, and general~~ permits:

557  
558 ~~(b)(i)(i)~~ (i) The applicant shall submit the permit application to the Division in  
559 a format required by the Administrator.

560  
561 ~~(b)(ii)(ii)~~ (ii) Within sixty (60) days of submission of ~~the~~ an application, the  
562 Administrator shall make an initial determination of completeness. An application shall be  
563 determined complete when the Administrator receives an application and any supplemental  
564 information necessary to determine compliance with ~~these regulations~~ this Chapter. The  
565 completeness of any application for a permit shall be judged independently of the status of any  
566 other permit application or permit for the same facility or activity.

567  
568 ~~(b)(iii)(iii)~~ (iii) Re-submittal of information by an applicant for an incomplete  
569 application will ~~begin~~ restart the process described in this ~~s~~SSection.

570  
571 ~~(b)(iv)(iv)~~ (iv) At the end of any 60-day review period where an application is  
572 determined complete, the Administrator shall ~~prepare a fact sheet on the proposed operation and~~  
573 ~~provide public notice pursuant to Section of this chapter.;~~

574  
575 ~~(b)(iv)(A)~~ (A) Pprepare a draft permit for issuance or denial.;

576  
577 ~~(b)(iv)(B)~~ (B) Pprepare a fact sheet on the proposed operation.; and

578  
579 ~~(b)(iv)(C)~~ (C) Pprovide public notice pursuant to Section ~~20-27~~ of this  
580 eChapter.; and

581 ~~(formerly (b)(xxxiv))(D)~~ (D) Notify in writing, A list of the contacts,  
582 ~~submitted to the Administrator, for those any Tribes identified to be within the area of review of~~  
583 ~~the geologic sequestration project based on information provided in subparagraphs (b)(vii),~~  
584 ~~(b)(vii)(A), (b)(vii)(B) of this section pursuant to Section 10(b)(xxxiv) of this Chapter; and.~~

585  
586 ~~(A)~~ (A) ~~If the Administrator tentatively decides to deny the permit~~  
587 ~~application, he or she shall issue a notice of intent to deny. A notice of intent to deny the permit~~  
588 ~~application is a type of draft permit that follows the same procedures as any draft permit~~  
589 ~~prepared under this section.~~

590

591 ~~(B) — If the Administrator’s final decision is that the tentative decision to~~  
592 ~~deny the permit application was incorrect, he or she shall withdraw the notice of intent to deny~~  
593 ~~and proceed to prepare a draft permit under Section 20(b) of this chapter.~~

594  
595 ~~(v) — The Administrator may deny an individual permit for any of the following~~  
596 ~~reasons:~~

597  
598 ~~————— (A) — The application is incomplete;~~

599  
600 ~~————— (B) — The project, if constructed and/or operated, will violate applicable~~  
601 ~~state surface or groundwater standards;~~

602  
603 ~~————— (C) — The application proposes the construction or operation of a project~~  
604 ~~that does not meet the requirements of this chapter;~~

605  
606 ~~————— (D) — The permitted facility would be in conflict with or is in conflict~~  
607 ~~with a State approved local wellhead protection plan, State approved local source water~~  
608 ~~protection plan, or State approved water quality management plan; or~~

609  
610 ~~————— (E) — Other justifiable reasons necessary to carry out the provisions of~~  
611 ~~the Wyoming Environmental Quality Act.~~

612  
613 ~~(vi) — Permits may be modified, revoked and reissued, or terminated either in~~  
614 ~~response to a petition from any interested person (including the permittee) or upon the~~  
615 ~~Administrator’s initiative. However, permits may only be modified, revoked and reissued, or~~  
616 ~~terminated for the reasons specified in Section 4(b) of this chapter. All requests shall be in~~  
617 ~~writing and shall contain facts or reasons supporting the request.~~

618  
619 ~~————— (A) — If the Administrator decides the petition is not justified, the~~  
620 ~~petitioner shall be sent a brief written response giving the reason for the decision. A request for~~  
621 ~~modification, revocation and reissuance, or termination shall be considered denied if the~~  
622 ~~Administrator takes no action within sixty (60) days after receiving the written request. Denials~~  
623 ~~of requests for modification, revocation and reissuance, or termination are not subject to public~~  
624 ~~notice and comment. Denials by the Administrator may be appealed for hearing to the~~  
625 ~~Environmental Quality Council by a letter briefly setting forth the relevant facts.~~

626  
627 ~~(vii) — The Administrator may modify a permit when:~~

628  
629 ~~————— (A) — Any material or substantial alterations or additions to the facility~~  
630 ~~occur after permitting or licensing that justify the application of permit conditions that are~~  
631 ~~different or absent in the existing permit;~~

632  
633 ~~————— (B) — Any modification in the operation of the facility is capable of~~  
634 ~~causing or increasing pollution in excess of applicable standards or permit conditions;~~

635

636 ~~\_\_\_\_\_ (C) Information warranting modification is discovered after the~~  
637 ~~operation has begun that would have justified the application of different permit conditions at the~~  
638 ~~time of permit issuance;~~

639 ~~\_\_\_\_\_ (D) Regulations or standards upon which the permit was based have~~  
641 ~~changed by promulgation of amended standards or regulations or by judicial decision after the~~  
642 ~~permit was issued;~~

643 ~~\_\_\_\_\_ (E) Cause exists for termination, as described in this section, but the~~  
644 ~~Department determines that modification is appropriate; or~~

645 ~~\_\_\_\_\_ (F) Modification is necessary to comply with applicable statutes,~~  
646 ~~standards, or regulations.~~

647 ~~\_\_\_\_\_ (viii) The Administrator may modify a permit whenever the Administrator~~  
648 ~~determines that permit changes are necessary based on:~~

649 ~~\_\_\_\_\_ (A) Area of review reevaluations under Section 8(d)(i) of this chapter;~~

650 ~~\_\_\_\_\_ (B) Any amendments to the testing and monitoring plan under Section~~  
651 ~~14(b)(xii) of this chapter;~~

652 ~~\_\_\_\_\_ (C) Any amendments to the injection well-plugging plan under Section~~  
653 ~~16(e) of this chapter;~~

654 ~~\_\_\_\_\_ (D) Any amendments to the post-injection site care and site closure~~  
655 ~~plan under Section 17(a)(iv) of this chapter;~~

656 ~~\_\_\_\_\_ (E) Any amendments to the emergency and remedial response plan~~  
657 ~~under Section 18(a)(i) of this chapter;~~

658 ~~\_\_\_\_\_ (F) A review of monitoring and/or testing results conducted in~~  
659 ~~accordance with permit requirements; or~~

660 ~~\_\_\_\_\_ (G) A determination that the injectate is a hazardous waste as defined~~  
661 ~~in 40 CFR § 261.3 either because the definition has been revised, or because a previous~~  
662 ~~determination has been changed.~~

663 ~~\_\_\_\_\_ (ix) Suitability of the facility location will not be considered at the time of~~  
664 ~~permit modification or revocation and reissuance unless new information or standards indicate~~  
665 ~~that a threat to human health or the environment exists that was unknown at the time of permit~~  
666 ~~issuance.~~

667 ~~\_\_\_\_\_ (x) Minor modifications of permits may occur with the consent of the~~  
668 ~~permittee without following the public notice requirements. Minor modifications will become~~

681 ~~final twenty (20) days from the date of receipt of such notice. For the purposes of this chapter,~~  
682 ~~minor modifications may only:~~

683  
684 ~~\_\_\_\_\_ (A) \_\_\_\_\_ Correct typographical errors;~~

685  
686 ~~\_\_\_\_\_ (B) \_\_\_\_\_ Require more frequent monitoring or reporting by the permittee;~~

687  
688 ~~\_\_\_\_\_ (C) \_\_\_\_\_ Change an interim compliance date in a schedule of compliance,~~  
689 ~~provided the new date is not more than 120 days after the date specified in the existing permit~~  
690 ~~and does not interfere with attainment of the final compliance date requirement;~~

691  
692 ~~\_\_\_\_\_ (D) \_\_\_\_\_ Allow for a change in ownership or operational control of a facility~~  
693 ~~where the Administrator determines that no other change in the permit is necessary, provided~~  
694 ~~that a written agreement containing a specific date for transfer of permit responsibility, coverage,~~  
695 ~~and liability between the current and new permittees have been submitted to the Administrator;~~

696  
697 ~~\_\_\_\_\_ (E) \_\_\_\_\_ Change quantities or types of fluids injected that are within the~~  
698 ~~capacity of the facility as permitted and, in the judgment of the Administrator, would not~~  
699 ~~interfere with the operation of the facility or its ability to meet conditions described in the permit~~  
700 ~~and would not change its classification;~~

701  
702 ~~\_\_\_\_\_ (F) \_\_\_\_\_ Change construction requirements approved by the Administrator~~  
703 ~~pursuant to subparagraphs (c)(i)(BB)(I) through (III) of this section provided that any such~~  
704 ~~alteration shall comply with the requirements of this chapter;~~

705  
706 ~~\_\_\_\_\_ (G) \_\_\_\_\_ Amend a plugging and abandonment plan that has been updated~~  
707 ~~under Section 16 of this chapter; or~~

708  
709 ~~\_\_\_\_\_ (H) \_\_\_\_\_ Amend a Class VI injection well testing and monitoring plan,~~  
710 ~~plugging plan, post injection site care and site closure plan, or emergency and remedial response~~  
711 ~~plan where the modifications merely clarify or correct the plan, as determined by the~~  
712 ~~Administrator.~~

713  
714 ~~\_\_\_\_\_ (xi) \_\_\_\_\_ The Administrator may revoke and reissue or terminate a permit for any of~~  
715 ~~the following reasons:~~

716  
717 ~~\_\_\_\_\_ (A) \_\_\_\_\_ Noncompliance with terms and conditions of the permit;~~

718  
719 ~~\_\_\_\_\_ (B) \_\_\_\_\_ Failure in the application or during the issuance process to disclose~~  
720 ~~fully all relevant facts, or misrepresentation of any relevant facts at any time; or~~

721  
722 ~~\_\_\_\_\_ (C) \_\_\_\_\_ A determination that the activity endangers human health or the~~  
723 ~~environment and can only be regulated to acceptable levels by a permit modification or~~  
724 ~~termination.~~

725

726 ~~————— (xii) — The Administrator may modify a permit to resolve issues that could lead~~  
727 ~~to the revocation of the permit under Section 4(b) of this chapter. The Administrator, as part of~~  
728 ~~any notification of intent to terminate a permit, shall order the permittee to proceed with~~  
729 ~~reclamation on a reasonable time period.~~

730  
731 ~~————— (xiii) — If the Administrator tentatively decides to modify or revoke and reissue a~~  
732 ~~permit, a draft permit incorporating the proposed changes shall be prepared. The Administrator~~  
733 ~~may request additional information and, in the case of a modified permit, may require the~~  
734 ~~submission of an updated application. In the case of revoked and reissued permits, the~~  
735 ~~Administrator shall require the submission of a new application.~~

736  
737 ~~————— (xiv) — In a permit modification under Section 4(b) of this chapter, only those~~  
738 ~~conditions to be modified shall be reopened when a new draft permit is prepared. All other~~  
739 ~~aspects of the existing permit shall remain in effect for the duration of the unmodified permit and~~  
740 ~~the modified permit shall expire on the date when the original permit would have expired. When~~  
741 ~~a permit is revoked and reissued under this section, the entire permit is reopened as if the permit~~  
742 ~~has expired and is being reissued. During any revocation and reissuance proceeding, the~~  
743 ~~permittee shall comply with all conditions of the existing permit until a new final permit is~~  
744 ~~issued.~~

745  
746 ~~————— (xv) — Permit modifications, revocations, or terminations shall be developed as a~~  
747 ~~draft permit and are subject to the public notice and hearing requirements outlined in Section 20~~  
748 ~~of this chapter.~~

749  
750 ~~————— (xvi) — Transfer of a permit is allowed only upon approval by the Administrator.~~  
751 ~~When a permit transfer occurs pursuant to this section, the permit rights of the previous permittee~~  
752 ~~will automatically terminate.~~

753  
754 ~~————— (A) — The proposed permit holder shall apply in writing as though that~~  
755 ~~person was the original applicant for the permit and shall further agree to be bound by all of the~~  
756 ~~terms and conditions of the permit.~~

757  
758 ~~————— (B) — Transfer will not be allowed if the permittee is in noncompliance~~  
759 ~~with any term and conditions of the permit, unless the transferee agrees to bring the facility back~~  
760 ~~into compliance with the permit.~~

761  
762 ~~————— (C) — When a permit transfer occurs, the Administrator may modify a~~  
763 ~~permit pursuant to this section. The Administrator shall provide public notice pursuant to Section~~  
764 ~~20 of this chapter for any modification other than a minor modification defined by this section.~~

765  
766 ~~————— (D) — A permit may be transferred by the permittee to a new owner or~~  
767 ~~operator only if the permit has been modified or revoked and reissued (under paragraph (xiii) of~~  
768 ~~this subsection), or a minor modification made (under paragraph (xii) of this subsection), to~~  
769 ~~identify the new permittee and incorporate such other requirements as may be necessary under~~  
770 ~~the Safe Drinking Water Act.~~

771

772 ~~(formerly Section 4(b)(iv))~~(b) At the end of any 60-day review period where an  
773 application is determined complete, ~~If~~ the Administrator intends to modify, terminate, revoke, or  
774 reissue a permit, the Administrator shall prepare a draft permit ~~for issuance or denial, prepare a~~  
775 ~~fact sheet on the proposed operation, incorporating the proposed changes~~ and provide public  
776 notice pursuant to Section ~~20~~ 27 of this ~~e~~Chapter.

777  
778 ~~(A)——If the Administrator tentatively decides to deny the permit~~  
779 ~~application, he or she shall issue a notice of intent to deny. A notice of intent to deny the permit~~  
780 ~~application is a type of draft permit that follows the same procedures as any draft permit~~  
781 ~~prepared under this section.~~

782  
783 ~~————(B)——If the Administrator’s final decision is that the tentative decision to~~  
784 ~~deny the permit application was incorrect, he or she shall withdraw the notice of intent to deny~~  
785 ~~and proceed to prepare a draft permit under Section 20(b) of this chapter.~~

786  
787 ~~(formerly Section 5(e))~~(c) Prior to ~~granting approval for the operation of~~ issuing a  
788 permit for a Class VI well, the Administrator shall consider ~~the following information:~~

789  
790 ~~(formerly Section 5(e)(i))~~(i) The final area of review based on modeling, using  
791 data obtained during logging and testing of the well and the formation as required by  
792 subparagraphs ~~(b)(xv), (b)(xxiii), (b)(xxiv), and (e)(iii) of this section~~ (b)(xviii), (b)(xix),  
793 (b)(xxvii), and (b)(xxviii) of Section 10 of this Chapter;

794  
795 ~~(formerly Section 5(e)(ii))~~(ii) Any relevant updates, based on data obtained  
796 during logging and testing of the well and the formation as required by subparagraphs ~~(b)(xv),~~  
797 ~~(b)(xxiii), (b)(xxiv), and (e)(iii) of this section,~~ (b)(xviii), (b)(xix), (b)(xxvii), and (b)(xxviii) of  
798 Section 10 of this Chapter, to the information on the geologic structure and hydrogeologic  
799 properties of the proposed storage site and overlying formations, submitted to satisfy the  
800 requirements of subparagraph ~~(b)(ix) of this section~~ (b)(xi) of Section 10 of this Chapter;

801  
802 ~~(formerly Section 5(e)(iii))~~(iii) The results of the formation testing program  
803 required by ~~paragraph (b)(xvii) of this section~~ subparagraph (b)(xix) of Section 10 of this  
804 Chapter;

805  
806 ~~(formerly Section 5(e)(iv))~~(iv) Final injection well construction procedures  
807 that meet the requirements of Section ~~9~~ 14 of this ~~e~~Chapter;

808  
809 ~~(formerly Section 5(e)(v))~~(v) Any updates to the proposed area of review and  
810 corrective action plan, testing and monitoring plan, injection well-plugging plan, post-injection  
811 site care and site closure plan, or the emergency and remedial response plan submitted under  
812 ~~paragraph (b)(xxx) of this section~~ Section 10(b) of this chapter, ~~which that~~ are necessary to  
813 address new information collected during logging and testing of the well and the formation as  
814 required by ~~all paragraphs of this section; and~~ Section 10 of this Chapter.

815  
816 ~~(formerly Section 4(b)(vi))~~(d) Permits may be modified, revoked and reissued, or  
817 terminated either in response to a petition from any interested person (including the permittee) or

818 upon the Administrator 's initiative. ~~However, permits may only be modified, revoked and~~  
819 ~~reissued, or terminated for the reasons specified in Section 4(b) of this chapter.~~

820  
821 ~~(formerly Section 4(b)(vi))~~(i) All ~~requests~~ petitions to modify, revoke and reissue,  
822 or terminate a permit shall be in writing and shall contain facts or reasons supporting the request.

823  
824 ~~(formerly Section 4(b)(vi)(A))~~(ii) If the Administrator decides ~~the a~~ petition to  
825 modify, revoke and reissue, or terminate a permit is not justified, the Administrator shall send the  
826 petitioner ~~shall be sent~~ a brief written response giving the reason for the decision. A ~~request~~  
827 petition for modification, revocation and reissuance, or termination shall be considered denied if  
828 the Administrator takes no action within sixty (60) days after receiving the written request.

829  
830 ~~(formerly Section 4(b)(vi)(A))~~(iii) Denials of ~~requests~~ petitions for  
831 modification, revocation and reissuance, or termination are not subject to public notice and  
832 comment. ~~Denials by the Administrator may be appealed for hearing to the Environmental~~  
833 ~~Quality Council by a letter briefly setting forth the relevant facts.~~

834  
835 ~~(formerly Section 4(a)(vii))~~(e) Each permit shall be reviewed by ~~t~~The Department  
836 shall review each permit at least once every five (5) years to determine whether it should be  
837 modified, revoked and reissued, or terminated ~~or a minor modification made pursuant to this~~  
838 ~~chapter.~~

839  
840 ~~(e) — Permit conditions:~~

841  
842 ~~————— (i) — Permit conditions shall be incorporated either expressly or by reference. If~~  
843 ~~incorporated by reference, a specific citation to the incorporated conditions must be given in the~~  
844 ~~permit. All individual permits issued under this chapter shall contain the following conditions:~~

845  
846 ~~————— (A) — A requirement that the permittee comply with all conditions of the~~  
847 ~~permit, and any permit noncompliance constitutes a violation of these regulations and is grounds~~  
848 ~~for enforcement action, permit termination, revocation and reissuance, or modification, or for~~  
849 ~~denial of a permit renewal application;~~

850  
851 ~~————— (B) — A requirement that if the permittee wishes to continue injection~~  
852 ~~activity after the expiration date of the permit, the permittee must apply to the Administrator for,~~  
853 ~~and obtain, a new permit prior to expiration of the existing permit;~~

854  
855 ~~————— (C) — A stipulation that it shall not be a defense for a permittee in an~~  
856 ~~enforcement action that it would have been necessary to halt or reduce the permitted activity in~~  
857 ~~order to maintain compliance with the conditions of this permit;~~

858  
859 ~~————— (D) — A requirement that the permittee shall take all reasonable steps to~~  
860 ~~minimize or correct any adverse impact on the environment resulting from noncompliance with~~  
861 ~~this permit;~~

862

863 ~~\_\_\_\_\_ (E) A requirement that the permittee properly operate and maintain all~~  
864 ~~facilities and systems of treatment and control, and related appurtenances, that are installed or~~  
865 ~~used by the permittee to achieve compliance with the conditions of this permit. Proper operation~~  
866 ~~and maintenance includes effective performance, adequate funding and operator staffing and~~  
867 ~~training, and adequate laboratory and process controls including appropriate quality assurance~~  
868 ~~procedures. This provision requires the operation of back up or auxiliary facilities or similar~~  
869 ~~systems only when necessary to achieve compliance with the conditions of the permit;~~

870  
871 ~~\_\_\_\_\_ (F) A stipulation that the filing of a request by the permittee, or at the~~  
872 ~~instigation of the Administrator, for a permit modification, revocation, termination, or~~  
873 ~~notification of planned changes or anticipated non-compliance, shall not stay any permit~~  
874 ~~condition;~~

875  
876 ~~\_\_\_\_\_ (G) A stipulation that this permit does not convey any property rights~~  
877 ~~of any sort, or any exclusive privilege;~~

878  
879 ~~\_\_\_\_\_ (H) A stipulation that the permittee shall furnish to the Administrator,~~  
880 ~~within a specified time, any information that the Administrator may request to determine whether~~  
881 ~~cause exists for modifying, revoking and reissuing, or terminating the permit, or to determine~~  
882 ~~compliance with the permit. The permittee shall also furnish to the Administrator, upon request,~~  
883 ~~copies of records required to be kept by the permit;~~

884  
885 ~~\_\_\_\_\_ (I) A requirement that the permittee shall allow the Administrator, or~~  
886 ~~an authorized representative of the Administrator, upon the presentation of credentials, during~~  
887 ~~normal working hours, to enter the premises where a regulated facility is located, or where~~  
888 ~~records are kept under the conditions of this permit, and~~

889  
890 ~~\_\_\_\_\_ (I) Inspect the discharge and related facilities, practices, or~~  
891 ~~operations regulated or required under this permit;~~

892  
893 ~~\_\_\_\_\_ (II) Review and copy reports and records required by the~~  
894 ~~permit;~~

895  
896 ~~\_\_\_\_\_ (III) Collect fluid samples for analysis for the purposes of~~  
897 ~~assuring permit compliance or as otherwise authorized by the SDWA, any substances or~~  
898 ~~parameters at any location;~~

899  
900 ~~\_\_\_\_\_ (IV) Measure and record water levels; and~~

901  
902 ~~\_\_\_\_\_ (V) Perform any other function authorized by law or regulation.~~

903  
904 ~~\_\_\_\_\_ (J) A requirement that the permittee furnish any information necessary~~  
905 ~~to establish a monitoring program pursuant to Section 14 of this chapter. Conditions shall~~  
906 ~~specify;~~

907

908 ~~\_\_\_\_\_ (I) Required monitoring including type, intervals, and~~  
909 ~~frequency sufficient to yield data that are representative of the monitored activity including when~~  
910 ~~appropriate, continuous monitoring;~~

911 ~~\_\_\_\_\_ (II) Requirements concerning the proper use, maintenance, and~~  
912 ~~installation, when appropriate, of monitoring equipment or methods, including biological~~  
913 ~~monitoring methods when appropriate; and~~

914 ~~\_\_\_\_\_ (III) Applicable reporting requirements based upon the impact~~  
915 ~~of the regulated activity and as specified in Section 15 of this chapter. Reporting shall be no less~~  
916 ~~frequent than specified in the above regulations.~~

917 ~~\_\_\_\_\_ (K) A requirement that all samples and measurements taken for the~~  
918 ~~purpose of monitoring shall be representative of the monitored activity and records of all~~  
919 ~~monitoring information be retained by the permittee. The monitoring information to be retained~~  
920 ~~shall be that information stipulated in the monitoring program established pursuant to the criteria~~  
921 ~~in Section 14 of this chapter;~~

922 ~~\_\_\_\_\_ (L) A requirement that all applications, reports, and other information~~  
923 ~~submitted to the Administrator contain certifications as required in Section 5(i) of this chapter,~~  
924 ~~and be signed by a person who meets the requirements to sign permit applications found in~~  
925 ~~Section 5(h), or for routine reports, a duly authorized representative;~~

926 ~~\_\_\_\_\_ (M) A requirement that the permittee give advance notice to the~~  
927 ~~Administrator as soon as possible of any planned physical alteration or additions, other than~~  
928 ~~authorized operation and maintenance, to the permitted facility and receive authorization prior to~~  
929 ~~implementing the proposed alteration or addition;~~

930 ~~\_\_\_\_\_ (N) A requirement that any modification that may result in a violation~~  
931 ~~of a permit condition shall be reported to the Administrator, and any modification that will result~~  
932 ~~in a violation of a permit condition shall be reported to the Administrator through the submission~~  
933 ~~of a new or amended permit application;~~

934 ~~\_\_\_\_\_ (O) A requirement that any transfer of a permit must first be approved~~  
935 ~~by the Administrator, and that no transfer will be approved if the facility is not in compliance~~  
936 ~~with the existing permit unless the proposed permittee agrees to bring the facility into~~  
937 ~~compliance;~~

938 ~~\_\_\_\_\_ (P) A requirement that monitoring results shall be reported at the~~  
939 ~~intervals specified elsewhere in the permit;~~

940 ~~\_\_\_\_\_ (Q) A requirement that reports of compliance or non-compliance, or~~  
941 ~~any progress reports on interim and final requirements contained in any compliance schedule, if~~  
942 ~~one is required by the Administrator, shall be submitted no later than thirty (30) days following~~  
943 ~~each schedule date;~~

944

954 ~~\_\_\_\_\_ (R) A requirement that the permittee shall report:~~

955

956 ~~\_\_\_\_\_ (I) Any monitoring or other information that indicates that any~~  
957 ~~contaminant may cause an endangerment to a USDW or indicates that the injected carbon~~  
958 ~~dioxide stream, displaced formation fluids, or associated pressure front may endanger a USDW~~  
959 ~~or threaten human health, safety, or the environment. In addition, the owner or operator shall:~~

960

961 ~~\_\_\_\_\_ (1.) Immediately cease injection;~~

962

963 ~~\_\_\_\_\_ (2.) Take all steps reasonably necessary to identify and~~  
964 ~~characterize any release; and~~

965

966 ~~\_\_\_\_\_ (3.) Notify the Administrator within twenty-four (24)~~  
967 ~~hours.~~

968

969 ~~\_\_\_\_\_ (II) Any noncompliance with a permit condition or malfunction~~  
970 ~~of the injection system that may cause fluid migration into or between USDWs or if an excursion~~  
971 ~~is discovered. It shall be orally reported to the Administrator within twenty-four (24) hours from~~  
972 ~~the time the permittee becomes aware of the circumstances, and a written submission shall be~~  
973 ~~provided within five (5) days of the time the permittee becomes aware of any excursion or~~  
974 ~~indication that a contaminant may cause an endangerment to a USDW. The written submission~~  
975 ~~shall contain:~~

976

977 ~~\_\_\_\_\_ (1.) A description of the noncompliance and its cause;~~

978

979 ~~\_\_\_\_\_ (2.) The period of noncompliance, including exact dates~~  
980 ~~and times, and, if the noncompliance has not been controlled, the anticipated time it is expected~~  
981 ~~to continue; and~~

982

983 ~~\_\_\_\_\_ (3.) Steps taken or planned to reduce, eliminate, and~~  
984 ~~prevent reoccurrence of the noncompliance.~~

985

986 ~~\_\_\_\_\_ (III) In addition, if an excursion is discovered the owner or~~  
987 ~~operator shall provide written notice to all surface owners, mineral claimants, mineral owners,~~  
988 ~~lessees and other owners of record of subsurface interests within thirty (30) days of discovery.~~

989

990 ~~\_\_\_\_\_ (S) A requirement that the permittee report all instances of~~  
991 ~~noncompliance not already required to be reported under paragraphs (c)(i)(Q) through (R) of this~~  
992 ~~section, at the time monitoring reports are submitted. The reports shall contain the information~~  
993 ~~listed in paragraph (c)(i)(R) of this section;~~

994

995 ~~\_\_\_\_\_ (T) A requirement that if the permittee becomes aware that it failed to~~  
996 ~~submit any relevant facts in a permit application, or submitted incorrect information in a permit~~  
997 ~~application or in any report to the Administrator, the permittee shall promptly submit such facts~~  
998 ~~or information;~~

999

1000 ~~————— (U) — A requirement that the injection facility meet construction~~  
1001 ~~requirements outlined in Section 9 of this chapter, and that the permittee submit a notice of~~  
1002 ~~completion of construction to the Administrator; and allow for inspection of the facility upon~~  
1003 ~~completion of construction, prior to commencing any injection activity;~~

1004  
1005 ~~————— (V) — A requirement that the permittee notify the Administrator at such~~  
1006 ~~times as the permit requires before conversion or abandonment of the facility;~~

1007  
1008 ~~————— (W) — A requirement that injection may not commence until construction~~  
1009 ~~is complete. Construction is complete when:~~

1010  
1011 ~~————— (I) — The permittee has submitted a notice of completion of~~  
1012 ~~construction to the Administrator; and~~

1013  
1014 ~~————— (II) — The Administrator has inspected or otherwise reviewed the~~  
1015 ~~injection well and finds it is in compliance with the conditions of the permit, or the permittee has~~  
1016 ~~not received notice from the Administrator of their intent to inspect or otherwise review the~~  
1017 ~~injection well within thirteen (13) days of the date of the notice in subparagraph (U) of this~~  
1018 ~~paragraph, in which case prior inspection or review is waived and the permittee may commence~~  
1019 ~~injection. The Administrator shall include in his notice a reasonable time period in which they~~  
1020 ~~shall inspect the well.~~

1021  
1022 ~~————— (X) — A requirement that the owner or operator of a Class VI well~~  
1023 ~~permitted under this part shall establish mechanical integrity prior to commencing injection or on~~  
1024 ~~a schedule determined by the Administrator. Thereafter, the owner or operator of Class VI wells~~  
1025 ~~must maintain mechanical integrity as defined in Section 13 of this chapter;~~

1026  
1027 ~~————— (Y) — A requirement that when the Administrator determines that a Class~~  
1028 ~~VI well lacks mechanical integrity pursuant to Section 13 of this chapter, he/she shall give~~  
1029 ~~written notice of his/her determination to the owner or operator.~~

1030  
1031 ~~————— (I) — Unless the Administrator requires immediate cessation, the~~  
1032 ~~owner or operator shall cease injection into the well within forty-eight (48) hours of receipt of~~  
1033 ~~the Administrator's determination.~~

1034  
1035  
1036 ~~————— (II) — The Administrator may allow plugging of the well pursuant~~  
1037 ~~to the requirements of Section 16 of this chapter or require the permittee to perform such~~  
1038 ~~additional construction, operation, monitoring, reporting, and corrective action as is necessary to~~  
1039 ~~prevent the movement of fluid into or between USDWs caused by the lack of mechanical~~  
1040 ~~integrity. The owner or operator may resume injection upon written notification from the~~  
1041 ~~Administrator that the owner or operator has demonstrated mechanical integrity pursuant to~~  
1042 ~~Section 13 of this chapter.~~

1043

1044 ~~\_\_\_\_\_ (Z) A requirement that, for any Class VI well that lacks mechanical~~  
1045 ~~integrity, injection operations are prohibited until the permittee shows to the satisfaction of the~~  
1046 ~~Administrator under Section 13 of this chapter that the well has mechanical integrity.~~

1047 ~~\_\_\_\_\_ (AA) A Class VI permit shall include conditions that meet the~~  
1048 ~~requirements set forth in Section 16 of this chapter. Where the plan meets the requirements of~~  
1049 ~~Section 16 of this chapter, the Administrator shall incorporate it into the permit as a permit~~  
1050 ~~condition. Temporary or intermittent cessation of injection operations is not abandonment.~~

1051 ~~\_\_\_\_\_ (BB) Class VI injection well permits shall include conditions meeting~~  
1052 ~~the requirements of Section 9 of this chapter. Permits shall contain the following requirements~~  
1053 ~~when applicable:~~

1054 ~~\_\_\_\_\_ (I) All wells shall achieve compliance with such requirements~~  
1055 ~~according to a compliance schedule established as a permit condition. The owner or operator of a~~  
1056 ~~proposed new injection well shall submit plans for testing, drilling, and construction as part of~~  
1057 ~~the permit application.~~

1058 ~~\_\_\_\_\_ (II) No construction may commence until a permit has been~~  
1059 ~~issued containing construction requirements.~~

1060 ~~\_\_\_\_\_ (III) All wells shall be in compliance with these requirements~~  
1061 ~~prior to commencing injection operations. Changes in construction plans during construction~~  
1062 ~~may be approved by the Administrator as minor modifications. No such changes may be~~  
1063 ~~physically incorporated into construction of the well prior to approval of the modification by the~~  
1064 ~~Administrator.~~

1065 ~~\_\_\_\_\_ (IV) Corrective action as set forth in Section 8 of this chapter.~~

1066 ~~\_\_\_\_\_ (V) Operation requirements as set forth in Section 9 of this~~  
1067 ~~chapter; the permit shall establish any maximum injection volumes and/or pressures necessary to~~  
1068 ~~ensure that fractures are not initiated in the confining zone, that injected fluids do not migrate~~  
1069 ~~into any underground source of drinking water, that formation fluids are not displaced into any~~  
1070 ~~underground source of drinking water, and to ensure compliance with the operating~~  
1071 ~~requirements.~~

1072 ~~\_\_\_\_\_ (VI) Monitoring and reporting requirements as set forth in~~  
1073 ~~Sections 14 and 15 of this chapter. The permittee shall be required to identify types of tests and~~  
1074 ~~methods used to generate the monitoring data.~~

1075 ~~\_\_\_\_\_ (VII) The owner or operator of a Class VI well must comply with~~  
1076 ~~the financial responsibility requirements set forth in Section 19 of this chapter.~~

1077 ~~\_\_\_\_\_ (CC) The permit may, when appropriate, specify a schedule of~~  
1078 ~~compliance leading to compliance with the SDWA and 40 CFR Parts 144, 145, 146, and 124.~~

1089

1090 ~~\_\_\_\_\_ (I) Any schedules of compliance shall require compliance as~~  
1091 ~~soon as possible, and in no case later than three (3) years after the effective date of the permit.~~

1092  
1093 ~~\_\_\_\_\_ (II) If a permit establishes a schedule of compliance that~~  
1094 ~~exceeds one (1) year from the date of permit issuance, the schedule shall set forth interim~~  
1095 ~~requirements and the dates for their achievement.~~

1096  
1097 ~~\_\_\_\_\_ (1.) The time between interim dates shall not exceed one~~  
1098 ~~(1) year unless,~~

1099  
1100 ~~\_\_\_\_\_ (2.) The time necessary for completion of any interim~~  
1101 ~~requirement is more than one (1) year and is not readily divisible into stages for completion, the~~  
1102 ~~permit shall specify interim dates for the submission of reports of progress toward completion of~~  
1103 ~~the interim requirements and indicate a projected completion date.~~

1104  
1105 ~~\_\_\_\_\_ (III) The permit shall be written to require that if paragraph~~  
1106 ~~(c)(i)(CC)(I) of this section is applicable, progress reports be submitted no later than thirty (30)~~  
1107 ~~days following each interim date and the final date of compliance.~~

1108  
1109 ~~\_\_\_\_\_ (ii) In addition to the conditions required of all permits, the Administrator~~  
1110 ~~shall establish, on a case by case basis, conditions as required for monitoring, schedules of~~  
1111 ~~compliance, and such additional conditions as are necessary to prevent the migration of fluids~~  
1112 ~~into underground sources of drinking water. In the case of wells authorized by permit, these~~  
1113 ~~additional requirements shall be imposed by modifying the permit in accordance with this~~  
1114 ~~section, or the permit may be terminated under this section if cause exists, or appropriate~~  
1115 ~~enforcement action may be taken if the permit has been violated.~~

1116  
1117 ~~\_\_\_\_\_ (iii) In addition to conditions required in all permits the Administrator shall~~  
1118 ~~establish conditions in permits as required on a case by case basis, to provide for and ensure~~  
1119 ~~compliance with all applicable requirements of the SDWA and 40 CFR Parts 144, 145, 146, and~~  
1120 ~~124.~~

1121  
1122 ~~\_\_\_\_\_ (iv) New permits, and to the extent allowed under Section 4 modified or~~  
1123 ~~revoked and reissued permits, shall incorporate each of the applicable requirements referenced in~~  
1124 ~~this section. An applicable requirement is a State statutory or regulatory requirement that takes~~  
1125 ~~effect prior to final administrative disposition of the permit. An applicable requirement is also~~  
1126 ~~any requirement that takes effect prior to the modification or revocation and reissuance of a~~  
1127 ~~permit, to the extent allowed in Section 4.~~

1128  
1129 ~~\_\_\_\_\_ (d) The issuance of a permit does not authorize any injury to persons or property or~~  
1130 ~~invasion of other private rights, or any infringement of State or local law or regulations.~~

1131  
1132 **Section 5. Permit Application. Denying Permits.**

1133  
1134 ~~\_\_\_\_\_ (a) It is the operator's responsibility to make application for and obtain a permit in~~  
1135 ~~accordance with these regulations. Each application must be submitted with all supporting data.~~

1136  
1137 ~~—————(b)———— A complete application for a Class VI well shall include:~~  
1138  
1139 ~~—————(i)———— A brief description of the nature of the business and the activities to be~~  
1140 ~~conducted that require the applicant to obtain a permit under this chapter.~~  
1141  
1142 ~~—————(ii)———— The name, address and telephone number of the operator, and the~~  
1143 ~~operator's ownership status and status as a Federal, State, private, public, or other entity.~~  
1144  
1145 ~~—————(iii)———— Up to four SIC (Standard Industrial Classification) codes that best reflect~~  
1146 ~~the principal products or services provided by the facility.~~  
1147  
1148 ~~—————(iv)———— The name, address, and telephone number of the facility. Additionally, the~~  
1149 ~~location of the geologic sequestration project shall be identified by section, township, range and~~  
1150 ~~county, noting which, if any, sections include Indian lands.~~  
1151  
1152 ~~—————(v)———— Within the area of review, a listing and status of all permits or construction~~  
1153 ~~approvals associated with the geologic sequestration project received or applied for by the~~  
1154 ~~applicant under any of the following programs:~~  
1155  
1156 ~~—————(A)———— Hazardous Waste Management under the Resource Conservation~~  
1157 ~~and Recovery Act (RCRA).~~  
1158  
1159 ~~—————(B)———— UIC Program under the Safe Drinking Water Act.~~  
1160  
1161 ~~—————(C)———— National Pollutant Discharge Elimination System (NPDES) under~~  
1162 ~~the Clean Water Act.~~  
1163  
1164 ~~—————(D)———— Prevention of Significant Deterioration (PSD) program under the~~  
1165 ~~Clean Air Act.~~  
1166  
1167 ~~—————(E)———— Nonattainment program under the Clean Air Act.~~  
1168  
1169 ~~—————(F)———— National Emissions Standards for Hazardous Air Pollutants~~  
1170 ~~(NESHAPs) pre-construction approval under the Clean Air Act.~~  
1171  
1172 ~~—————(G)———— Dredge and fill permitting program under section 404 of~~  
1173 ~~the Clean Water Act.~~  
1174  
1175 ~~—————(vi)———— Within the area of review, a list of other relevant permits, whether federal~~  
1176 ~~or state, associated with the geologic sequestration project that the applicant has been required to~~  
1177 ~~obtain, such as construction permits. This includes a statement as to whether or not the facility is~~  
1178 ~~within a state approved water quality management plan area, a state approved wellhead~~  
1179 ~~protection area or a state approved source water protection area.~~  
1180

1181 ~~\_\_\_\_\_ (vii) A map showing the injection well(s) for which a permit is sought and the~~  
1182 ~~applicable area of review, consistent with Section 8 of this chapter.~~

1183  
1184 ~~\_\_\_\_\_ (A) Within the area of review, the map must show the number, or name~~  
1185 ~~and location of all known injection wells, producing wells, abandoned wells, plugged wells or~~  
1186 ~~dry holes, deep stratigraphic boreholes, state or EPA approved subsurface cleanup sites, public~~  
1187 ~~drinking water supply wellhead or source water protection areas, surface bodies of water,~~  
1188 ~~springs, mines (surface and subsurface), quarries, water wells and other pertinent surface features~~  
1189 ~~including structures intended for human occupancy, state, tribal, and territory boundaries, and~~  
1190 ~~roads.~~

1191  
1192 ~~\_\_\_\_\_ (B) Only information of public record is required to be included on this~~  
1193 ~~map.~~

1194  
1195 ~~\_\_\_\_\_ (C) The map should also show faults, if known or suspected.~~

1196  
1197 ~~\_\_\_\_\_ (viii) A map delineating the area of review based upon modeling, using all~~  
1198 ~~available data including data available from any logging and testing of wells within and adjacent~~  
1199 ~~(within one (1) mile) to the area of review;~~

1200  
1201 ~~\_\_\_\_\_ (A) A Class VI area of review shall never be less than the area of~~  
1202 ~~potentially affected groundwater.~~

1203  
1204 ~~\_\_\_\_\_ (B) All areas of review shall be legally described by township, range,~~  
1205 ~~and section to the nearest ten (10) acres as described under the general land survey system.~~

1206  
1207 ~~\_\_\_\_\_ (ix) A description of the general geology of the area to be affected by the~~  
1208 ~~injection of carbon dioxide including geochemistry, structure and faulting, fracturing and seals,~~  
1209 ~~and stratigraphy and lithology including petrophysical attributes. The description shall also~~  
1210 ~~include sufficient information on the geologic structure and reservoir properties of the proposed~~  
1211 ~~storage site and overlying formations, including:~~

1212  
1213 ~~\_\_\_\_\_ (A) Isopach maps of the proposed injection and confining zone(s), a~~  
1214 ~~structural contour map aligned with the top of the proposed injection zone, and at least two (2)~~  
1215 ~~geologic cross sections of the area of review reasonably perpendicular to each other and showing~~  
1216 ~~the geologic formations from the surface to total depth;~~

1217  
1218 ~~\_\_\_\_\_ (B) Location, orientation, and properties of known or suspected faults~~  
1219 ~~and fractures that may transect the confining zone(s) in the area of review and a determination~~  
1220 ~~that they would not interfere with containment;~~

1221  
1222 ~~\_\_\_\_\_ (C) Information on seismic history that have affected the proposed area~~  
1223 ~~of review including knowledge of previous seismic events and history of these events, the presence~~  
1224 ~~and depth of seismic sources, and a determination that the seismicity would not compromise~~  
1225 ~~containment;~~

1226

1227 ~~\_\_\_\_\_ (D) Data sufficient to demonstrate the effectiveness of the injection and~~  
1228 ~~confining zone(s), including data on the depth, areal extent, thickness, mineralogy, porosity,~~  
1229 ~~vertical permeability, and capillary pressure of the injection and confining zone(s) within the area~~  
1230 ~~of review, and geologic changes based on field data that may include geologic cores, outcrop data,~~  
1231 ~~seismic surveys, well logs, and names and lithologic descriptions;~~  
1232

1233 ~~\_\_\_\_\_ (E) Geomechanical information on fractures, stress, ductility, rock~~  
1234 ~~strength, and in situ fluid pressures within the confining zone; and~~  
1235

1236 ~~\_\_\_\_\_ (F) Geologic and topographic maps and cross-sections illustrating~~  
1237 ~~regional geology, hydrogeology, and the geologic structure of the local area.~~  
1238

1239 ~~\_\_\_\_\_ (x) A compilation of all wells and other drill holes within, and adjacent~~  
1240 ~~(within one (1) mile) to the area of review. Such data must include a description of each well and~~  
1241 ~~drill hole type, construction, date drilled, location, depth, record of plugging and/or completion,~~  
1242 ~~and any additional information the Administrator may require.~~  
1243

1244 ~~\_\_\_\_\_ (A) Applicants shall also identify the location of all known wells~~  
1245 ~~within, and adjacent (within one (1) mile) to the area of review that penetrate the confining or~~  
1246 ~~injection zone.~~  
1247

1248 ~~\_\_\_\_\_ (B) Applicants shall perform mapping with sufficient resolution as to~~  
1249 ~~make a comprehensive effort to identify wells that are not in the public record using aerial~~  
1250 ~~photography, aerial survey, physical traverse, or other methods acceptable to the Administrator.~~  
1251

1252 ~~\_\_\_\_\_ (C) Applicants shall perform corrective action as specified in Section 8~~  
1253 ~~of this chapter.~~  
1254

1255 ~~\_\_\_\_\_ (xi) Maps and stratigraphic cross-sections indicating the general vertical and~~  
1256 ~~lateral limits of all USDWs, the location of water wells and springs within the area of review,~~  
1257 ~~their positions relative to the injection zone(s), and the direction of water movement, where~~  
1258 ~~known;~~  
1259

1260 ~~\_\_\_\_\_ (xii) A characterization of the injection zone and aquifers above and below the~~  
1261 ~~injection zone that may be affected, including applicable pressure and fluid chemistry data to~~  
1262 ~~describe the projected effects of injection activities, and background water quality data that will~~  
1263 ~~facilitate the classification of any groundwaters that may be affected by the proposed discharge.~~  
1264 ~~This must include information necessary for the Division to classify the receiver and any~~  
1265 ~~secondarily affected aquifers under Water Quality Rules and Regulations Chapter 8;~~  
1266

1267 ~~\_\_\_\_\_ (xiii) Baseline geochemical data on subsurface formations, including all~~  
1268 ~~USDWs in the area of review;~~  
1269

1270 ~~\_\_\_\_\_ (xiv) Proposed operating data:~~  
1271

- 1272 ~~\_\_\_\_\_ (A) Average and maximum daily rate and volume and/or mass and~~  
1273 ~~total anticipated volume and/or mass of the carbon dioxide stream;~~  
1274  
1275 ~~\_\_\_\_\_ (B) Average and maximum surface injection pressure;~~  
1276  
1277 ~~\_\_\_\_\_ (C) The source of the carbon dioxide stream; and~~  
1278  
1279 ~~\_\_\_\_\_ (D) An analysis of the chemical and physical characteristics of the~~  
1280 ~~carbon dioxide stream and any other substance(s) proposed for inclusion in the injectate stream;~~  
1281 ~~and~~  
1282  
1283 ~~\_\_\_\_\_ (E) Anticipated duration of the proposed injection period(s).~~  
1284  
1285 ~~\_\_\_\_\_ (xv) The compatibility of the carbon dioxide stream with fluids in the injection~~  
1286 ~~zone and minerals in both the injection and the confining zone(s), based on the results of the~~  
1287 ~~formation testing program, and with the materials used to construct the well;~~  
1288  
1289 ~~\_\_\_\_\_ (xvi) An assessment of the impact to fluid resources, on subsurface structures~~  
1290 ~~and the surface of lands that may reasonably be expected to be impacted, and the measures~~  
1291 ~~required to mitigate such impacts;~~  
1292  
1293 ~~\_\_\_\_\_ (xvii) Proposed formation testing program to obtain an analysis of the chemical~~  
1294 ~~and physical characteristics of the injection zone and confining zone and that meets the~~  
1295 ~~requirements of Section 11 of this chapter;~~  
1296  
1297 ~~\_\_\_\_\_ (xviii) Proposed stimulation program, a description of stimulation fluids to be~~  
1298 ~~used, and a determination that stimulation will not compromise containment. All stimulation~~  
1299 ~~programs must be approved by the Administrator as part of the permit application and~~  
1300 ~~incorporated into the permit;~~  
1301  
1302 ~~\_\_\_\_\_ (xix) Proposed procedure that outlines steps to conduct injection operation;~~  
1303  
1304 ~~\_\_\_\_\_ (xx) A wellbore schematic of the subsurface construction details and surface~~  
1305 ~~wellhead construction of the injection and monitoring wells;~~  
1306  
1307 ~~\_\_\_\_\_ (xxi) Injection well design and construction procedures that meet the~~  
1308 ~~requirements of Section 9 of this chapter;~~  
1309  
1310 ~~\_\_\_\_\_ (xxii) Proposed area of review and corrective action plan that meets the~~  
1311 ~~requirements under Section 8 of this chapter;~~  
1312  
1313 ~~\_\_\_\_\_ (xxiii) The status of corrective action on wells in the area of review;~~  
1314  
1315 ~~\_\_\_\_\_ (xxiv) All available logging and testing program data on the well(s) required by~~  
1316 ~~Section 11 of this chapter;~~  
1317

- 1318 ~~—————(xxv) A demonstration of mechanical integrity pursuant to Section 13 of this~~  
1319 ~~chapter;~~
- 1320
- 1321 ~~—————(xxvi) A demonstration, satisfactory to the Administrator, that the applicant has~~  
1322 ~~met the financial responsibility requirements under Section 19 of this chapter;~~
- 1323
- 1324 ~~—————(xxvii) Proposed testing and monitoring plan required by Section 14 of this~~  
1325 ~~chapter;~~
- 1326
- 1327 ~~—————(xxviii) Proposed injection and monitoring well(s) plugging plan required by~~  
1328 ~~Section 16(b) of this chapter; where the plan meets the requirements of Section 16(b) of this~~  
1329 ~~chapter, the Administrator shall incorporate it into the permit as a permit condition.~~
- 1330
- 1331 ~~—————(xxix) Proposed post-injection site care plan required by Section 17(a) of this~~  
1332 ~~chapter;~~
- 1333
- 1334 ~~—————(xxx) Proposed emergency and remedial response plan required by Section 18 of~~  
1335 ~~this chapter;~~
- 1336
- 1337 ~~—————(xxxii) A site and facilities description, including a description of the proposed~~  
1338 ~~geologic sequestration facilities;~~
- 1339
- 1340 ~~—————(xxxiii) Documentation sufficient to demonstrate that the applicant has all legal~~  
1341 ~~rights, including but not limited to the right to surface use, necessary to sequester carbon dioxide~~  
1342 ~~and associated constituents;~~
- 1343
- 1344 ~~—————(xxxiii) Proof of notice to surface owners, mineral claimants, mineral owners,~~  
1345 ~~lessees, and other owners of record of subsurface interests as to the contents of such notice.~~  
1346 ~~Notice requirements shall at a minimum require:~~
- 1347
- 1348 ~~—————(A) The publishing of notice of the application in a newspaper~~  
1349 ~~of general circulation in each county of the proposed operation at weekly intervals for four (4)~~  
1350 ~~consecutive weeks; and~~
- 1351
- 1352 ~~—————(B) A copy of the notice shall also be mailed to all surface~~  
1353 ~~owners, mineral claimants, mineral owners, lessees and other owners of record of subsurface~~  
1354 ~~interests that are located within one (1) mile of the proposed boundary of the geologic~~  
1355 ~~sequestration site as defined by W.S. § 35-11-103(e)(xxi).~~
- 1356
- 1357 ~~—————(xxxiv) A list of contacts, submitted to the Administrator, for those Tribes~~  
1358 ~~identified to be within the area of review of the geologic sequestration project based on~~  
1359 ~~information provided in subparagraphs (b)(vii), (b)(vii)(A), (b)(vii)(B) of this section; and~~
- 1360
- 1361 ~~—————(xxxv) Any other information requested by the Administrator.~~
- 1362
- 1363 ~~—————(c) Expansion to the Areal Extent of Existing Class II Aquifer Exemptions for Class~~

1364 ~~VI Wells.~~

1365

1366 ~~\_\_\_\_\_ (i) The Administrator may consider a request from owners and/or operators~~  
1367 ~~of permitted Class II injection well(s) that are seeking to convert their well(s) to a Class VI well~~  
1368 ~~and are seeking an expansion to the areal extent of an existing Class II enhanced oil recovery or~~  
1369 ~~enhanced gas recovery aquifer exemption for the exclusive purpose of Class VI injection for~~  
1370 ~~geologic sequestration if the existing aquifer exemption and the affected wells meet the~~  
1371 ~~following conditions:~~

1372

1373 ~~\_\_\_\_\_ (A) It does not currently serve as a source of drinking water; and~~

1374

1375 ~~\_\_\_\_\_ (B) The total dissolved solids content of the groundwater is more than~~  
1376 ~~3,000 mg/L and less than 10,000 mg/L; and~~

1377

1378 ~~\_\_\_\_\_ (C) It is not reasonably expected to supply a public water system.~~

1379

1380 ~~\_\_\_\_\_ (ii) Such requests will not be final until the Administrator submits the request~~  
1381 ~~as a revision to the applicable Federal UIC program under 40 CFR Part 147 or as a substantial~~  
1382 ~~program revision to an approved State UIC program under 40 CFR § 145.32 and EPA approves~~  
1383 ~~the request.~~

1384

1385 ~~\_\_\_\_\_ (A) The owner or operator of a Class II enhanced oil recovery or~~  
1386 ~~enhanced gas recovery well that requests an expansion of the areal extent of an existing aquifer~~  
1387 ~~exemption for the exclusive purpose of Class VI injection for geologic sequestration must define~~  
1388 ~~(by narrative description, illustrations, maps, or other means) and describe in geographic and/or~~  
1389 ~~geometric terms (such as vertical and lateral limits and gradient) that are clear and definite, all~~  
1390 ~~aquifers or parts thereof that are requested to be designated as exempted using the criteria in~~  
1391 ~~subparagraphs (d)(i)(A-C) of this section.~~

1392

1393 ~~\_\_\_\_\_ (B) In evaluating a request to expand the areal extent of an aquifer~~  
1394 ~~exemption of a Class II enhanced oil recovery or enhanced gas recovery well for the purpose of~~  
1395 ~~Class VI injection, the Administrator must determine that the request meets the criteria for~~  
1396 ~~exemptions in subparagraphs (d)(i)(A-C) of this section. In making the determination, the~~  
1397 ~~Administrator shall consider:~~

1398

1399 ~~\_\_\_\_\_ (I) Current and potential future use of the USDWs to be~~  
1400 ~~exempted as drinking water resources;~~

1401

1402 ~~\_\_\_\_\_ (II) The predicted extent of the injected carbon dioxide plume,~~  
1403 ~~and any mobilized fluids that may result in degradation of water quality, over the lifetime of the~~  
1404 ~~geologic sequestration project, as informed by computational modeling performed pursuant to~~  
1405 ~~Section 8(c)(i) of this chapter, in order to ensure that the proposed injection operation will not at~~  
1406 ~~any time endanger USDWs including non-exempted portions of the injection formation;~~

1407

1408 ~~\_\_\_\_\_ (III) Whether the areal extent of the expanded aquifer exemption~~  
1409 ~~is of sufficient size to account for any possible revisions to the computational model during~~

1410 reevaluation of the area of review, pursuant to Section 8(d) of this chapter; and  
1411  
1412 ~~—————(IV)—— Any information submitted to support a waiver request~~  
1413 ~~made by the owner or operator under Section 10 of this chapter, if appropriate.~~  
1414  
1415 ~~————(d)—— The Administrator shall notify, in writing, any Tribes within the area of review of~~  
1416 ~~the geologic sequestration project based on information provided in subparagraphs (b)(vii),~~  
1417 ~~(b)(vii)(A), (b)(vii)(B), and (b)(xxxiv) of this section.~~  
1418  
1419 ~~————(e)—— Prior to granting approval for the operation of a Class VI well, the Administrator~~  
1420 ~~shall consider the following information:~~  
1421  
1422 ~~————(i)—— The final area of review based on modeling, using data obtained during~~  
1423 ~~logging and testing of the well and the formation as required by subparagraphs (b)(xv), (b)(xxiii),~~  
1424 ~~(b)(xxiv), and (e)(iii) of this section;~~  
1425  
1426 ~~————(ii)—— Any relevant updates, based on data obtained during logging and testing of~~  
1427 ~~the well and the formation as required by subparagraphs (b)(xv), (b)(xxiii), (b)(xxiv), and (e)(iii)~~  
1428 ~~of this section, to the information on the geologic structure and hydrogeologic properties of the~~  
1429 ~~proposed storage site and overlying formations, submitted to satisfy the requirements of~~  
1430 ~~subparagraph (b)(ix) of this section;~~  
1431  
1432 ~~————(iii)—— The results of the formation testing program as required in paragraph~~  
1433 ~~(b)(xvii) of this section;~~  
1434  
1435 ~~————(iv)—— Final injection well construction procedures that meet the requirements of~~  
1436 ~~Section 9 of this chapter;~~  
1437  
1438 ~~————(v)—— Any updates to the proposed area of review and corrective action plan,~~  
1439 ~~testing and monitoring plan, injection well plugging plan, post-injection site care and site closure~~  
1440 ~~plan, or the emergency and remedial response plan submitted under paragraph (b)(xxx) of this~~  
1441 ~~sSection, which are necessary to address new information collected during logging and testing of~~  
1442 ~~the well and the formation as required by all paragraphs of this section; and~~  
1443  
1444 ~~————(f)—— Owners or operators seeking a waiver of the requirement to inject below the~~  
1445 ~~lowermost USDW must also refer to Section 10 of this chapter and submit a supplemental report,~~  
1446 ~~as required at Section 10(a). The supplemental report is not part of the permit application.~~  
1447  
1448 ~~————(g)—— An applicant applying for a Class VI well permit must obtain public liability~~  
1449 ~~insurance to cover the geologic sequestration activities for which a permit is sought.~~  
1450  
1451 ~~————(i)—— The public liability insurance shall be in addition to the financial~~  
1452 ~~assurance required in Section 19 of this chapter.~~  
1453

1454 ~~—————(ii)—— The insurance policy shall provide for personal injury and property~~  
1455 ~~damage protection and shall be in place until a completion and release certificate has been~~  
1456 ~~obtained from the Administrator certifying that plume stabilization has been achieved.~~  
1457  
1458 ~~—————(iii)—— The minimum insurance coverage for public liability insurance as required~~  
1459 ~~by W.S. § 35-11-313(f)(ii)(O) shall be five hundred thousand dollars (\$500,000) for each~~  
1460 ~~occurrence of bodily injury or property damage, and one million dollars (\$1,000,000) aggregate.~~  
1461  
1462 ~~—————(iv)The public liability insurance shall include a rider requiring that the insurer~~  
1463 ~~notify the Administrator whenever substantive changes are made to the policy, including any~~  
1464 ~~termination or failure to renew.~~  
1465  
1466 ~~—————(v)—— Self insurance in lieu of public liability insurance must meet state or~~  
1467 ~~federal requirements and be approved by the Administrator.~~  
1468  
1469 ~~—————(h)—— All applications for permits, reports, or information to be submitted to the~~  
1470 ~~Administrator shall be signed by a responsible officer as follows:~~  
1471  
1472 ~~—————(i)—— For a corporation—a responsible corporate officer means:~~  
1473  
1474 ~~—————(A)—— A president, secretary, treasurer, or vice president of the~~  
1475 ~~corporation in charge of a principal business function, or any other person who performs similar~~  
1476 ~~policy or decision making functions for the corporation; or~~  
1477  
1478 ~~—————(B)—— The manager of one (1) or more manufacturing, production, or~~  
1479 ~~operating facilities employing more than 250 persons or having gross annual sales or expendi-~~  
1480 ~~tures exceeding \$25 million (in second quarter 1980 dollars), if authority to sign documents has~~  
1481 ~~been assigned or delegated to the manager in accordance with corporate procedures.~~  
1482  
1483 ~~—————(ii)—— For a partnership or sole proprietorship—by a general partner or the~~  
1484 ~~proprietor, respectively;~~  
1485  
1486 ~~—————(iii)—— For a municipality, state, federal or other public agency—by either the~~  
1487 ~~principal executive officer or ranking elected official. For the purposes of this section, a principal~~  
1488 ~~executive officer of a Federal agency includes:~~  
1489  
1490 ~~—————(A)—— The chief executive officer of the agency, or~~  
1491  
1492 ~~—————(B)—— A senior executive officer having responsibility for the overall~~  
1493 ~~operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).~~  
1494  
1495 ~~—————(iv)—— A person is authorized as a responsible officer only if:~~  
1496  
1497 ~~—————(A)—— The authorization is made in writing by a person described in~~  
1498 ~~paragraphs (i) through (iii) in this subsection;~~  
1499

1500 ~~\_\_\_\_\_ (B) The authorization specifies either an individual or a position~~  
1501 ~~having responsibility for the overall operation of the regulated facility or activity, such as the~~  
1502 ~~position of plant manager, operator of a well or a well field, superintendent, or position of~~  
1503 ~~equivalent responsibility. (A duly authorized representative may thus be either a named~~  
1504 ~~individual or any individual occupying a named position); and~~  
1505

1506 ~~\_\_\_\_\_ (C) The written authorization is submitted to the Administrator.~~  
1507

1508 ~~\_\_\_\_\_ (v) If an authorization under paragraph (iv) of this subsection is no longer~~  
1509 ~~accurate because a different individual or position has responsibility for the overall operation of~~  
1510 ~~the facility, a new authorization satisfying the requirements of paragraph (iv) of this subsection~~  
1511 ~~must be submitted to the Administrator prior to or together with any reports, information, or~~  
1512 ~~applications to be signed by an authorized representative.~~  
1513

1514 ~~\_\_\_\_\_ (i) The application shall contain the following certification by the person signing the~~  
1515 ~~application:~~  
1516

1517 ~~\_\_\_\_\_ “I certify under penalty of law that this document and all attachments were prepared~~  
1518 ~~under my direction or supervision in accordance with a system designed to ensure that qualified~~  
1519 ~~personnel properly gather and evaluate the information submitted. Based on my inquiry of the~~  
1520 ~~person or persons who manage the system, or those persons directly responsible for gathering the~~  
1521 ~~information, the information submitted is, to the best of my knowledge and belief, true, accurate,~~  
1522 ~~and complete. I am aware that there are significant penalties for submitting false information,~~  
1523 ~~including the possibility of fine and imprisonment for knowing violations.”~~  
1524

1525 ~~\_\_\_\_\_ (j) All data used to complete permit applications shall be kept by the applicant for the~~  
1526 ~~life of the geologic sequestration project and for ten (10) years following site closure.~~  
1527

1528 ~~(formerly Section 4(b)(v))(a)~~ The Administrator may deny an ~~individual~~ permit for any  
1529 of the following reasons:

1530 ~~(formerly Section 4(b)(v)(A))(i)~~ The application is incomplete;

1531 ~~(formerly Section 4(b)(v)(B))(ii)~~ The project, if constructed or operated, will  
1532 violate applicable state surface or groundwater standards;

1533 ~~(formerly Section 4(b)(v)(C))(iii)~~ The application proposes the construction or  
1534 operation of a project that does not meet the requirements of this ~~e~~Chapter;

1535 ~~(formerly Section 4(b)(v)(a)(D))(iv)~~ The permitted facility would be in conflict  
1536 with or is in conflict with a State-approved local wellhead protection plan, State-approved local  
1537 source water protection plan, or State-approved water quality management plan; or

1538 ~~(formerly Section 4(b)(v)(a)(E))(v)~~ Other justifiable reasons necessary to carry  
1539 out the provisions of the Wyoming Environmental Quality Act.  
1540  
1541  
1542  
1543  
1544  
1545

1546 **Section 6. ~~Prohibitions.~~ Modifying Permits.**  
1547

1548 (a) ~~— In addition to the requirements in W.S. § 35-11-301(a), no person shall:~~  
1549

1550 ~~— (i) — Discharge into, construct, operate, or modify any Class VI well unless~~  
1551 ~~permitted pursuant to this chapter;~~  
1552

1553 ~~— (ii) — Discharge to any zone except the authorized discharge zone as described~~  
1554 ~~in the permit;~~  
1555

1556 ~~— (iii) — Conduct any authorized injection activity in a manner that results in a~~  
1557 ~~violation of any permit condition, representations made in the application, or the request for~~  
1558 ~~coverage under the individual permit. A permit condition supersedes any application content.~~  
1559

1560 ~~— (iv) — Construct, operate, maintain, convert, plug, abandon, or conduct any other~~  
1561 ~~injection activity in a manner that allows the movement of fluid containing any contaminant into~~  
1562 ~~underground sources of drinking water, if the presence of that contaminant may cause a violation~~  
1563 ~~of any primary drinking water regulation under 40 CFR Part 141 or may otherwise adversely~~  
1564 ~~affect the health of persons. The applicant for a permit shall have the burden of showing that the~~  
1565 ~~requirements of this paragraph are met.~~  
1566

1567 ~~— (b) — If any water quality monitoring of an underground source of drinking water~~  
1568 ~~indicates the movement of any contaminant into the underground source of drinking water,~~  
1569 ~~except as authorized under this chapter, the Administrator shall prescribe such additional~~  
1570 ~~requirements for construction, corrective action, operation, monitoring, or reporting (including~~  
1571 ~~closure of the injection well) as are necessary to prevent such movement. In the case of wells~~  
1572 ~~authorized by permit, these additional requirements shall be imposed by modifying the permit in~~  
1573 ~~accordance with Section 4 of this chapter, or the permit may be terminated under Section 4 of~~  
1574 ~~this chapter if cause exists, or appropriate enforcement action may be taken if the permit has~~  
1575 ~~been violated.~~  
1576

1577 ~~— (c) — No person shall inject any hazardous waste that has been banned from land~~  
1578 ~~disposal pursuant to Wyoming Hazardous Waste Rules Chapter 1.~~  
1579

1580 ~~— (d) — The construction of new, or operation or maintenance of any existing Class V~~  
1581 ~~wells for non-experimental geologic sequestration is prohibited.~~  
1582

1583 ~~— (e) — The Administrator may identify (by narrative description, illustrations, maps, or~~  
1584 ~~other means) and shall protect as underground sources of drinking water, all aquifers and parts of~~  
1585 ~~aquifers that meet the definition of “underground source of drinking water” in Section 2, except~~  
1586 ~~to the extent there is expansion to the areal extent of an existing Class II enhanced oil recovery or~~  
1587 ~~enhanced gas recovery aquifer exemption for the exclusive purpose of Class VI injection for~~  
1588 ~~geologic sequestration under Section 5(e) of this chapter. Other than EPA-approved aquifer~~  
1589 ~~exemption expansions that meet the criteria set forth in Section 5(e) of this chapter, new aquifer~~  
1590 ~~exemptions shall not be issued for Class VI injection wells. Even if an aquifer has not been~~  
1591 ~~specifically identified by the Administrator, it is an underground source of drinking water if it~~

1592 ~~meets the definition in Section 2 of this chapter.~~

1593

1594 ~~(formerly Section 4(b)(vii))(a)~~ The Administrator may modify a permit when:

1595

1596 ~~(formerly Section 4(b)(vii)(A)(i)~~ Any material or substantial  
1597 alterations or additions to the facility occur after permitting ~~or licensing~~ that justify the  
1598 application of different permit conditions ~~that are different or absent in the existing permit;~~

1599

1600 ~~(formerly Section 4(b)(vii)(B)(ii)~~ Any modification in the operation of  
1601 the facility is capable of causing or increasing pollution in excess of applicable standards or  
1602 permit conditions;

1603

1604 ~~(formerly Section 4(b)(vii)(C)(iii)~~ Information warranting modification  
1605 is discovered after the operation has begun that would have justified the application of different  
1606 permit conditions at the time of permit issuance;

1607

1608 ~~(formerly Section 4(b)(vii)(D)(iv)~~ Regulations or standards upon which  
1609 the permit was based ~~have~~ changed ~~by promulgation of amended standards or regulations or by~~  
1610 ~~judicial decision~~ after the permit was issued;

1611

1612 ~~(formerly Section 4(b)(vii)(E)(v)~~ Cause exists for termination, as  
1613 described in this ~~s~~Section, but the Department determines that modification is appropriate; ~~or~~

1614

1615 ~~(formerly Section 4(b)(vii)(F)(vi)~~ Modification is necessary to comply  
1616 with applicable statutes, standards, or regulations;

1617

1618 ~~(formerly Section 4(b)(xvi))(vii)~~ ~~Transfer of a permit is allowed only upon~~  
1619 ~~approval by the Administrator. When a permit transfer occurs pursuant to this section, the permit~~  
1620 ~~rights of the previous permittee will automatically terminate.~~ The permit is transferred; or

1621

1622 ~~(formerly Section 4(b)(viii)(viii)~~ The Administrator ~~may modify a permit~~  
1623 ~~whenever the Administrator~~ determines that permit changes are necessary based on:

1624

1625 ~~(formerly Section 4(b)(viii)(A)(A)~~ Area of review reevaluations under  
1626 Section ~~8(d)(i)~~ 13(c)(i) of this ~~e~~Chapter;

1627

1628 ~~(formerly Section 4(b)(viii)(B)(B)~~ ~~Any a~~A amendments to the testing and  
1629 monitoring plan under Section ~~14(b)(xii)~~ 20(b)(xi) of this ~~e~~Chapter;

1630

1631 ~~(formerly Section 4(b)(viii)(C)(C)~~ ~~Any a~~A amendments to the injection  
1632 well-plugging plan under Section ~~16(e)~~ 23(c) of this ~~e~~Chapter;

1633

1634 ~~(formerly Section 4(b)(viii)(D)(D)~~ ~~Any a~~A amendments to the post-  
1635 injection site care and site closure plan under Section ~~17(a)(iv)~~ 24(a)(iv) of this ~~e~~Chapter;

1636

1637 ~~(formerly Section 4(b)(viii)(E)(E)~~ Any a Amendments to the emergency  
1638 and remedial response plan under Section ~~18(a)(i)~~ 25(a) of this ~~e~~Chapter;

1639  
1640 ~~(formerly Section 4(b)(viii)(F)(F)~~ A review of monitoring ~~and/or~~  
1641 testing results ~~conducted in accordance with permit requirements~~; or

1642  
1643 ~~(formerly Section 4(b)(viii)(G)(G)~~ A determination that the injectate is a  
1644 hazardous waste as defined in 40 CFR § 261.3 ~~either because the definition has been revised, or~~  
1645 ~~because a previous determination has been changed.~~

1646  
1647 ~~formerly Section 4(b)(x)(b)~~ The Administrator may make Mminor modifications ~~of to~~  
1648 permits ~~may occur~~ with the consent of the permittee, ~~without following the public notice~~  
1649 ~~requirements.~~ The Administrator shall notify the permittee of Mminor modifications to its  
1650 permit, and the modifications will shall become final twenty (20) days from the date of receipt of  
1651 such notice. ~~For the purposes of this chapter, m~~Minor modifications may only:

1652  
1653 ~~formerly Section 4(b)(x)(A)(i)~~ Correct typographical errors;

1654  
1655 ~~formerly Section 4(b)(x)(B)(ii)~~ Require more frequent monitoring or  
1656 reporting by the permittee;

1657  
1658 ~~formerly Section 4(b)(x)(C)(iii)~~ Change an interim compliance date in a  
1659 schedule of compliance, provided the new date is not more than 120 days after the date specified  
1660 in the existing permit and does not interfere with attainment of the final compliance date  
1661 requirement;

1662  
1663 ~~formerly Section 4(b)(x)(D)(iv)~~ Allow for a permit transfer and change in  
1664 ownership or operational control of a facility where the Administrator determines that no other  
1665 change in the permit is necessary, provided that a written agreement containing a specific date  
1666 for transfer of permit responsibility, coverage, and liability between the current and new  
1667 permittees ~~have~~ has been submitted to the Administrator;

1668  
1669 ~~formerly Section 4(b)(x)(E)(v)~~ Change quantities or types of fluids injected  
1670 that are within the capacity of the facility as permitted and, in the judgment of the Administrator,  
1671 would not interfere with the operation of the facility or its ability to meet conditions described in  
1672 the permit and would not change its classification;

1673  
1674 ~~formerly Section 4(b)(x)(F)(vi)~~ Change construction requirements approved  
1675 by the Administrator pursuant to ~~subparagraphs (e)(i)(BB)(I) through (III) of this section~~ Section  
1676 9(b)(xxix)(A)-(C) of this Chapter, provided that ~~any such~~ the alteration ~~shall~~ complies with the  
1677 requirements of this ~~e~~Chapter;

1678  
1679 ~~formerly Section 4(b)(x)(G)(vii)~~ Amend a well-plugging and abandonment  
1680 plan that has been updated under Section ~~16~~ 23 of this ~~e~~Chapter; or

1681

1682 ~~formerly Section 4(b)(x)(H)(ix)~~ Amend a Class VI injection well testing and  
1683 monitoring plan, well-plugging plan, post-injection site care and site closure plan, or emergency  
1684 and remedial response plan where the modifications merely clarify or correct the plan, ~~as~~  
1685 ~~determined by the Administrator.~~

1686  
1687 ~~formerly Section 4(b)(xii)(c)~~ The Administrator may modify a permit to resolve issues  
1688 that could lead to the revocation or termination of the permit under Section ~~4(b)~~ 7(a) of this  
1689 eChapter. ~~The Administrator, as part of any notification of intent to terminate a permit, shall~~  
1690 ~~order the permittee to proceed with reclamation on a reasonable time period.~~

1691  
1692 ~~(formerly Section 4(b)(xiv)(d)~~ When the Administrator modifies a permit, In a  
1693 permit modification under Section 4(b) of this chapter, only those the conditions ~~to be~~ that are  
1694 being modified shall be reopened when a new draft permit is prepared. All other aspects of the  
1695 existing, unmodified permit shall remain in effect for the duration of the ~~un~~modified permit and  
1696 the modified permit shall expire on the date when the original permit would have expired. ~~When~~  
1697 ~~a permit is revoked and reissued under this section, the entire permit is reopened as if the permit~~  
1698 ~~has expired and is being reissued. During any revocation and reissuance proceeding, the~~  
1699 ~~permittee shall comply with all conditions of the existing permit until a new final permit is~~  
1700 ~~issued. (formerly Section 4(b)(ix))~~ Suitability of the facility location ~~will~~ shall not be considered  
1701 ~~at the time of permit modification or revocation and reissuance~~ unless new information or  
1702 standards indicate that a threat to human health, safety, or the environment exists that was  
1703 unknown at the time of permit issuance.

1704  
1705 ~~formerly Section (4)(b)(xiii)(e)~~ ~~If the Administrator tentatively decides to modify or~~  
1706 ~~revoke and reissue a permit, a draft permit incorporating the proposed changes shall be prepared.~~  
1707 The Administrator ~~may request additional information and, in the case of a modified permit, may~~  
1708 require the submission of ~~an updated~~ a new application to modify a permit. ~~In the case of~~  
1709 ~~revoked and reissued permits, the Administrator shall require the submission of a new~~  
1710 ~~application.~~

1711  
1712 **Section 7. Minimum Criteria for Siting Class VI Wells. Terminating, Revoking,**  
1713 **and Reissuing Permits.**

1714  
1715 (a) ~~Owners or operators of Class VI wells must demonstrate to the satisfaction of the~~  
1716 ~~Administrator that the wells will be sited in areas with a suitable geologic system. The geologic~~  
1717 ~~system must be comprised of:~~

1718  
1719 (i) ~~An injection zone of sufficient areal extent, thickness, porosity, and~~  
1720 ~~permeability to receive the total anticipated volume of the carbon dioxide stream; and~~

1721  
1722 (ii) ~~A confining zone(s) that is free of transmissive faults or fractures and of~~  
1723 ~~sufficient areal extent and integrity to contain the injected carbon dioxide stream and displaced~~  
1724 ~~formation fluids and allow injection at proposed maximum pressures and volumes without~~  
1725 ~~initiating or propagating fractures in the confining zone(s) or causing non-transmissive faults to~~  
1726 ~~become transmissive.~~

1727

1728 ~~(b) — Owners or operators of Class VI wells must identify and characterize additional~~  
1729 ~~zones, if they exist, that will impede vertical fluid movement, allow for pressure dissipation, and~~  
1730 ~~provide additional opportunities for monitoring, mitigation, and remediation. Vertical faults and~~  
1731 ~~fractures that transect these zones must be identified.~~

1732  
1733 ~~(formerly Section 4(b)(xi)(a))~~ (a) The Administrator may terminate a permit or revoke and  
1734 reissue ~~or terminate~~ a permit for any of the following reasons:

1735  
1736 ~~(formerly Section 4(b)(xi)(A))~~ (i) Noncompliance with terms and conditions  
1737 of the permit;

1738  
1739 ~~(formerly Section 4(b)(xi)(B))~~ (ii) Failure in the application or during the  
1740 issuance process to disclose fully all relevant facts, or misrepresentation of any relevant facts at  
1741 any time; or

1742  
1743 ~~(formerly Section 4(b)(xi)(C))~~ (iii) A determination that the activity ~~endangers~~  
1744 threatens human health, safety, or the environment and can only be regulated to acceptable levels  
1745 by a permit modification or termination.

1746  
1747 ~~(formerly Section 4(b)(xii)(b))~~ (b) ~~The Administrator may modify a permit to resolve issues~~  
1748 ~~that could lead to the revocation of the permit under Section 4(b) of this chapter. The~~  
1749 ~~Administrator, a~~ s part of any ~~notification~~ notice of intent to terminate a permit, ~~the~~  
1750 Administrator shall order the permittee to proceed with reclamation ~~on~~ within a reasonable time  
1751 period.

1752  
1753 ~~(formerly Section 4(b)(xiii))~~ (c) ~~If the Administrator tentatively decides to modify or~~  
1754 ~~revoke and reissue a permit, a draft permit incorporating the proposed changes shall be prepared.~~  
1755 ~~The Administrator may request additional information and, in the case of a modified permit, may~~  
1756 ~~require the submission of an updated application. In the case of revoked and reissued permits, the~~  
1757 ~~Administrator shall require the submission of~~ A revoked permit may be reissued only if a new  
1758 application is submitted.

1759  
1760 ~~(formerly Section 4(b)(xiv))~~ (d) ~~In a permit modification under Section 4(b) of this~~  
1761 ~~eChapter, only those conditions to be modified shall be reopened when a new draft permit is~~  
1762 ~~prepared. All other aspects of the existing permit shall remain in effect for the duration of the~~  
1763 ~~unmodified permit and the modified permit shall expire on the date when the original permit~~  
1764 ~~would have expired.~~ When a permit is revoked and reissued ~~under this section~~, the entire permit  
1765 is reopened as if the permit has expired and is being reissued, except that suitability of the  
1766 facility location shall not be considered unless new information or standards indicate that a threat  
1767 to human health, safety, or the environment exists that was unknown at the time of permit  
1768 issuance. During any revocation and reissuance proceeding, the permittee shall comply with all  
1769 conditions of the existing permit until a new final permit is issued.

1770  
1771 **Section 8. ~~Area of Review Delineation and Corrective Action.~~ Transferring**  
1772 **Permits.**

1774 (a) ~~—The area of review is based on computational modeling that accounts for the~~  
1775 ~~physical and chemical properties of all phases of the injected carbon dioxide stream. The owner~~  
1776 ~~or operator will re-evaluate the area of review at least every two (2) years during the operational~~  
1777 ~~life of the facility, and then no less frequently than every five (5) years through the post-injection~~  
1778 ~~site care period until the geologic sequestration project is closed in accordance with department~~  
1779 ~~rules and regulations.~~

1780  
1781 (b) ~~—The owner or operator of a Class VI well must prepare, maintain, and comply~~  
1782 ~~with a plan to delineate the area of review for a proposed geologic sequestration project, re-~~  
1783 ~~evaluate the delineation, and perform corrective action that meets the requirements of this section~~  
1784 ~~and is acceptable to the Administrator. As a part of the permit application for approval by the~~  
1785 ~~Administrator, the owner or operator must submit an area of review and corrective action plan~~  
1786 ~~that includes the following information:~~

1787  
1788 (i) ~~—The method for delineating the area of review that meets the requirements~~  
1789 ~~of paragraph (c) of this section, including the name, version and availability of the model to be~~  
1790 ~~used, assumptions that will be made, and the site characterization data on which the model will~~  
1791 ~~be based;~~

1792  
1793 (ii) ~~—A description of:~~

1794  
1795 (A) ~~—The monitoring and operational conditions that would warrant a re-~~  
1796 ~~evaluation of the area of review prior to the next scheduled re-evaluation as determined by the~~  
1797 ~~minimum fixed frequency established in paragraph (a) of this section.~~

1798  
1799 (B) ~~—How monitoring and operational data (e.g., injection rate and~~  
1800 ~~pressure) will be used to evaluate the area of review; and~~

1801  
1802 (C) ~~—How corrective action will be conducted to meet the requirements~~  
1803 ~~of paragraph (c)(v) of this section, including:~~

1804  
1805 (I) ~~—What corrective action will be performed prior to injection;~~

1806  
1807 (II) ~~—What, if any, portions of the area of review will have~~  
1808 ~~corrective action addressed on a phased basis, and how the phasing will be determined;~~

1809  
1810 (III) ~~—How corrective action will be adjusted if there are changes~~  
1811 ~~in the area of review; and~~

1812  
1813 (IV) ~~—How site access will be ensured for future corrective action.~~

1814  
1815 (c) ~~—Owners or operators of Class VI wells must perform the following actions to~~  
1816 ~~delineate the area of review, identify all wells that require corrective action, and perform~~  
1817 ~~corrective action on those wells:~~

1818  
1819 (i) ~~—Predict, using existing computational modeling:~~

- 1820
- 1821                   (A) — ~~The projected lateral and vertical migration of the carbon dioxide~~
- 1822 ~~plume and formation fluids in the subsurface from the commencement of injection activities until~~
- 1823 ~~the plume movement ceases;~~
- 1824
- 1825                   (B) — ~~The pressure differentials, and demonstrate that pressure~~
- 1826 ~~differentials sufficient to cause the movement of injected fluids or formation fluids into a USDW~~
- 1827 ~~or to otherwise threaten human health, safety, or the environment will not be present (or for a~~
- 1828 ~~fixed time period as determined by the Administrator);~~
- 1829
- 1830                   (C) — ~~The potential need for brine removal, and;~~
- 1831
- 1832                   (D) — ~~The long-term effects of pressure buildup if brine is not removed.~~
- 1833
- 1834           (ii) — ~~The modeling must:~~
- 1835
- 1836                   (A) — ~~Be based on:~~
- 1837
- 1838                   (I) — ~~Detailed geologic data available or collected to characterize~~
- 1839 ~~the injection zone, confining zone and any additional zones; and~~
- 1840
- 1841                   (II) — ~~Anticipated operating data, including injection pressures,~~
- 1842 ~~rates and total volumes over the proposed operational life of the facility.~~
- 1843
- 1844                   (B) — ~~Take into account any relevant geologic heterogeneities, other~~
- 1845 ~~discontinuities, data quality, and their possible impact on model predictions; and~~
- 1846
- 1847                   (C) — ~~Consider potential migration through faults, fractures, and artificial~~
- 1848 ~~penetrations.~~
- 1849
- 1850           (iii) — ~~Using methods approved by the Administrator, identify all penetrations,~~
- 1851 ~~including active and abandoned wells and underground mines, in the area of review that may~~
- 1852 ~~penetrate the confining zone. Provide a description of each well's type, construction, date drilled,~~
- 1853 ~~location, depth, record of plugging and/or completion, and any additional information the~~
- 1854 ~~Administrator may require; and~~
- 1855
- 1856           (iv) — ~~Determine which abandoned wells in the area of review have been~~
- 1857 ~~plugged in a manner that prevents the movement of:~~
- 1858
- 1859                   (A) — ~~Carbon dioxide that may endanger USDWs or otherwise threaten~~
- 1860 ~~human health, safety, or the environment; or~~
- 1861
- 1862                   (B) — ~~Displaced formation fluids, or other fluids, including the use of~~
- 1863 ~~materials compatible with the carbon dioxide stream, that may endanger USDWs or otherwise~~
- 1864 ~~threaten human health, safety, or the environment.~~
- 1865

1866 ~~(v) — Owners or operators of Class VI wells that are determined to need~~  
1867 ~~corrective action using methods that are approved by the Administrator, must perform corrective~~  
1868 ~~action on all wells in the area of review to prevent the movement of fluid into or between~~  
1869 ~~USDWs including use of materials compatible with the carbon dioxide stream, where~~  
1870 ~~appropriate.~~

1871  
1872 ~~(d) — At a fixed frequency, not to exceed two (2) years during the operational life of the~~  
1873 ~~facility, or five (5) years during the post-injection site care period (until site closure) as specified~~  
1874 ~~in the area of review and corrective action plan, or when monitoring and operational conditions~~  
1875 ~~warrant, owners or operators must:~~

1876  
1877 ~~(i) — Re-evaluate the area of review in the same manner specified in paragraph~~  
1878 ~~(e)(i) of this section;~~

1879  
1880 ~~(ii) — Identify all wells in the re-evaluated area of review that require corrective~~  
1881 ~~action in the same manner specified in paragraph (e)(iv) of this section;~~

1882  
1883 ~~(iii) — Perform corrective action on wells requiring corrective action in the~~  
1884 ~~reevaluated area of review in the same manner specified in paragraph (e)(v) of this section; and~~

1885  
1886 ~~(iv) — Submit an amended area of review and corrective action plan or~~  
1887 ~~demonstrate to the Administrator through monitoring data and modeling results that no change to~~  
1888 ~~the area of review and corrective action plan is needed.~~

1889  
1890 ~~(A) — Any amendments to the area of review and corrective action plan~~  
1891 ~~must be approved by the Administrator;~~

1892  
1893 ~~(B) — Any amendments to the area of review must be incorporated into~~  
1894 ~~the permit; and~~

1895  
1896 ~~(C) — Any amendments to the area of review are subject to the permit~~  
1897 ~~modification requirements of Section 4 of this chapter, as appropriate.~~

1898  
1899 ~~(e) — The emergency and remedial response plan (as required by Section 18 of this~~  
1900 ~~chapter) and a demonstration of financial responsibility (as described by Section 19 of this~~  
1901 ~~chapter) must account for the entire area of review (as modified), regardless of whether or not~~  
1902 ~~corrective action in the area of review is phased.~~

1903  
1904 ~~(f) — All modeling inputs and data used to support area of review reevaluations under~~  
1905 ~~paragraph (d) of this section shall be retained for ten (10) years.~~

1906  
1907 (a) To transfer a permit:

1908  
1909 ~~(formerly Section 4(b)(xvi))(A)(i)~~ The proposed permit ~~holder~~ transferee shall  
1910 apply in writing as though that person ~~was~~ were the original applicant for the permit; and

1912 ~~(formerly Section 4(b)(xvi))(A)(ii)~~ The proposed permit transferee shall ~~further~~  
1913 agree to be bound by all of the terms and conditions of the permit.

1914  
1915 ~~(formerly Section 4(b)(xvi))(b)~~ Transfer of a permit is allowed only upon approval  
1916 by the Administrator.

1917  
1918 ~~(formerly Section 4(b)(xvi))(c)~~ When a permit transfer occurs pursuant to this  
1919 section, the permit rights of the previous permittee ~~will~~ automatically terminate.

1920  
1921 ~~(formerly Section 4(b)(xvi))(B)(d)~~ Transfer ~~will~~ shall not be allowed if the permittee is  
1922 in noncompliance with any term and conditions of the permit; unless the transferee agrees to  
1923 bring the facility back into compliance with the permit.

1924  
1925 ~~(formerly Section 4(b)(xvi))(D)(e)~~ A permit may be transferred by modifying the  
1926 permit or by revoking and reissuing the permit ~~the permittee to a new owner or operator only if~~  
1927 ~~the permit has been modified or revoked and reissued (under paragraph (xiii) of this subsection),~~  
1928 ~~or a minor modification made (under paragraph (xii) of this subsection),~~ to identify the new  
1929 permittee and incorporate ~~such other requirements as may be necessary under the Safe Drinking~~  
1930 ~~Water Act~~ the requirements of this Chapter and the Wyoming Environmental Quality Act, W.S.  
1931 § 35-11-101 et seq.

1932  
1933 **Section 9. ~~Construction and Operation Standards for Class VI Wells.~~ Permit**  
1934 **Conditions.**

1935  
1936 ~~(a) — The owner or operator must ensure that all Class VI wells are designed, at a~~  
1937 ~~minimum, to the construction standards set forth by the Department and the Wyoming Oil and~~  
1938 ~~Gas Conservation Commission, as applicable, and constructed and completed to:~~

1939  
1940 ~~(i) — Prevent the movement of fluids into or between USDWs or into any~~  
1941 ~~unauthorized zones;~~

1942  
1943 ~~(ii) — Permit the use of appropriate testing devices and workover tools; and~~

1944  
1945 ~~(iii) — Permit continuous monitoring of the annulus space between the injection~~  
1946 ~~tubing and long string casing.~~

1947  
1948 ~~(b) — Casing and cement or other materials used in the construction of each Class VI~~  
1949 ~~well must have sufficient structural strength and be designed for the life of the well.~~

1950  
1951 ~~(i) — All well materials must be compatible with fluids with which the materials~~  
1952 ~~may be expected to come into contact, and meet or exceed standards developed for such~~  
1953 ~~materials by the American Petroleum Institute, ASTM International, or comparable standards~~  
1954 ~~acceptable to the Administrator.~~

1955  
1956 ~~(ii) — The casing and cementing program must be designed to prevent the~~  
1957 ~~movement of fluids into or between USDWs.~~

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~~(iii) In order to allow the Administrator to determine and specify casing and cementing requirements, the owner or operator must provide the following information:~~

- ~~(A) Depth to the injection zone;~~
- ~~(B) Injection pressure, external pressure, internal pressure, and axial loading;~~
- ~~(C) Hole size;~~
- ~~(D) Size and grade of all casing strings (wall thickness, external diameter, nominal weight, length, joint specification and construction material), including whether the casing is new, or used;~~
- ~~(E) Corrosiveness of the carbon dioxide stream and formation fluids;~~
- ~~(F) Down-hole temperatures and pressures;~~
- ~~(G) Lithology of injection and confining zones;~~
- ~~(H) Type or grade of cement and additives; and~~
- ~~(I) Quantity, chemical composition, and temperature of the carbon dioxide stream.~~

~~(iv) Casing must extend through the base of the lowermost USDW above the injection zone and be cemented to the surface through the use of a single or multiple strings of casing and cement.~~

~~(v) At least one (1) long string casing, using a sufficient number of centralizers, must be set in a manner so as to create a cement bond through the overlying and/or underlying confining zones(s). The long string casing must extend to the injection zone, must be cemented by circulating cement to the surface in one (1) or more stages, and must be isolated by placing cement and/or other isolation techniques as necessary to provide adequate isolation of the injection zone and provide for protection of USDWs, human health, safety, and the environment.~~

~~(A) Circulation of cement may be accomplished by staging. The Administrator may approve an alternative method of cementing in cases where the cement cannot be recirculated to the surface, provided the owner or operator can demonstrate by using logs that the cement does not allow fluid movement behind the wellbore.~~

~~(vi) Cement and cement additives must be suitable for use with the carbon dioxide stream and formation fluids and of sufficient quality and quantity to maintain integrity over the operating life of the well.~~

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~~(vii) — The integrity and location of the cement shall be verified using technology capable of evaluating cement quality radially with sufficient resolution to identify the location of channels, voids, or other areas of missing cement to ensure that USDWs are not endangered and that human health, safety, and the environment are protected.~~

~~(e) — All owners and operators of Class VI wells must inject fluids through tubing with a packer set at a depth opposite a cemented interval at the location approved by the Administrator.~~

~~(i) — Tubing and packer materials used in the construction of each Class VI well must be compatible with fluids with which the materials may be expected to come into contact and must meet or exceed standards developed for such materials by the American Petroleum Institute, ASTM International, or comparable standards acceptable to the Administrator.~~

~~(ii) — In order for the Administrator to determine and specify requirements for tubing and packer, the owner or operator must submit the following information:~~

~~(A) — Depth of setting;~~

~~(B) — Characteristics of the carbon dioxide stream (e.g., chemical content, corrosiveness, temperature, and density) and formation fluids;~~

~~(C) — Maximum proposed injection pressure;~~

~~(D) — Maximum proposed annular pressure;~~

~~(E) — Maximum proposed injection rate (intermittent or continuous) and volume of the carbon dioxide stream;~~

~~(F) — Size of tubing and casing; and~~

~~(G) — Tubing tensile, burst, and collapse strengths.~~

~~(formerly Section 4(e)(i))~~(a) Permit conditions shall be incorporated either expressly or by reference. If incorporated by reference, a specific citation to the incorporated conditions ~~must~~ shall be given in the permit.

~~(formerly Section 4(e)(i))~~(b) All ~~individual~~ permits issued under this ~~e~~Chapter shall contain the following conditions:

~~(formerly Section 4(e)(i)(A))~~(i) A requirement that the permittee ~~comply~~ complies with all conditions of the permit, and a statement that any permit noncompliance constitutes a violation of these regulations and is grounds for enforcement action, permit

2049 termination, revocation and reissuance, or modification, or for denial of a permit renewal  
2050 application;

2051  
2052 ~~(formerly Section 4(e)(i)(B))~~(ii) A requirement that if the permittee wishes to  
2053 continue injection activity after the expiration date of the permit, the permittee ~~must~~ shall apply  
2054 to the Administrator for, and obtain, a new permit prior to expiration of the existing permit;

2055  
2056 ~~(formerly Section 4(e)(i)(C))~~(iii) A stipulation that it shall not be a defense  
2057 for a permittee in an enforcement action that it would have been necessary to halt or reduce the  
2058 permitted activity in order to maintain compliance with the conditions of this permit;

2059  
2060 ~~(formerly Section 4(e)(i)(D))~~(iv) A requirement that the permittee shall take  
2061 all reasonable steps to minimize or correct any adverse impact on the environment resulting from  
2062 noncompliance with this permit;

2063  
2064 ~~(formerly Section 4(e)(i)(E))~~(v) A requirement that the permittee properly  
2065 operates and maintains all facilities and systems of treatment and control, and related  
2066 appurtenances, that are installed or used by the permittee to achieve compliance with the  
2067 conditions of this permit. Proper operation and maintenance includes effective performance,  
2068 adequate funding and operator staffing and training, and adequate laboratory and process  
2069 controls including appropriate quality assurance procedures. This provision requires the  
2070 operation of back-up or auxiliary facilities or similar systems only when necessary to achieve  
2071 compliance with the conditions of the permit;

2072  
2073 ~~(formerly Section 4(e)(i)(F))~~(vi) A stipulation that the filing of a request by  
2074 the permittee, or at the instigation of the Administrator, for a permit modification, revocation,  
2075 termination, or notification of planned changes or anticipated non-compliance, shall not stay any  
2076 permit condition;

2077  
2078 ~~(formerly Section 4(e)(i)(G))~~(vii) A stipulation that ~~this~~ the permit does not  
2079 convey any property rights of any sort, or any exclusive privilege;

2080  
2081 ~~(formerly Section 4(e)(i)(H))~~(viii) A stipulation that the permittee shall furnish  
2082 to the Administrator, within a specified time, any information that the Administrator ~~may~~  
2083 requests to determine whether cause exists for modifying, revoking and reissuing, or terminating  
2084 the permit, or to determine compliance with the permit. The permittee shall also furnish to the  
2085 Administrator, upon request, copies of records required to be kept by the permit;

2086  
2087 ~~(formerly Section 4(e)(i)(I))~~(ix) A requirement that the permittee shall allow  
2088 the Administrator, or an authorized representative of the Administrator, upon the presentation of  
2089 credentials, during normal working hours, to enter the premises where a regulated facility is  
2090 located, or where records are kept under the conditions of this permit, and;

2091  
2092 ~~(formerly Section 4(e)(i)(I)(I))~~(A) Inspect the discharge and related  
2093 facilities, practices, or operations regulated or required under this permit;

2094

2095 ~~(formerly Section 4(e)(i)(I)(II))(B)~~ Review and copy reports and records  
2096 required by the permit;

2097  
2098 ~~(formerly Section 4(e)(i)(I)(III))(C)~~ Collect fluid samples for analysis for  
2099 the purposes of ~~assuring~~ ensuring permit compliance or as otherwise authorized by the ~~SDWA,~~  
2100 Wyoming Environmental Quality Act of any substances or parameters at any location;

2101  
2102 ~~(formerly Section 4(e)(i)(I)(IV))(D)~~ Measure and record water levels; ~~and~~

2103  
2104 (E) Collect resource data as defined by W.S. § 6-3-414; and

2105  
2106 ~~(formerly Section 4(e)(i)(I)(V))(F)~~ Perform any other function  
2107 authorized by law or regulation.

2108  
2109 (x) A requirement that:

2110  
2111 (A) If the facility is located on property not owned by the permittee,  
2112 the permittee shall also secure from the landowner upon whose property the facility is located  
2113 permission for Department personnel and their invitees to enter the premises where the facility is  
2114 located, or where records are kept under the conditions of this permit, and collect resource data  
2115 as defined by W.S. § 6-3-414, inspect and photograph the facility, collect samples for analysis,  
2116 review records, and perform any other function authorized by law or regulation. The permittee  
2117 shall secure and maintain such access for the duration of the permit and the post-injection site  
2118 care and site closure period; and

2119  
2120 (B) If the facility cannot be directly accessed using public roads, the  
2121 permittee shall also secure permission for Department personnel and their invitees to enter and  
2122 cross all properties necessary to access the facility. The permittee shall secure and maintain such  
2123 access for the duration of the permit and the post-injection site care and site closure period;

2124  
2125 ~~(formerly Section 4(e)(i)(J))(xi)~~ A requirement that the permittee furnishes  
2126 any information necessary to establish a testing and monitoring ~~program~~ pursuant to Section ~~14~~  
2127 20 of this ~~e~~Chapter. Conditions shall specify:

2128  
2129 ~~(formerly Section 4(e)(i)(J)(I))(A)~~ Required monitoring including type,  
2130 intervals, and frequency sufficient to yield data that are representative of the monitored activity  
2131 including when appropriate, continuous monitoring;

2132  
2133 ~~(formerly Section 4(e)(i)(J)(II))(B)~~ Requirements concerning the proper  
2134 use, maintenance, and installation, ~~when appropriate,~~ of monitoring equipment or methods,  
2135 including biological monitoring methods ~~when appropriate;~~ and

2136  
2137 ~~(formerly Section 4(e)(i)(J)(III))(C)~~ ~~Applicable r~~Reporting and notice  
2138 requirements based upon the impact of the regulated activity and as specified in Section ~~15~~ 22 of  
2139 this ~~e~~Chapter. Reporting shall be no less frequent than specified in ~~the above regulations.~~ Section  
2140 22 of this Chapter;

- 2141  
2142           ~~(formerly Section 4(e)(i)(K))(xii)~~ (xii)     A requirement that all samples and  
2143 measurements taken for the purpose of monitoring shall be representative of the monitored  
2144 activity and that records of all monitoring information be retained by the permittee. ~~The~~  
2145 ~~monitoring information to be retained shall be that information stipulated in the monitoring~~  
2146 ~~program established pursuant to the criteria in Section 14 of this chapter;~~  
2147  
2148           ~~(formerly Section 4(e)(i)(L))(xiii)~~ (xiii)     A requirement that all applications, reports,  
2149 and other information submitted to the Administrator contain the certifications ~~as~~ required in  
2150 Section ~~5(i)~~ 10(d) of this ~~e~~Chapter ~~by a responsible corporate officer, and be signed by a person~~  
2151 ~~who meets the requirements to sign permit applications found in Section 5(h), or for routine~~  
2152 ~~reports, a duly authorized representative;~~  
2153  
2154           ~~(formerly Section 4(e)(i)(M))(xiv)~~ (xiv)     A requirement that the permittee give  
2155 advance notice to the Administrator as soon as possible of any planned physical alteration or  
2156 additions, other than authorized operation and maintenance, to the permitted facility and receive  
2157 authorization from the Administrator prior to implementing the proposed alteration or addition;  
2158  
2159           ~~(formerly Section 4(e)(i)(N))(xv)~~ (xv)     A requirement that any modification that  
2160 may result in a violation of a permit condition shall be reported to the Administrator, and any  
2161 modification that will result in a violation of a permit condition shall be reported to the  
2162 Administrator through the submission of a new or amended permit application;  
2163  
2164           ~~(formerly Section 4(e)(i)(O))(xvi)~~ (xvi)     A requirement that any transfer of a permit  
2165 ~~must~~ shall first be approved by the Administrator, and that no transfer will be approved if the  
2166 facility is not in compliance with the existing permit unless the proposed permittee agrees to  
2167 bring the facility into compliance;  
2168  
2169           ~~(formerly Section 4(e)(i)(P))(xvii)~~ (xvii)     A requirement that monitoring results shall  
2170 be reported at the intervals specified ~~elsewhere~~ in the permit;  
2171  
2172           ~~(formerly Section 4(e)(i)(Q))(xviii)~~ (xviii)     A requirement that reports of compliance or  
2173 non-compliance, or any progress reports on interim and final requirements contained in any  
2174 compliance schedule, ~~(if one is required by the Administrator,)~~ shall be submitted no later than  
2175 thirty (30) days following each schedule date;  
2176  
2177           ~~(formerly Section 4(e)(i)(R))(xix)~~ (xix)     ~~A requirement that the permittee shall report~~  
2178 The following reporting and mitigation requirements:  
2179  
2180                   ~~(formerly Section 4(e)(i)(R)(I))(A)~~ (A)     ~~If A~~ any monitoring or other  
2181 information ~~that~~ indicates that any contaminant, ~~may cause an endangerment to a USDW or~~  
2182 ~~indicates that~~ the injected carbon dioxide stream, displaced formation fluids, or associated  
2183 pressure front may endanger a USDW or threaten human health, safety, or the environment. ~~In~~  
2184 ~~addition,~~ the ~~owner or operator~~ permittee shall:  
2185  
2186                                   ~~(formerly Section 4(e)(i)(R)(I)(1.))~~ (I) Immediately cease injection;

2187  
2188 ~~(formerly Section 4(e)(i)(R)(I)(2.))~~(II) Take all steps  
2189 reasonably necessary to identify and characterize any release; ~~and~~  
2190  
2191 ~~(formerly Section 4(e)(i)(R)(I)(3.))~~(III) Orally ~~N~~otify the  
2192 Administrator within twenty-four (24) hours: of discovering the condition; and  
2193  
2194 ~~formerly Section 4(e)(i)(R)(II))~~(IV) Provide a written ~~submission~~  
2195 report shall be provided to the Administrator within five (5) days of ~~the time the permittee~~  
2196 ~~becomes aware of discovering any excursion or indication that a contaminant may cause an~~  
2197 ~~endangerment to a USDW~~ the condition. The written ~~submission report~~ shall contain:  
2198  
2199 ~~formerly Section 4(e)(i)(R)(II)(1.))~~(1.) \_\_\_\_\_ A description  
2200 of the ~~noncompliance~~ endangerment and its cause;  
2201  
2202 ~~formerly Section 4(e)(i)(R)(II)(2.))~~(2.) \_\_\_\_\_ The period of  
2203 ~~noncompliance~~ endangerment, including exact dates and times, and, if the ~~noncompliance~~  
2204 endangerment has not been controlled, the anticipated time it is expected to continue; and  
2205  
2206 ~~formerly Section 4(e)(i)(R)(II)(3.))~~(3.) \_\_\_\_\_ The Steps taken or  
2207 planned to reduce, eliminate, and prevent reoccurrence of the ~~noncompliance~~ endangerment;  
2208  
2209 ~~formerly Section 4(e)(i)(R)(II))~~(B) If the permittee discovers ~~A~~ny  
2210 noncompliance with a permit condition or a requirement of this Chapter that may cause fluid  
2211 migration into or between USDWs, or any malfunction of the injection system that may cause  
2212 fluid migration into or between USDWs, or if any excursion, is discovered the permittee shall;  
2213  
2214 ~~formerly Section 4(e)(i)(R)(II)(I))~~(I) \_\_\_\_\_ ~~It shall be o~~Orally reported to  
2215 notify the Administrator within twenty-four (24) hours ~~from the time the permittee becomes~~  
2216 ~~aware of the circumstances; of discovering the condition~~;  
2217  
2218 ~~formerly Section 4(e)(i)(R)(II))~~(II) \_\_\_\_\_ and Provide a written  
2219 submission report to the Administrator shall be provided within five (5) days of ~~the time the~~  
2220 ~~permittee becomes aware of any excursion or indication that a contaminant may cause an~~  
2221 ~~endangerment to a USDW~~ discovering the condition, which ~~The written submission~~ shall  
2222 contain:  
2223  
2224 ~~formerly Section 4(e)(i)(R)(II)(1.))~~(1.) \_\_\_\_\_ A description of the  
2225 noncompliance, malfunction, or excursion and its cause;  
2226  
2227 ~~formerly Section 4(e)(i)(R)(II)(2.))~~(2.) \_\_\_\_\_ The period of  
2228 noncompliance, malfunction, or excursion, including exact dates and times, and, if the  
2229 noncompliance, malfunction, or excursion has not been controlled, the anticipated time it is  
2230 expected to continue; and  
2231

2232 ~~formerly Section 4(e)(i)(R)(II)(3-)(3.)~~ The Ssteps taken or  
2233 planned to reduce, eliminate, and prevent reoccurrence of the noncompliance, malfunction, or  
2234 excursion.

2235 .  
2236 ~~formerly Section 4(e)(i)(R)(III)(III)~~ In addition, if an excursion is  
2237 discovered, ~~the owner or operator shall~~ provide written notice to all surface owners, mineral  
2238 claimants, mineral owners, lessees, and other owners of record of subsurface interests within  
2239 thirty (30) days of ~~discovery-~~discovering the excursion; and

2240  
2241 ~~formerly Section 18(b)(v)(IV)~~ Implement the emergency and  
2242 remedial response plan approved by the Administrator;

2243  
2244 ~~(formerly Section 4(e)(i)(S))(xx)~~ A requirement that the permittee report all  
2245 instances of noncompliance not already required to be reported under ~~paragraphs (e)(i)(Q)~~  
2246 ~~through (R)~~ subparagraph (b)(xix)(B) of this ~~s~~Section, at the time monitoring reports are  
2247 submitted. The reports shall contain the information listed in ~~paragraph (e)(i)(R)~~ subparagraph  
2248 (b)(xix)(B)(II) of this ~~s~~Section;

2249  
2250 ~~(formerly Section 4(e)(i)(T))(xxi)~~ A requirement that if the permittee becomes  
2251 aware that it failed to submit any relevant facts in a permit application, or submitted incorrect  
2252 information in a permit application or in any report to the Administrator, the permittee shall  
2253 promptly submit such facts or information;

2254  
2255 ~~(formerly Section 4(e)(i)(U))(xxii)~~ A requirement that the injection facility  
2256 meet construction requirements outlined in Section ~~9~~ 14 of this ~~e~~Chapter, ~~and~~ that the permittee  
2257 submit a notice of completion of construction to the Administrator; ~~;~~ and that the permittee allows  
2258 ~~for the Administrator to~~ inspect ~~of~~ the facility upon completion of construction; ~~and~~ prior to  
2259 commencing any underground injection activity;

2260  
2261 ~~(formerly Section 4(e)(i)(V))(xxiii)~~ A requirement that the permittee ~~notify~~  
2262 notifies the Administrator ~~at such times as the permit requires~~ before conversion or abandonment  
2263 of the facility;

2264  
2265 ~~(formerly Section 4(e)(i)(W))(xxiv)~~ A requirement that injection ~~may~~ shall not  
2266 commence until construction is complete: ~~;~~ and that ~~C~~construction is complete when:

2267  
2268 ~~(formerly Section 4(e)(i)(W)(I))(A)~~ The permittee has submitted a notice  
2269 of completion of construction to the Administrator; and

2270  
2271 ~~(formerly Section 4(e)(i)(W)(II))(B)~~ The Administrator has inspected or  
2272 ~~otherwise~~ reviewed the injection well and ~~finds~~ found it is in compliance with the conditions of  
2273 the permit; ~~;~~

2274  
2275 ~~(formerly Section 4(e)(i)(W)(II))(I)~~ Within thirteen (13) days of  
2276 the date of the notice in subparagraph (xxii) of this paragraph, the Administrator shall provide  
2277 notice to the permittee of the ~~or the permittee has not received notice from the Administrator of~~

2278 ~~their~~ intent to inspect or ~~otherwise~~ review the injection well, ~~within thirteen (13) days of the date~~  
2279 ~~of the notice in subparagraph (U) of this paragraph.~~The notice shall include a reasonable time  
2280 period in which the Administrator shall inspect or review the well; but

2281  
2282 ~~(formerly Section 4(e)(i)(W)(II))~~(II) If the Administrator does not  
2283 provide the notice required by subparagraph (I) of this subparagraph, the requirement for ~~in~~  
2284 which case prior inspection or review is waived, and the permittee may commence injection;  
2285 ~~The Administrator shall include in his notice a reasonable time period in which they shall inspect~~  
2286 ~~the well.~~

2287  
2288 ~~(formerly Section 4(e)(i)(X))~~(xxv) A requirement that the ~~owner or~~  
2289 ~~operator of a Class VI well permitted under this part~~ permittee shall establish mechanical  
2290 integrity prior to commencing injection or on a schedule determined by the Administrator; and  
2291 that ~~T~~thereafter, the ~~owner or operator of a Class VI wells~~ permittee must shall maintain  
2292 mechanical integrity as defined in Section ~~13~~ 19 of this ~~e~~Chapter;

2293  
2294 ~~(formerly Section 4(e)(i)(Y))~~(xxvi) A requirement that ~~when if~~ the  
2295 Administrator determines that a Class VI well lacks mechanical integrity ~~pursuant to Section 13~~  
2296 ~~of this chapter, he/she shall~~ and gives written notice of ~~his/her~~ the determination to the ~~owner or~~  
2297 ~~operator.~~permittee, the permittee shall:

2298  
2299 ~~(formerly Section 4(e)(i)(Y)(I)(A))~~ Unless the Administrator  
2300 ~~requires immediate cessation, the owner or operator shall~~ cease injection into the well within  
2301 forty-eight (48) hours of receipt of the Administrator's determination; ~~unless the Administrator~~  
2302 requires immediate cessation;

2303  
2304 ~~(formerly Section 4(e)(i)(Y)(II)(B))~~ The Administrator may allow  
2305 ~~plugging of the well pursuant to the requirements of Section 16 of this chapter or require the~~  
2306 ~~permittee to p~~erform such additional any construction, operation, monitoring, reporting, and  
2307 corrective action ~~as is necessary~~ that the Administrator requires to prevent the movement of fluid  
2308 into or between USDWs caused by the lack of mechanical integrity; ~~or plug the well pursuant to~~  
2309 the requirements of Section 23 of this Chapter if allowed by the Administrator; and

2310  
2311 ~~(formerly Section 4(e)(i)(Y)(II)(C))~~ The owner or operator may  
2312 ~~resume injection upon written notification from the Administrator.~~ Not resume injection into the  
2313 well until the Administrator provides written notice that the ~~owner or operator~~ permittee has  
2314 demonstrated mechanical integrity pursuant to Section ~~13~~ 19 of this ~~e~~Chapter.

2315  
2316 ~~(formerly Section 4(e)(i)(Z))~~(xxvii) A requirement that, for any Class VI  
2317 well that lacks mechanical integrity, injection operations are prohibited until the permittee shows  
2318 to the satisfaction of the Administrator under Section ~~13~~ 19 of this ~~e~~Chapter that the well has  
2319 mechanical integrity;:

2320  
2321 ~~(formerly Section 4(e)(i)(AA))~~(xxviii) A Class VI permit shall  
2322 ~~include conditions that meet the requirements set forth in Section 16 of this chapter. Where the~~  
2323 ~~plan meets the requirements of Section 16 of this chapter, A requirement that the permittee~~

2324 comply with a well-plugging plan that meets the requirements of Section 23 of this Chapter,  
2325 which the Administrator shall be incorporated into the permit as a permit condition; and  
2326 ~~Temporary or intermittent cessation of injection operations is not abandonment.~~

2327  
2328 ~~(formerly Section 4(e)(i)(BB))(xxix) Class VI injection well permits shall~~  
2329 ~~include e~~Conditions meeting that implement the requirements of Section 9 14 of this eChapter.  
2330 ~~Permits shall contain the following requirements when applicable~~ The conditions shall:

2331  
2332 ~~(formerly Section 4(e)(i)(BB)(I))(A) Require A~~all wells shall to  
2333 achieve compliance with ~~such~~ the requirements of Section 14 of this Chapter according to a  
2334 compliance schedule established as a permit condition; ~~The owner or operator of a proposed~~  
2335 ~~new injection well shall submit plans for testing, drilling, and construction as part of the permit~~  
2336 ~~application.~~

2337  
2338 ~~(formerly Section 4(e)(i)(BB)(II))(B) Prohibit No~~ construction ~~may~~  
2339 from commencing until a permit has been issued containing construction requirements;:

2340  
2341 ~~(formerly Section 4(e)(i)(BB)(III))(C) Require that A~~all  
2342 wells ~~shall be in compliance~~ comply with these construction requirements of Section 14 of this  
2343 Chapter prior to commencing injection operations; ~~Changes in construction plans during~~  
2344 ~~construction may be approved by the Administrator as minor modifications. No such changes~~  
2345 ~~may be physically incorporated into construction of the well prior to approval of the modification~~  
2346 ~~by the Administrator.~~

2347  
2348 ~~(formerly Section 4(e)(i)(BB)(IV))(D) Include a C~~corrective  
2349 action plan as set forth in Section 8 13 of this eChapter;:

2350  
2351 ~~(formerly Section 4(e)(i)(BB)(V))(E) Require that all wells comply~~  
2352 with the Ooperational requirements ~~as set forth in~~ of Section 9 14 of this eChapter;

2353  
2354 ~~(formerly Section 4(e)(i)(BB)(V))(F) the permit shall e~~Establish  
2355 any maximum injection volumes and/or pressures necessary to ensure that fractures are not  
2356 initiated in the confining zone, to ensure that injected fluids do not migrate into any underground  
2357 source of drinking water, to ensure that formation fluids are not displaced into any underground  
2358 source of drinking water, and to ensure compliance with the operating requirements;:

2359  
2360 ~~(formerly Section 4(e)(i)(BB)(VI))(G) Establish~~  
2361 Monitoring and reporting requirements ~~as~~ set forth in Sections 14 20 and 15 22 of this  
2362 eChapter. The permittee shall be required to identify types of tests and methods used to generate  
2363 the monitoring data; and

2364  
2365 ~~(formerly Section 4(e)(i)(BB)(VII))(H) The owner or operator~~  
2366 ~~of a Class VI well must~~ Require the permittee to comply with the financial responsibility  
2367 requirements set forth in Section 19 26 of this eChapter.

2368

2369 ~~(formerly Section 4(a)(v)(c))~~ Permits for Class VI wells shall be issued for the operating  
2370 life of the facility and extend through the post-injection site care period until the ~~geologic~~  
2371 ~~sequestration project is closed in accordance with Department rules and regulations~~  
2372 Administrator certifies site closure pursuant to Section 24(b)(iii) of this Chapter.  
2373

2374 ~~(formerly Section 4(a)(vi)(d))~~ Permits may be issued for individual Class VI wells and  
2375 shall not be issued on an area basis for multiple points of discharge operated by the same person.  
2376

2377 ~~(formerly Section 4(e)(i)(CC))(e)~~ ~~The p~~Permits may, ~~when appropriate,~~ specify a  
2378 schedule of compliance leading to compliance with ~~the SDWA and 40 CFR Parts 144, 145, 146,~~  
2379 ~~and 124 permit conditions, this Chapter, and the Wyoming Environmental Quality Act, W.S. §~~  
2380 35-11-101 et seq.  
2381

2382 ~~(formerly Section 4(e)(i)(CC)(I))(i)~~ ~~Any s~~Schedules of compliance shall require  
2383 compliance as soon as possible, and in no case later than three (3) years after the effective date of  
2384 the permit.  
2385

2386 ~~(formerly Section 4(e)(i)(CC)(II))(ii)~~ If a permit establishes a schedule of  
2387 compliance that exceeds one (1) year from the date of permit issuance, the schedule shall set  
2388 forth interim requirements and the dates for their achievement. ~~(formerly Section~~  
2389 ~~4(e)(i)(CC)(II)(1.))~~ The time between interim dates shall not exceed one (1) year unless,  
2390 ~~(formerly Section 4(e)(i)(CC)(II)(2.))~~ ~~T~~he time necessary for completion of any interim  
2391 requirement is more than one (1) year and is not readily divisible into stages for completion, and  
2392 in that case, the permit shall specify interim dates for the submission of reports of progress  
2393 toward completion of the interim requirements and indicate a projected completion date.  
2394

2395 ~~(formerly Section 4(e)(i)(III))(iii)~~ The permit compliance schedule shall ~~be~~  
2396 ~~written to~~ require ~~that if paragraph (e)(i)(CC)(I) of this section is applicable,~~ the permittee to  
2397 submit progress reports ~~be submitted~~ no later than thirty (30) days following each interim date  
2398 and the final date of compliance.  
2399

2400 ~~(formerly Section 4(e)(ii))(f)~~ ~~In addition to the conditions required of all permits, t~~The  
2401 Administrator shall ~~establish~~ include in permits, on a case-by-case basis;  
2402

2403 ~~(formerly Section 4(e)(ii))(i)~~ ~~e~~Conditions ~~as required~~ for monitoring, schedules  
2404 of compliance, and ~~such any~~ additional conditions ~~as are~~ necessary to prevent the migration of  
2405 fluids into underground sources of drinking water. ~~In the case of wells authorized by permit,~~  
2406 ~~these additional requirements shall be imposed by modifying the permit in accordance with this~~  
2407 ~~section, or the permit may be terminated under this section if cause exists, or appropriate~~  
2408 ~~enforcement action may be taken if the permit has been violated.~~The Administrator shall  
2409 evaluate what conditions are necessary and shall establish these conditions when issuing,  
2410 modifying, or revoking and reissuing permits; and  
2411

2412 ~~(formerly Section 4(e)(iii))(ii)~~~~In addition to conditions required in all permits the~~  
2413 ~~Administrator shall establish e~~Conditions ~~in permits as required on a case-by-case basis,~~ to  
2414 ~~provide for and~~ ensure compliance with all applicable requirements of ~~the SDWA and 40 CFR~~

2415 ~~Parts 144, 145, 146, and 124~~ this Chapter and the Wyoming Environmental Quality Act, W.S. §  
2416 35-11-101 et seq.

2417  
2418 ~~(formerly Section 4(e)(iv))~~ (g) ~~New permits, and t~~ To the extent ~~allowed possible~~ under  
2419 Section ~~4 9 of this Chapter~~, modified or revoked and reissued permits, shall incorporate ~~each of~~  
2420 ~~the applicable requirements referenced~~ all of the permit conditions required in by this ~~s~~Section.  
2421 ~~An applicable requirement is a State statutory or regulatory requirement that takes effect prior to~~  
2422 ~~final administrative disposition of the permit. An applicable requirement is also any requirement~~  
2423 ~~that takes effect prior to the modification or revocation and reissuance of a permit, to the extent~~  
2424 ~~allowed in Section 4.~~

2425  
2426 (h) When they meet the requirements of this Chapter and are approved by the  
2427 Administrator, the following plans shall be incorporated into the permit:

2428  
2429 ~~(formerly Section 5(b)(xviii))~~ (i) ~~Proposed s~~Stimulation programs, ~~a~~  
2430 ~~description of stimulation fluids to be used, and a determination that stimulation will not~~  
2431 ~~compromise containment. All stimulation programs must be approved by the Administrator as~~  
2432 ~~part of the permit application and incorporated into the permit; required by Section 10(b)(xx) of~~  
2433 ~~this Chapter; and~~

2434  
2435 ~~(formerly Section 5(b)(xxviii))~~ (ii) ~~Proposed i~~Injection and monitoring well ~~(s)~~  
2436 ~~plugging plans required by Sections 16(b) 10(b)(xxx) and 23(b) of this e~~Chapter; ~~where the plan~~  
2437 ~~meets the requirements of Section 16(b) of this c~~Chapter, the Administrator shall incorporate it  
2438 ~~into the permit as a permit condition.~~

2439  
2440 **Section 10. ~~Class VI Injection Depth Waiver Requirements.~~ Permit Application.**

2441  
2442 ~~(a) The owner and/or operator seeking a waiver of the requirement to inject below the~~  
2443 ~~lowermost USDW shall submit a supplemental report concurrent with the permit application.~~  
2444 ~~The report shall contain the following:~~

2445  
2446 ~~————— (i) A demonstration that the injection zones are laterally continuous, is not a~~  
2447 ~~USDW, and is not hydraulically connected to USDWs; does not outcrop within the area of~~  
2448 ~~review; has adequate injectivity, volume, and sufficient porosity to safely contain the injected~~  
2449 ~~carbon dioxide and formation fluids; and has appropriate geochemistry.~~

2450  
2451 ~~————— (ii) A demonstration that the injection zones are bounded by laterally~~  
2452 ~~continuous, impermeable confining units above and below the injection zones adequate to~~  
2453 ~~prevent fluid movement and pressure buildup outside of the injection zones; and that the~~  
2454 ~~confining unit(s) is/are free of transmissive faults and fractures. The report shall further~~  
2455 ~~characterize the regional fracture properties and contain a demonstration that the fractures will~~  
2456 ~~not interfere with injection, serve as conduits, or endanger USDWs.~~

2457  
2458 ~~————— (iii) A computer model demonstrating that USDWs above and below the~~  
2459 ~~injection zone will not be endangered as a result of fluid movement. The modeling shall be done~~  
2460 ~~in conjunction with the area of review determination, as described in Section 8 of this chapter;~~

2461 and is subject to requirements, as described in Section 8(c) of this chapter, and periodic  
2462 reevaluation, as described in Section 8(d) of this chapter.

2463  
2464 (iv) — A demonstration that well design and construction, in conjunction with the  
2465 waiver, will ensure isolation of the injectate in lieu of the requirements of Section 9(a)(i) of this  
2466 chapter and will meet the well construction requirements of paragraph (f) of this section.

2467  
2468 (v) — A description of how the monitoring and testing and any additional plans  
2469 will be tailored to this geologic sequestration project to ensure protection of USDWs above and  
2470 below the injection zone.

2471  
2472 (vi) — Information on the location of all public water supplies affected,  
2473 reasonably likely to be affected, or served by USDWs in the area of review.

2474  
2475 (vii) — Any other information requested by the Administrator.

2476  
2477 (b) — To inform the EPA Regional Administrator's decision on whether to grant a  
2478 waiver of the injection depth requirements of 40 CFR §§ 144.6, 146.5(f), and 146.86(a)(1), the  
2479 Administrator must submit, to the EPA Regional Administrator, documentation of the following:

2480  
2481 (i) — An evaluation of the following information as it relates to siting,  
2482 construction, and operation of a geologic sequestration project with a waiver:

2483  
2484 (A) — The integrity of the upper and lower confining units;

2485  
2486 (B) — The suitability of the injection zone(s) (e.g., lateral continuity; lack  
2487 of transmissive faults and fractures; knowledge of current or planned artificial penetrations into  
2488 the injection zone(s) or formations below the injection zone);

2489  
2490 (C) — The potential capacity of the geologic formation(s) to sequester  
2491 carbon dioxide, accounting for the availability of alternative injection sites;

2492  
2493 (D) — All other site characterization data, the proposed emergency and  
2494 remedial response plan, and a demonstration of financial responsibility;

2495  
2496 (E) — Community needs, demands, and supply from drinking water  
2497 resources;

2498  
2499 (F) — Planned needs, potential and/or future use of USDWs and non-  
2500 USDWs in the area;

2501  
2502 (G) — Planned or permitted water, hydrocarbon, or mineral resource  
2503 exploitation potential of the proposed injection formation(s) and other formations both above and  
2504 below the injection zone to determine if there are any plans to drill through the formation to  
2505 access resources in or beneath the proposed injection zone(s)/formation(s);

2506

2507 ~~\_\_\_\_\_ (H) The proposed plan for securing alternative resources or treating~~  
2508 ~~USDW formation waters in the event of contamination related to the Class VI injection activity;~~  
2509 ~~and~~  
2510 ~~\_\_\_\_\_ (I) Any other applicable considerations or information requested by~~  
2511 ~~the Administrator.~~  
2512  
2513 ~~\_\_\_\_\_ (ii) Consultation with the Public Water System Supervision Directors of all~~  
2514 ~~States and Tribes having jurisdiction over lands within the area of review of a well for which a~~  
2515 ~~waiver is sought.~~  
2516  
2517 ~~\_\_\_\_\_ (iii) Any written waiver related information submitted by the Public Water~~  
2518 ~~System Supervision Director(s) to the (UIC) Director.~~  
2519  
2520 ~~\_\_\_\_\_ (e) Concurrent with the Class VI permit application public notice process, the~~  
2521 ~~Administrator shall give public notice that an injection depth waiver request has been submitted.~~  
2522 ~~The notice shall clearly state:~~  
2523  
2524 ~~\_\_\_\_\_ (i) The depth of the proposed injection zone(s);~~  
2525  
2526 ~~\_\_\_\_\_ (ii) The location of the injection wells;~~  
2527  
2528 ~~\_\_\_\_\_ (iii) The name and depth of all USDWs within the area of review;~~  
2529  
2530 ~~\_\_\_\_\_ (iv) A map of the area of review;~~  
2531  
2532 ~~\_\_\_\_\_ (v) The names of any public water supplies affected, reasonably likely to be~~  
2533 ~~affected, or served by the USDWs in the area of review; and~~  
2534  
2535 ~~\_\_\_\_\_ (vi) The results of any consultation between the UIC program and the Public~~  
2536 ~~Water System Supervision program within the area of review.~~  
2537  
2538 ~~\_\_\_\_\_ (d) Following the injection depth waiver application public notice, the Administrator~~  
2539 ~~of the Water Quality Division of the Department of Environmental Quality shall provide all the~~  
2540 ~~information received through the waiver application process to the US EPA Regional~~  
2541 ~~Administrator. Based on the information provided, the US EPA Regional Administrator shall~~  
2542 ~~provide written concurrence or non-concurrence regarding waiver issuance.~~  
2543  
2544 ~~\_\_\_\_\_ (i) If the US EPA Regional Administrator requires additional information to~~  
2545 ~~make a decision, the Administrator of the Water Quality Division of the Department of~~  
2546 ~~Environmental Quality shall provide the information. The US EPA Regional Administrator may~~  
2547 ~~require public notice of the new information.~~  
2548  
2549 ~~\_\_\_\_\_ (ii) The Administrator of the Water Quality Division of the Department of~~  
2550 ~~Environmental Quality shall not issue a depth injection waiver without receipt of written~~  
2551 ~~concurrence from the US EPA Regional Administrator.~~  
2552

2553 ~~\_\_\_\_\_ (e) \_\_\_\_\_ If an injection depth waiver is issued, within thirty (30) days of issuance, the EPA~~  
2554 ~~shall post the following information on the Office of Water's website:~~

2555  
2556 ~~\_\_\_\_\_ (i) \_\_\_\_\_ The depth of the proposed injection zone(s).~~

2557  
2558 ~~\_\_\_\_\_ (ii) \_\_\_\_\_ The location of the injection wells.~~

2559  
2560 ~~\_\_\_\_\_ (iii) \_\_\_\_\_ The name and depth of all USDWs within the area of review.~~

2561  
2562 ~~\_\_\_\_\_ (iv) \_\_\_\_\_ A map of the area of review.~~

2563  
2564 ~~\_\_\_\_\_ (v) \_\_\_\_\_ The names of any public water supplies affected, reasonably likely to be~~  
2565 ~~affected, or served by the USDWs in the area of review.~~

2566  
2567 ~~\_\_\_\_\_ (vi) \_\_\_\_\_ The date of waiver issuance.~~

2568  
2569 ~~\_\_\_\_\_ (f) \_\_\_\_\_ Upon receipt of a waiver of the requirement to inject below the lowermost USDW~~  
2570 ~~for geologic sequestration, the owner or operator of a Class VI well must comply with the~~  
2571 ~~following:~~

2572  
2573 ~~\_\_\_\_\_ (i) \_\_\_\_\_ All requirements of Sections 8, 11, 12, 13, 15, 16, 18, and 19 of this~~  
2574 ~~chapter.~~

2575  
2576 ~~\_\_\_\_\_ (ii) \_\_\_\_\_ All the requirements of Section 9 of this chapter with the following~~  
2577 ~~modified requirements:~~

2578  
2579 ~~\_\_\_\_\_ (A) \_\_\_\_\_ The Class VI well shall be constructed and completed to prevent~~  
2580 ~~the movement of fluids into any unauthorized zones including USDWs, in lieu of requirements~~  
2581 ~~of Section 9(a)(i) of this chapter.~~

2582  
2583 ~~\_\_\_\_\_ (B) \_\_\_\_\_ The casing and cementing program shall be designed to prevent the~~  
2584 ~~movement of fluids into any unauthorized zones including USDWs, in lieu of requirements of~~  
2585 ~~Section 9(b) and 9(b)(i) of this chapter.~~

2586  
2587 ~~\_\_\_\_\_ (C) \_\_\_\_\_ The casing shall extend through the base of the nearest USDW~~  
2588 ~~directly above the injection zone and shall be cemented to the surface; or at the Administrator's~~  
2589 ~~discretion, another formation above the injection zone and below the nearest USDW above the~~  
2590 ~~injection zone.~~

2591  
2592 ~~\_\_\_\_\_ (iii) \_\_\_\_\_ All the requirements of Section 14 of this chapter with the following~~  
2593 ~~modified requirements:~~

2594  
2595 ~~\_\_\_\_\_ (A) \_\_\_\_\_ The owner or operator shall monitor the groundwater quality,~~  
2596 ~~geochemical changes, and pressure in the first USDWs immediately above and below the~~  
2597 ~~injection zone(s); and any other formation at the discretion of the Administrator.~~

2598

2599 ~~\_\_\_\_\_ (B) The owner or operator shall conduct testing and monitoring to~~  
2600 ~~track the extent of the carbon dioxide plume and the presence or absence of elevated pressure~~  
2601 ~~(e.g., the pressure front) by using direct methods to monitor for pressure changes in the injection~~  
2602 ~~zone(s); and, indirect methods (e.g., seismic, electrical, gravity, or electromagnetic surveys~~  
2603 ~~and/or down hole carbon dioxide detection tools), unless the Administrator determines, based on~~  
2604 ~~site specific geology, that such methods are not appropriate.~~

2605  
2606 ~~\_\_\_\_\_ (iv) All requirements of Section 17 of this chapter with the following,~~  
2607 ~~modified post-injection site care monitoring requirements:~~

2608  
2609 ~~\_\_\_\_\_ (A) The owner or operator shall monitor the groundwater quality,~~  
2610 ~~geochemical changes and pressure in the first USDWs immediately above and below the~~  
2611 ~~injection zone; and in any other formations at the discretion of the Administrator.~~

2612  
2613 ~~\_\_\_\_\_ (B) Testing and monitoring to track the extent of the carbon dioxide~~  
2614 ~~plume and the presence or absence of elevated pressure (e.g., the pressure front) by using direct~~  
2615 ~~methods in the injection zone(s); and indirect methods (e.g., seismic, electrical, gravity, or~~  
2616 ~~electromagnetic surveys and/or down hole carbon dioxide detection tools), unless the~~  
2617 ~~Administrator determines based on site specific geology, that such methods are not appropriate;~~

2618  
2619 ~~\_\_\_\_\_ (v) Any additional requirements requested by the Administrator to ensure~~  
2620 ~~protection of USDWs above and below the injection zone(s).~~

2621  
2622 ~~(formerly Section 5(a))~~(a) It is the operator's responsibility to ~~make application~~ apply  
2623 for and obtain a permit in accordance with these regulations. Each application ~~must~~ shall be  
2624 submitted with all supporting data.

2625  
2626 ~~(formerly Section 5(b))~~(b) In addition to the requirements of W.S. § 35-11-313(f)(ii),  
2627 A a complete application for a Class VI well shall include:

2628  
2629 ~~(formerly Section 5(b)(i))~~(i) A brief description of the nature of the business and  
2630 the activities to be conducted that require the applicant to obtain a permit under this ~~e~~Chapter~~;~~;

2631  
2632 ~~(formerly Section 5(b)(ii))~~(ii) The name, address, and telephone number of the  
2633 operator, and the operator's ownership status and status as a ~~F~~State, private, public, or  
2634 other entity~~;~~;

2635  
2636 ~~(formerly Section 5(b)(iii))~~(iii) Up to four ~~SIC~~ (Standard Industrial  
2637 Classification) codes that best reflect the principal products or services provided by the facility~~;~~;

2638  
2639 ~~(formerly Section 5(b)(iv))~~(iv) The name, address, and telephone number of  
2640 the facility~~;~~;

2641  
2642 ~~(formerly Section 5(b)(iv))~~(v) ~~Additionally, t~~The location of the geologic  
2643 sequestration project ~~shall be~~ identified by section, township, range, and county, noting which~~;~~;  
2644 ~~any~~, sections (if any) include Indian lands~~;~~;

2645  
2646 ~~(formerly Section 5(b)(v))(vi)~~ Within the area of review, a listing and status of all  
2647 permits or construction approvals associated with the geologic sequestration project received or  
2648 applied for ~~by the applicant~~ under any of the following programs or corresponding state  
2649 programs:

2650  
2651 ~~(formerly Section 5(b)(v)(A))(A)~~ Hazardous Waste Management  
2652 under the Resource Conservation and Recovery Act ~~(RCRA)~~, 42 U.S.C. § 6901 et seq.;

2653  
2654 ~~(formerly Section 5(b)(v)(B))(B)~~ UIC Program under the Safe  
2655 Drinking Water Act, 42 U.S.C. § 300f et seq.;

2656  
2657 ~~(formerly Section 5(b)(v)(C))(C)~~ National Pollutant Discharge  
2658 Elimination System ~~(NPDES)~~ under the Clean Water Act, 33 U.S.C. § 1251 et seq.;

2659  
2660 ~~(formerly Section 5(b)(v)(D))(D)~~ Prevention of Significant  
2661 Deterioration ~~(PSD)~~ program under the Clean Air Act, 42 U.S.C. § 7401 et seq.;

2662  
2663 ~~(formerly Section 5(b)(v)(E))(E)~~ Nonattainment program under the  
2664 Clean Air Act, 42 U.S.C. § 7401 et seq.;

2665  
2666 ~~(formerly Section 5(b)(v)(F))(F)~~ National Emissions Standards for  
2667 Hazardous Air Pollutants ~~(NESHAPs)~~ pre-construction approval under the Clean Air Act, 42  
2668 U.S.C. § 7401 et seq.;

2669  
2670 ~~(formerly Section 5(b)(v)(G))(G)~~ Dredge and fill permitting program  
2671 under section 404 of the Clean Water Act, 33 U.S.C. § 1251 et seq.;

2672  
2673 ~~(formerly Section 5(b)(vi))(vii)~~ Within the area of review, a list of other  
2674 relevant permits, ~~whether federal or state~~, associated with the geologic sequestration project that  
2675 the applicant ~~has been~~ is required to obtain; ~~such as construction permits.~~

2676  
2677 ~~(formerly Section 5(b)(vi))(viii)~~ This includes a statement ~~as to~~ of whether  
2678 ~~or not~~ the facility geologic sequestration project is within a state-approved water quality  
2679 management plan area, a state-approved wellhead protection area or a state-approved source  
2680 water protection area;

2681  
2682 ~~(formerly Section 5(b)(vii))(ix)~~ A map showing the injection well(s) for  
2683 which a permit is sought and the applicable area of review, consistent with Section ~~8~~ 13 of this  
2684 ~~e~~Chapter;

2685  
2686 ~~(formerly Section 5(b)(vii)(A))(A)~~ Within the area of review, the map  
2687 ~~must~~ shall ~~show~~ list the number, or name and location of;

2688  
2689 ~~(formerly Section 5(b)(vii)(A))(I)~~ a ~~All known~~ injection wells,  
2690 producing wells, abandoned wells, plugged wells, ~~or~~ dry holes, or deep stratigraphic boreholes;

2691  
2692 ~~(formerly Section 5(b)(vii)(A))(II)~~ All state- or EPA-approved  
2693 subsurface cleanup sites;

2694  
2695 ~~(formerly Section 5(b)(vii)(A))(III)~~ All public drinking water  
2696 supply water quality management plan areas, wellhead protection areas, or ~~and~~ source water  
2697 protection areas;

2698  
2699 ~~(formerly Section 5(b)(vii)(A))(IV)~~ All surface bodies of water,  
2700 springs, mines (surface and subsurface), quarries, and water wells; ~~and~~

2701  
2702 ~~(formerly Section 5(b)(vii)(A))(V)~~ Other pertinent surface  
2703 features, including structures intended for human occupancy;

2704  
2705 ~~(formerly Section 5(b)(vii)(A))(VI)~~ Roads; and

2706  
2707 ~~(formerly Section 5(b)(vii)(A))(VII)~~ s~~State, tribal, and territory~~  
2708 and Indian reservation boundaries; ~~and roads;~~

2709  
2710 ~~(formerly Section 5(b)(vii)(B))(B)~~ Only information The applicant shall  
2711 include on this map all relevant information of public record ~~is required to be included on this~~  
2712 ~~map, or known to the applicant; and~~

2713  
2714 ~~(formerly Section 5(b)(vii)(C))(C)~~ The map ~~should~~ shall also show  
2715 known or suspected faults; ~~if known or suspected;~~

2716  
2717 ~~(formerly Section 5(b)(viii))(x)~~ A map delineating the area of review that:

2718  
2719 (A) Meets the requirements of Section 13 of this Chapter;

2720  
2721 ~~(formerly Section 5(b)(viii))(B)~~ Is based upon modeling;

2722  
2723 ~~(formerly Section 5(b)(viii))(C)~~ using Uses all available data,  
2724 including data available from any logging and testing of wells within and adjacent to (within one  
2725 (1) mile of) ~~to~~ the area of review; and

2726  
2727 ~~(formerly Section 5(b)(viii)(B))(D)~~ ~~All areas of review shall be legally~~  
2728 ~~described~~ Describes the area of review by township, range, and section to the nearest ten (10)  
2729 acres, as described under the general land survey system;

2730  
2731 ~~(formerly Section 5(b)(ix)(xi))~~ For the description required by W.S. 35-11-  
2732 313(f)(ii)(A), A description of the general geology of the area to be affected by the injection of  
2733 carbon dioxide including geochemistry, structure and faulting, fracturing and seals, and  
2734 stratigraphy and lithology including petrophysical attributes. The description shall also include  
2735 sufficient information on the geologic structure and reservoir properties of the proposed storage  
2736 site and overlying formations, including:

2737  
2738 ~~(formerly Section 5(b)(ix)(A)(A)~~ (A) Isopach maps of the proposed  
2739 injection and confining zone(s), a structural contour map aligned with the top of the proposed  
2740 injection zone, and at least two (2) geologic cross-sections of the area of review reasonably  
2741 perpendicular to each other and showing the geologic formations from the surface to total depth;

2742  
2743 ~~(formerly Section 5(b)(ix)(B)(B)~~ (B) Location, orientation, and properties  
2744 of known or suspected faults and fractures that may transect the confining zone(s) in the area of  
2745 review and a determination that they ~~would~~ will not ~~interfere with containment~~ allow fluid  
2746 movement;

2747  
2748 ~~(formerly Section 5(b)(ix)(C)(C)~~ (C) Information on seismic history that  
2749 ~~have~~ has affected the proposed area of review including knowledge of previous seismic events  
2750 and history of these events, the presence and depth of seismic sources, and a determination that  
2751 the seismicity ~~would~~ will not ~~compromise containment~~ allow fluid movement;

2752  
2753 ~~(formerly Section 5(b)(ix)(D)(D)~~ (D) Data sufficient to demonstrate the  
2754 effectiveness of the injection and confining zone(s), including:

2755  
2756 ~~(formerly Section 5(b)(ix)(D)(I)~~ (I) ~~d~~Data on the depth, areal  
2757 extent, thickness, mineralogy, porosity, vertical permeability, and capillary pressure of the  
2758 injection and confining zone(s) within the area of review; ~~;~~ ; and

2759  
2760 ~~(formerly Section 5(b)(ix)(D)(II)~~ (II) A description of geologic  
2761 changes based on field data that may include geologic cores, outcrop data, seismic surveys, well  
2762 logs, and names and lithologic descriptions;

2763  
2764 ~~(formerly Section 5(b)(ix)(E)(E)~~ (E) Geomechanical information on  
2765 fractures, stress, ductility, rock strength, and in situ fluid pressures within the confining zone;  
2766 and

2767  
2768 ~~(formerly Section 5(b)(ix)(F)(F)~~ (F) Geologic and topographic maps and  
2769 cross-sections illustrating regional geology, hydrogeology, and the geologic structure of the local  
2770 area; ~~;~~ ;

2771  
2772 ~~(formerly Section 5(b)(x)(xii)~~ (xii) ~~A compilation list~~ of all wells and other drill holes  
2773 within; and adjacent ~~to~~ to (within one (1) mile) ~~to~~ the area of review. ~~Such data must~~ The list shall  
2774 include a description of each well and drill hole type, construction, date drilled, location, depth,  
2775 record of plugging and ~~or~~ completion, and any additional information the Administrator ~~may~~  
2776 require; ~~;~~ ;

2777  
2778 ~~(formerly Section 5(b)(x)(A)(xiii)~~ (xiii) ~~Applicants shall also identify~~ A list  
2779 of the identity and ~~the~~ location of all known wells within; and adjacent ~~to~~ to (within one (1) mile) ~~to~~  
2780 the area of review that penetrate the confining or injection zone; ~~;~~ ;

2781

2782 ~~(formerly Section 5(b)(x)(B) Applicants shall perform mapping with~~  
2783 ~~sufficient resolution as to make a comprehensive effort to identify wells that are not in the public~~  
2784 ~~record using aerial photography, aerial survey, physical traverse, or other methods acceptable to~~  
2785 ~~the Administrator.~~

2786  
2787 ~~(formerly Section 5(b)(x)(C) Applicants shall perform corrective action as~~  
2788 ~~specified in Section 8 of this chapter.~~

2789  
2790 ~~(formerly Section 5(b)(xi))(xiv)~~ Maps and stratigraphic cross-sections  
2791 indicating the general vertical and lateral limits of all USDWs in the area of review; the location  
2792 of water wells and springs ~~within~~ the area of review; ~~the~~ their positions relative to the injection  
2793 zone(s) of all USDWS, water wells, and springs in the area of review, and the direction of water  
2794 movement; ~~where~~ (if known);

2795  
2796 ~~(formerly Section 5(b)(xii))(xv)~~ A For the characterization required by W.S.  
2797 35-11-313(f)(ii)(B), ~~of the injection zone and aquifers above and below the injection zone that~~  
2798 ~~may be affected, including applicable pressure and fluid chemistry data to describe the projected~~  
2799 ~~effects of injection activities, and background water quality data that will facilitate the~~  
2800 ~~classification of any groundwaters that may be affected by the proposed discharge. This must~~  
2801 ~~include~~ information necessary for the Division to classify the receiver and any secondarily  
2802 affected aquifers under Water Quality Rules and Regulations Chapter 8;

2803  
2804 ~~(formerly Section 5(b)(xiii))(xvi)~~ Baseline geochemical data on subsurface  
2805 formations, including all USDWs in the area of review;

2806  
2807 ~~(formerly Section 5(b)(xiv))(xvii)~~ Proposed operating data, including:

2808  
2809 ~~(formerly Section 5(b)(xiv)(A))(A)~~ Average and maximum daily rate  
2810 and volume and ~~or~~ mass and total anticipated volume and ~~or~~ mass of the carbon dioxide stream;

2811  
2812 ~~(formerly Section 5(b)(xiv)(B))(B)~~ Average and maximum surface  
2813 injection pressure;

2814  
2815 ~~(formerly Section 5(b)(xiv)(C))(C)~~ The source of the carbon dioxide  
2816 stream; and

2817  
2818 ~~(formerly Section 5(b)(xiv)(D))(D)~~ An analysis of the chemical and  
2819 physical characteristics of the carbon dioxide stream and any other substance(s) proposed for  
2820 inclusion in the injectate stream; and

2821  
2822 ~~(formerly Section 5(b)(xiv)(E))(E)~~ Anticipated duration of the proposed  
2823 injection period(s);

2824  
2825 ~~(formerly Section 5(b)(xv))(xviii)~~ The compatibility of the carbon dioxide  
2826 stream with fluids in the injection zone and minerals in both the injection and the confining

2827 zone(s), based on the results of the formation testing program, and with the materials used to  
2828 construct the well;

2829  
2830 ~~(formerly Section 5(b)(xvi))—An assessment of the impact to fluid resources, on~~  
2831 ~~subsurface structures and the surface of lands that may reasonably be expected to be impacted,~~  
2832 ~~and the measures required to mitigate such impacts;~~  
2833

2834 ~~(formerly Section 5(b)(xvii)(xix))~~ (xix) Proposed formation testing program to  
2835 obtain an analysis of the chemical and physical characteristics of the injection zone and  
2836 confining zone and that meets the requirements of Section ~~11~~ 16 of this ~~e~~Chapter;

2837  
2838 ~~(formerly Section 5(b)(xviii)(xx))~~ (xx) Proposed stimulation program, a description  
2839 of stimulation fluids to be used, and a determination that stimulation will not ~~compromise~~  
2840 ~~containment~~ allow fluid movement. ~~All stimulation programs must be approved by the~~  
2841 ~~Administrator as part of the permit application and incorporated into the permit;~~  
2842

2843 ~~(formerly Section 5(b)(xix)(xxi))~~ (xxi) Proposed procedure that outlines steps to  
2844 conduct injection operations;

2845  
2846 ~~(formerly Section 5(b)(xx)(xxii))~~ (xxii) A wellbore schematic of the subsurface  
2847 construction details and surface wellhead construction of the injection and monitoring wells;

2848  
2849 ~~(formerly Section 7(a)(xxiii))~~ (xxiii) ~~Owners or operators of Class VI wells must~~  
2850 A demonstrate ~~ion~~, to the satisfaction of the Administrator, that the injection wells will be sited in  
2851 areas with a suitable geologic system. ~~The geologic system must be comprised of that meets the~~  
2852 requirements of Section 12(a) of this Chapter, including:  
2853

2854 ~~(formerly Section 7(b))(A)~~ (A) ~~Owners or operators of Class VI wells must~~  
2855 identify ~~ication~~ and characterize ~~ation of~~ additional zones, if they exist, that will impede vertical  
2856 fluid movement, allow for pressure dissipation, and provide additional opportunities for  
2857 monitoring, mitigation, and remediation: and  
2858

2859 ~~(formerly Section 7(b))(B)~~ (B) Identification of ~~V~~vertical faults and  
2860 fractures that transect these zones ~~must be~~ identified: in subparagraph (A) of this subparagraph;  
2861

2862 ~~(formerly Section 5(b)(xxi)(xxiv))~~ (xxiv) Injection well design and construction  
2863 procedures that meet the requirements of Section ~~9~~ 14 of this ~~e~~Chapter, including the information  
2864 listed in Section 14(c)(ii) of this Chapter;  
2865

2866 ~~(formerly Section 5(b)(xxii)(xxv))~~ (xxv) Proposed area of review and corrective  
2867 action plan that meets the requirements under Section ~~8~~ 13 of this ~~e~~Chapter;

2868  
2869 ~~(formerly Section 5(b)(xxiii)(xxvi))~~ (xxvi) The status of corrective action on wells in  
2870 the area of review;

2871

2872 ~~(formerly Section 5(b)(xxiv))(xxvii)~~ All available logging and testing program  
2873 data on the well(s) required by Section ~~11~~ 17 of this eChapter;

2874  
2875 ~~(formerly Section 5(b)(xxv))(xxviii)~~ A demonstration of mechanical integrity  
2876 ~~pursuant to~~ required by Section ~~13~~ 19 of this eChapter;

2877  
2878 ~~(formerly Section 5(b)(xxvi))(xxix)~~ A demonstration, satisfactory to the  
2879 Administrator, that the applicant has met the financial responsibility requirements ~~under of~~  
2880 Section ~~19~~ 26 of this eChapter;

2881  
2882 ~~(formerly Section 19(e)(i))(xxx)~~ The A written financial assurance cost  
2883 estimate required by Section 26(b) of this Chapter; ~~for the various phases of the sequestration~~  
2884 ~~project shall consider the following events:~~

2885  
2886 ~~(formerly Section 5(g))(xxxi)~~ An applicant applying for a Class VI well permit must  
2887 ~~obtain A~~ public liability insurance certificate ~~to cover the geologic sequestration activities for which~~  
2888 ~~a permit is sought. that, in addition to meeting the requirements of W.S. § 35-11-313(f)(ii)(O),~~  
2889 demonstrates that the public liability insurance policy meets the requirements of Section  
2890 26(l)(i)(B) of this Chapter; identifies each facility by name, address, and EPA Identification  
2891 Number; and identifies the amounts and types of coverage for each facility;

2892  
2893 ~~(formerly Section 5(b)(xxvii))(xxxii)~~ Proposed testing and monitoring plan  
2894 required by Section ~~14~~ 20 of this eChapter;

2895  
2896 ~~(formerly Section 5(b)(xxviii))(xxxiii)~~ Proposed injection and monitoring  
2897 well(s) plugging plan required by Section ~~16(b)~~ 23 of this eChapter; ~~where the plan meets the~~  
2898 ~~requirements of Section 16(b) of this chapter, the Administrator shall incorporate it into the~~  
2899 ~~permit as a permit condition.~~

2900  
2901 ~~(formerly Section 5(b)(xxix))(xxxiv)~~ Proposed post-injection site care and site  
2902 closure plan required by Section ~~17(a)~~ 24(a) of this eChapter;

2903  
2904 ~~(formerly Section 5(b)(xxx)(xxxv)~~ Proposed emergency and remedial response  
2905 plan required by Section ~~18~~ 25 of this eChapter;

2906  
2907 ~~(formerly Section 5(b)(xxxiv))(xxxvi)~~ A list of contacts, ~~submitted to the~~  
2908 ~~Administrator, for those Tribes on Indian lands identified pursuant to be within the area of~~  
2909 ~~review of the geologic sequestration project based on information provided in~~ subparagraphs  
2910 ~~(b)(vii), (b)(vii)(A), (b)(vii)(B)~~ (b)(v) and (b)(ix)(A)(VII) of this sSection; and

2911  
2912 ~~(formerly Section 5(b)(xxxv))(xxxvii)~~ Any other information requested by the  
2913 Administrator.

2914  
2915 ~~(formerly Section 5(h))(c)~~ All applications for permits, reports, or information ~~to be~~  
2916 submitted to the Administrator shall be signed by a responsible corporate officer ~~as follows:~~

2917

2918 ~~(formerly Section 5(i))(d)~~ The application shall contain the following certification by  
2919 the ~~person~~ responsible corporate officer signing the application:

2920  
2921 “I certify under penalty of law that this document and all attachments were prepared  
2922 under my direction or supervision in accordance with a system designed to ensure that qualified  
2923 personnel properly gather and evaluate the information submitted. Based on my inquiry of the  
2924 person or persons who manage the system, or those persons directly responsible for gathering the  
2925 information, the information submitted is, to the best of my knowledge and belief, true, accurate,  
2926 and complete. I am aware that there are significant penalties for submitting false information,  
2927 including the possibility of fine and imprisonment for knowing violations.”  
2928

2929 ~~(formerly Section 4(a)(viii))(e)~~ Sections of permit applications ~~filed under this~~  
2930 ~~chapter~~ that represent engineering work shall be sealed, signed, and dated by a licensed  
2931 professional engineer as required by W.S. § 33-29-601.  
2932

2933 ~~(formerly Section 4(a)(ix))(f)~~ Sections of permit applications ~~filed under this chapter~~ that  
2934 represent geologic work shall be sealed, signed, and dated by a licensed professional geologist as  
2935 required by W.S. § 33-41-115.  
2936

2937 **Section 11. ~~Logging, Sampling, and Testing Prior to Injection Well Operation.~~**  
2938 **Prohibitions.**  
2939

2940 ~~(a) — During the drilling and construction of a Class VI injection well, the owner or~~  
2941 ~~operator must run appropriate logs, surveys and tests to determine or verify the depth, thickness,~~  
2942 ~~porosity, permeability, and lithology of, and the salinity of any formation fluids in all relevant~~  
2943 ~~geologic formations in order to ensure conformance with the injection well construction~~  
2944 ~~requirements under Section 9 of this chapter, and to establish accurate baseline data against~~  
2945 ~~which future measurements may be compared. The owner or operator must submit to the~~  
2946 ~~Administrator a descriptive report prepared by a knowledgeable log analyst that includes an~~  
2947 ~~interpretation of the results of such logs and tests. At a minimum, such logs and tests must~~  
2948 ~~include:~~  
2949

2950 ~~(i) — Deviation checks measured during drilling on all holes constructed by~~  
2951 ~~drilling a pilot hole that is subsequently enlarged by reaming or another method. Such checks~~  
2952 ~~must be at sufficiently frequent intervals to determine the location of the borehole and to ensure~~  
2953 ~~that vertical avenues for fluid movement in the form of diverging holes are not created during~~  
2954 ~~drilling; and~~  
2955

2956 ~~(ii) — Before and upon installation of the surface casing:~~

2957 ~~(A) — Resistivity, spontaneous potential, and caliper logs before the~~  
2958 ~~casing is installed; and~~  
2959

2960 ~~(B) — A cement bond and variable density log, or other approved device~~  
2961 ~~to evaluate cement quality radially with sufficient resolution to identify channels, voids, or other~~  
2962 ~~areas of missing cement, and a temperature log, after the casing is set and cemented.~~  
2963

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~~(iii) — Before and upon installation of the long string casing:~~

~~(A) — Resistivity, spontaneous potential, porosity, caliper, gamma ray, fracture finder logs, and any other logs the Administrator requires for the given geology before the casing is installed; and~~

~~(B) — A cement bond and variable density log, and a temperature log after the casing is set and cemented.~~

~~(iv) — Test(s) designed to demonstrate the internal and external mechanical integrity of injection wells, which may include:~~

~~(A) — A pressure test with liquid or gas;~~

~~(B) — A tracer survey, such as oxygen activation logging;~~

~~(C) — A temperature or noise log; and~~

~~(D) — A casing inspection log.~~

~~(v) — Any alternative methods that provide equivalent or better information and that are required of, and/or approved by the Administrator.~~

~~(b) — The owner or operator must take whole cores or sidewall cores of the injection zone and confining system, and formation fluid samples from the injection zone(s), and submit to the Administrator a detailed report prepared by a log analyst that includes:~~

~~(i) — Well log analyses (including well logs);~~

~~(ii) — Core analyses; and~~

~~(iii) — Formation fluid sample information.~~

~~(iv) — The Administrator may accept data from cores and fluid samples from nearby wells if the owner or operator can demonstrate that such data are representative of conditions in the wellbore.~~

~~(e) — The owner or operator must record the formation fluid temperature, formation fluid pH and conductivity, reservoir pressure, and static fluid level of the injection zone(s).~~

~~(d) — The owner or operator must determine fracture pressures of the injection and confining zones and verify hydrogeologic and geo-mechanical characteristics of the injection zone by conducting a pressure fall-off test, any other information requested by the Administrator; and,~~

3010 (i) ~~— A pump test; or~~

3011

3012 (ii) ~~— Injectivity tests.~~

3013

3014 (e) ~~— The owner or operator must provide the Administrator with the opportunity to~~  
3015 ~~witness all logging and testing by this section. The owner or operator must submit a schedule of~~  
3016 ~~such activities to the Administrator prior to conducting the first test and notify the Administrator~~  
3017 ~~of any changes to the schedule thirty (30) days prior to the next scheduled test.~~

3018

3019 (formerly Section 6(a))(a) ~~In addition to the requirements in~~ Pursuant to the  
3020 provisions of W.S. § 35-11-301(a), no person shall:

3021

3022 (formerly Section 6(a)(i))(i) Discharge into, construct, operate, or modify any  
3023 Class VI well unless permitted pursuant to this ~~e~~Chapter;

3024

3025 (formerly Section 6(a)(ii))(ii) Discharge or inject to any zone except the  
3026 authorized ~~discharge~~ injection zone as described in the permit;

3027

3028 (formerly Section 6(a)(iii))(iii) Conduct any ~~authorized~~ injection activity in  
3029 a manner that results in a violation of any permit condition, or that conflicts with any  
3030 representations made in ~~the a permit application;~~ or the request for coverage under the  
3031 individual permit. A permit condition supersedes any application content.

3032

3033 (formerly Section 6(a)(iv))(iv) Construct, operate, maintain, convert, plug,  
3034 abandon, or conduct any other injection activity in a manner that allows the movement of fluid  
3035 containing any contaminant into underground sources of drinking water, if the presence of that  
3036 contaminant may cause a violation of any primary drinking water regulation ~~under contained in~~  
3037 40 C.F.R. Part 141, Subparts E, F, and G, or may otherwise adversely affect ~~the human~~ health ~~of~~  
3038 persons, safety, or the environment; ~~The applicant for a permit shall have the burden of showing~~  
3039 ~~that the requirements of this paragraph are met.~~

3040

3041 (formerly Section 6(e))(v) ~~No person shall i~~nject any hazardous waste that has been  
3042 banned from land disposal pursuant to Wyoming Hazardous Waste Rules, Chapter 1;

3043

3044 (formerly Section 6(d))(vi) ~~The e~~Construction of a new, ~~or operation~~ an existing, or  
3045 ~~maintenance~~ maintain of any an existing Class V wells for non-experimental geologic  
3046 sequestration ~~is prohibited.~~

3047

3048 (formerly Section 4(a)(iii))(b) ~~Injections from~~ Class VI wells shall ~~be restricted~~  
3049 inject only to ~~those~~ receivers ~~defined~~ classified by the Department pursuant to Water Quality  
3050 Rules and Regulations, Chapter 8, as Class V (Hydrocarbon Commercial) or Class VI  
3051 groundwaters ~~by the Department pursuant to Water Quality Rules and Regulations Chapter 8.~~ No  
3052 Class VI well shall inject to any Class I, Class II, Class III, Class IV, or unclassified  
3053 groundwaters.

3054

3055 (formerly Section 6(e))(c) The Administrator ~~may identify (by narrative description,~~

3056 ~~illustrations, maps, or other means) and~~ shall designate and protect as underground sources of  
3057 drinking water, all aquifers and parts of aquifers that meet the definition of “underground source  
3058 of drinking water” in Section 2 of this Chapter, except to the extent there is expansion to the  
3059 areal extent of an existing Class II enhanced oil recovery or enhanced gas recovery aquifer  
3060 exemption for the exclusive purpose of Class VI injection for geologic sequestration under  
3061 Section ~~5(e) 16~~ of this ~~e~~Chapter. ~~Other than EPA-approved aquifer exemption expansions that~~  
3062 ~~meet the criteria set forth in Section 5(e) of this chapter, new aquifer exemptions shall not be~~  
3063 ~~issued for Class VI injection wells. Even if an aquifer has not been specifically identified by the~~  
3064 ~~Administrator, it is an underground source of drinking water if it meets the definition in Section~~  
3065 ~~2 of this chapter.~~

3066  
3067 ~~(formerly Section 6(e))(i)~~ (i) The Administrator may identify underground  
3068 sources of drinking water (by narrative description, illustrations, maps, or other means).

3069  
3070 ~~(formerly Section 6(e))(ii)~~ (ii) Other than EPA-approved aquifer exemption  
3071 expansions that meet the ~~criteria set forth in~~ requirements of Section ~~5(e) 16~~ of this ~~e~~Chapter,  
3072 new aquifer exemptions shall not be issued for Class VI injection wells. ~~Even if an aquifer has~~  
3073 ~~not been specifically identified by the Administrator, it is an underground source of drinking~~  
3074 ~~water if it meets the definition in Section 2 of this chapter.~~

3075  
3076 **Section 12. ~~Injection Well Operating Requirements. Minimum Criteria for Siting~~**  
3077 **Class VI Wells.**

3078  
3079 (a) ~~—The owner or operator must ensure that injection pressure does not exceed ninety~~  
3080 ~~(90) percent of the fracture pressure of the injection zone(s) so as to ensure that the injection~~  
3081 ~~does not initiate new fractures or propagate existing fractures in the injection zone(s).~~

3082  
3083 (i) ~~—In no case may injection pressure cause movement of injection or~~  
3084 ~~formation fluids in a manner that endangers a USDW, or otherwise threatens human health,~~  
3085 ~~safety, or the environment.~~

3086  
3087 (ii) ~~—In no case may injection pressure initiate fractures in the confining zone(s)~~  
3088 ~~or cause the movement of injectate or formation fluids that endangers a USDW or otherwise~~  
3089 ~~threatens human health, safety, or the environment.~~

3090  
3091 (b) ~~—Injection of the carbon dioxide stream between the outermost casing protecting~~  
3092 ~~USDWs and the wellbore is prohibited.~~

3093  
3094 (c) ~~—The owner or operator must fill the annulus between the tubing and the long string~~  
3095 ~~casing with a non-corrosive fluid approved by the Administrator. The owner or operator must~~  
3096 ~~maintain on the annulus a pressure that exceeds the operating injection pressure, unless the~~  
3097 ~~Administrator determines that such requirement might harm the integrity of the well or endanger~~  
3098 ~~USDWs.~~

3099  
3100 (d) ~~—Other than during periods of well workover or maintenance approved by the~~  
3101 ~~Administrator in which the sealed tubing-casing annulus is, by necessity, disassembled for~~

3102 ~~maintenance or corrective procedures, the owner or operator must maintain mechanical integrity~~  
3103 ~~of the injection well at all times.~~

3104  
3105 ~~(e) — The owner or operator must install and use continuous recording devices to~~  
3106 ~~monitor:~~

3107  
3108 ~~(i) — Injection pressure; and~~

3109  
3110 ~~(ii) — Rate, volume, and temperature of the carbon dioxide stream.~~

3111  
3112 ~~(f) — The owner or operator must install and use continuous recording devices to~~  
3113 ~~monitor the pressure on the annulus between the tubing and the long string casing and annulus~~  
3114 ~~fluid volume.~~

3115  
3116 ~~(g) — The owner or operator must install, test, and use alarms and automatic surface~~  
3117 ~~shut-off systems, or at the discretion of the Administrator use down hole shut-off systems (e.g.,~~  
3118 ~~automatic shut-off, check valves), or other mechanical devices that provide equivalent~~  
3119 ~~protection, designed to alert the operator and shut in the well when operating parameters such as~~  
3120 ~~injection rate, injection pressure, or other parameters approved by the Administrator diverge~~  
3121 ~~beyond ranges and/or gradients specified in the permit.~~

3122  
3123 ~~(h) — If an automatic shutdown is triggered or a loss of mechanical integrity is~~  
3124 ~~discovered, the owner or operator must immediately investigate and identify as expeditiously as~~  
3125 ~~possible the cause. If, upon such investigation, the well appears to be lacking mechanical~~  
3126 ~~integrity, or if monitoring required under paragraphs (e), (f), and (g) of this section otherwise~~  
3127 ~~indicates that the well may be lacking mechanical integrity, the owner or operator must :~~

3128  
3129 ~~(i) — Immediately cease injection;~~

3130  
3131 ~~(ii) — Take all steps reasonably necessary to determine whether there may have~~  
3132 ~~been a release of the injected carbon dioxide stream or formation fluids into any unauthorized~~  
3133 ~~zone;~~

3134  
3135 ~~(iii) — Notify the Administrator within twenty-four (24) hours;~~

3136  
3137 ~~(iv) — Restore and demonstrate mechanical integrity to the satisfaction of the~~  
3138 ~~Administrator as soon as practicable and prior to resuming injection; and~~

3139  
3140 ~~(v) — Notify the Administrator when injection can be expected to resume.~~

3141  
3142 ~~(formerly Section 7(a))~~(a) ~~Owners or operators of All Class VI wells must shall~~  
3143 ~~demonstrate to the satisfaction of the Administrator that the wells will~~ be sited in areas with a  
3144 suitable geologic system. The geologic system ~~must~~ shall be comprised of:

3145

3146 ~~(formerly Section 7(a)(i))~~(i) An injection zone of sufficient areal extent,  
3147 thickness, porosity, and permeability to receive the total anticipated volume of the carbon  
3148 dioxide stream; and

3149  
3150 ~~(formerly Section 7(a)(ii))~~(ii) A ~~e~~confining zone(s) that ~~is~~ are free of transmissive  
3151 faults or fractures and of sufficient areal extent and integrity to contain the injected carbon  
3152 dioxide stream and displaced formation fluids and allow injection at proposed maximum  
3153 pressures and volumes without initiating or propagating fractures in the confining zone(s) or  
3154 causing non-transmissive faults to become transmissive.

3155  
3156 ~~(formerly Section 7(a))~~(b) Owners or operators of Class VI wells ~~must~~ shall identify  
3157 and characterize additional zones, if they exist, that will impede vertical fluid movement, allow  
3158 for pressure dissipation, and provide additional opportunities for monitoring, mitigation, and  
3159 remediation. ~~Vertical f~~Faults and fractures that transect these zones ~~must~~ shall be identified.

3160  
3161 **Section 13. ~~Mechanical Integrity.~~ Area of Review Delineation and Corrective**  
3162 **Action.**

- 3163  
3164 ~~(a) — A Class VI well has mechanical integrity if:~~
- 3165  
3166 ~~———— (i) — There is no significant leak in the casing, tubing, or packer; and~~
  - 3167  
3168 ~~———— (ii) — There is no significant fluid movement into a USDW through channels~~  
3169 ~~adjacent to the injection wellbore.~~
  - 3170  
3171 ~~———— (b) — To evaluate the absence of significant leaks under paragraph (a)(i) of this section,~~  
3172 ~~owners or operators must, following an initial annulus pressure test, continuously monitor~~  
3173 ~~injection pressure, rate, injected volumes, and pressure on the annulus between tubing and long~~  
3174 ~~string casing and annulus fluid volume as specified in Section 12 (e) and (f) of this chapter;~~
  - 3175  
3176 ~~———— (c) — At least once per year, the owner or operator must use one (1) of the following~~  
3177 ~~methods to determine the absence of significant fluid movement under subparagraph (a)(ii) of this~~  
3178 ~~section:~~
  - 3179  
3180 ~~———— (i) — An approved tracer survey such as an oxygen activation log; or~~
  - 3181  
3182 ~~———— (ii) — A temperature or noise log.~~
  - 3183  
3184 ~~———— (d) — If required by the Administrator, at a frequency specified in the testing and~~  
3185 ~~monitoring plan required in Section 14 of this chapter, the owner or operator must run a casing~~  
3186 ~~inspection log to determine the presence or absence of corrosion in the long string casing.~~
  - 3187  
3188 ~~———— (e) — The Administrator may require any other test to evaluate mechanical integrity~~  
3189 ~~under paragraph (a)(i) or (a)(ii) of this section. Also, the Administrator may allow the use of a~~  
3190 ~~test to demonstrate mechanical integrity other than those listed above, with the written approval~~  
3191 ~~of the US EPA Administrator. To obtain approval, the Administrator must submit a written~~

3192 request to the US EPA Administrator that must set forth the proposed test and all technical data  
3193 supporting its use.

3194  
3195 ~~\_\_\_\_\_ (f) \_\_\_\_\_ In conducting and evaluating the tests enumerated in this section or others to be~~  
3196 ~~allowed by the Administrator, the owner or operator and the Administrator must apply methods~~  
3197 ~~and standards generally accepted in the industry.~~

3198  
3199 ~~\_\_\_\_\_ (i) \_\_\_\_\_ When the owner or operator reports the results of mechanical integrity~~  
3200 ~~tests to the Administrator, he/she shall include a description of the test(s) and the method(s) used.~~

3201  
3202 ~~\_\_\_\_\_ (ii) \_\_\_\_\_ In making his/her evaluation, the Administrator must review monitoring~~  
3203 ~~and other test data submitted since the previous evaluation.~~

3204  
3205 ~~\_\_\_\_\_ (g) \_\_\_\_\_ The Administrator may require additional or alternative tests if the results~~  
3206 ~~presented by the owner or operator under paragraph (e) of this section are not satisfactory to the~~  
3207 ~~Administrator to demonstrate that there is no significant leak in the casing, tubing or packer, or~~  
3208 ~~significant movement of fluid into or between USDWs resulting from the injection activity as~~  
3209 ~~stated in paragraphs (a)(i) and (a)(ii) of this section.~~

3210  
3211 ~~(formerly Section 8(b))(a)~~ The owner or operator of a Class VI well ~~must~~ shall  
3212 prepare, maintain, and comply with a plan to delineate the area of review for a proposed geologic  
3213 sequestration project, re-evaluate the delineation, and perform corrective action that meets the  
3214 requirements of this ~~s~~Section and is ~~acceptable to~~ approved by the Administrator. ~~(formerly~~  
3215 ~~Section 8(a))~~ The area of review ~~is~~ shall be based on computational modeling that accounts for  
3216 the physical and chemical properties of all phases of the injected carbon dioxide stream.  
3217 ~~(formerly Section 5(b)(viii)(A))~~ A Class VI ~~The~~ area of review shall never be less than the area  
3218 of potentially affected groundwater. ~~As a part of the permit application for approval by the~~  
3219 ~~Administrator, the owner or operator must submit a~~An area of review and corrective action plan  
3220 ~~that~~ shall include the following information:

3221  
3222 ~~(formerly Section 8(b)(i))(i)~~ The method for delineating the area of review that  
3223 meets the requirements of paragraph ~~(e)~~(b) of this ~~s~~SSection, including the name, version and  
3224 availability of the model ~~to~~ that will be used, assumptions that will be made, and the site  
3225 characterization data on which the model will be based;

3226  
3227 ~~(formerly Section 8(b)(ii))(ii)~~ A description of:

3228  
3229 ~~(formerly Section 8(b)(ii)(A))(A)~~ The monitoring and operational  
3230 conditions that would warrant a re-evaluation of the area of review prior to the next scheduled re-  
3231 evaluation as determined by the minimum fixed frequency established in paragraph ~~(a)~~(c) of this  
3232 ~~s~~SSection.

3233  
3234 ~~(formerly Section 8(b)(ii)(B))(B)~~ How monitoring and operational data  
3235 (e.g., injection rate and pressure) will be used to evaluate the area of review; and

3236

3237 ~~(formerly Section 8(b)(ii)(C))(C)~~ How corrective action will be  
3238 conducted to meet the requirements of paragraph ~~(e)(v)~~ (b)(v) of this ~~s~~Section, including:  
3239  
3240 ~~(formerly Section 8(b)(ii)(C)(I))(I)~~ What corrective action will be  
3241 performed prior to injection;  
3242  
3243 ~~(formerly Section 8(b)(ii)(C)(II))(II)~~ What, if any, portions of the  
3244 area of review will have corrective action addressed on a phased basis; and how the phasing will  
3245 be determined;  
3246  
3247 ~~(formerly Section 8(b)(ii)(C)(III))(III)~~ How corrective action  
3248 will be adjusted if there are changes in the area of review; and  
3249  
3250 ~~(formerly Section 8(b)(ii)(C)(IV))(IV)~~ How site access will  
3251 be ensured for future corrective action.  
3252  
3253 ~~(formerly Section 8(e))(b)~~ Owners or operators of Class VI wells ~~must~~ shall perform  
3254 the following actions to delineate the area of review, identify all wells that require corrective  
3255 action, and perform corrective action on those wells:  
3256  
3257 ~~(formerly Section 8(e)(i))(i)~~ (i) Predict, using existing site characterization,  
3258 monitoring and operational data, and computational modeling:  
3259  
3260 ~~(formerly Section 8(e)(i)(A))(A)~~ The projected lateral and vertical  
3261 migration of the carbon dioxide plume and formation fluids in the subsurface from the  
3262 commencement of injection activities until the plume movement ceases;  
3263  
3264 ~~(formerly Section 8(e)(i)(B))(B)~~ The pressure differentials, ~~and~~  
3265 demonstrating that pressure differentials sufficient to cause the movement of injected fluids or  
3266 formation fluids into a USDW or to otherwise threaten human health, safety, or the environment  
3267 will not be present, ~~(or for until the end of~~ a fixed time period ~~as~~ determined by the  
3268 Administrator);  
3269  
3270 ~~(formerly Section 8(e)(i)(C))(C)~~ The potential need for brine  
3271 removal; ~~and~~;  
3272  
3273 ~~(formerly Section 8(e)(i)(D))(D)~~ The long-term effects of pressure  
3274 buildup if brine is not removed.  
3275  
3276 ~~(formerly Section 8(e)(ii))(ii)~~ The Use modeling ~~must~~ that:  
3277  
3278 ~~(formerly Section 8(e)(ii)(A))(A)~~ ~~Be Is~~ based on:  
3279  
3280 ~~(formerly Section 8(e)(ii)(A)(I))(I)~~ Detailed geologic data  
3281 available or collected to characterize the injection zone, confining zone, and any additional  
3282 zones; and

3283  
3284 ~~(formerly Section 8(e)(ii)(A)(II))~~(II) Anticipated operating data,  
3285 including injection pressures, rates and total volumes over the proposed operational life of the  
3286 facility;

3287  
3288 ~~(formerly Section 8(e)(ii)(B))~~(B) Takes into account any relevant  
3289 geologic heterogeneities, other discontinuities, data quality, and their possible impact on model  
3290 predictions; and

3291  
3292 ~~(formerly Section 8(e)(ii)(C))~~(C) Considers potential migration  
3293 through faults, fractures, and artificial penetrations.

3294  
3295 ~~(formerly Section 8(e)(iii))~~(iii) Using methods approved by the  
3296 Administrator, identify all penetrations, including active and abandoned wells and underground  
3297 mines, in the area of review that may penetrate the confining zone-, and Provide a description of  
3298 each well's type, construction, date drilled, location, depth, record of plugging and/or  
3299 completion, and any additional information the Administrator may require; and

3300  
3301 ~~(formerly Section 8(e)(iv))~~(iv) Determine which abandoned wells in the  
3302 area of review have been plugged in a manner that prevents the movement of:

3303  
3304 ~~(formerly Section 8(e)(iv)(A))~~(A) Carbon dioxide that may endanger  
3305 USDWs or otherwise threaten human health, safety, or the environment; or

3306  
3307 ~~(formerly Section 8(e)(iv)(B))~~(B) Displaced formation fluids, or other  
3308 fluids, including the use of materials compatible with the carbon dioxide stream, that may  
3309 endanger USDWs or otherwise threaten human health, safety, or the environment; and

3310  
3311 ~~(formerly Section 8(e)(v))~~(v) ~~Owners or operators of Class VI wells that are~~  
3312 ~~determined to need corrective action using methods that are approved by the Administrator, must~~  
3313 ~~p~~Perform corrective action on ~~all~~ any wells in the area of review ~~that the owner or operator~~  
3314 ~~determines require corrective action~~ to prevent the movement of fluid into or between USDWs  
3315 including use of materials compatible with the carbon dioxide stream, where appropriate.

3316  
3317 ~~(formerly Section 8(d))~~(c) At a fixed frequency, not to exceed two (2) years during the  
3318 operational life of the facility; or five (5) years during the post-injection site care period (until  
3319 site closure) as specified in the area of review and corrective action plan, or when monitoring  
3320 and operational conditions warrant, owners or operators ~~must~~ shall:

3321  
3322 ~~(formerly Section 8(d)(i))~~(i) Re-evaluate the area of review in the same manner  
3323 specified in ~~paragraph (e)(i)~~ subparagraph (b)(i) of this ~~s~~Section;

3324  
3325 ~~(formerly Section 8(d)(ii))~~(ii) Identify all wells in the re-evaluated area of review  
3326 that require corrective action in the same manner specified in ~~paragraph (e)(iv)~~ subparagraph  
3327 (b)(iv) of this ~~s~~Section;

3328

3329 ~~(formerly Section 8(d)(iii))(iii)~~ Perform corrective action on wells requiring  
3330 corrective action in the reevaluated area of review in the same manner specified in ~~paragraph~~  
3331 ~~(e)(v) subparagraph (b)(v)~~ of this ~~s~~Section; and

3332  
3333 ~~(formerly Section 8(d)(iv))(iv)~~ Submit an amended area of review and  
3334 corrective action plan, or demonstrate to the Administrator through monitoring data and  
3335 modeling results that no change to the area of review and corrective action plan is needed.

3336  
3337 ~~(formerly Section 8(d)(iv)(A))(A)~~ Any ~~a~~ amendments to the area of  
3338 review and corrective action plan ~~must~~ shall be subject to ~~approval~~ by of the Administrator; ~~;~~

3339  
3340 ~~(formerly Section 8(d)(iv)(B))(B)~~ Any ~~a~~ amendments to the area of  
3341 review ~~must~~ shall be incorporated into the permit; ~~and~~

3342  
3343 ~~(formerly Section 8(d)(iv)(C))(C)~~ Any ~~a~~ amendments to the area of  
3344 review are subject to the permit modification requirements of Section 4 6 of this ~~e~~Chapter, ~~as~~  
3345 appropriate.

3346  
3347 **Section 14. ~~Testing and Monitoring Requirements.~~ Construction and Operation**  
3348 **Standards for Class VI Wells.**

3349  
3350 ~~(a) — The owner or operator of a Class VI well must prepare, maintain, and comply~~  
3351 ~~with a testing and monitoring plan to verify that the geologic sequestration project is operating as~~  
3352 ~~permitted and is not endangering USDWs. The testing and monitoring plan must be submitted~~  
3353 ~~with the permit application, for Administrator approval, and must include a description of how~~  
3354 ~~the owner or operator will meet the requirements of this section, including accessing sites for all~~  
3355 ~~necessary monitoring and testing during the life of the project.~~

3356  
3357 ~~(b) — Testing and monitoring associated with geologic sequestration projects must, at a~~  
3358 ~~minimum, include:~~

3359  
3360 ~~(i) — Plans and procedures for environmental surveillance and excursion~~  
3361 ~~detection, prevention, and control programs, including a monitoring plan to:~~

3362  
3363 ~~(A) — Assess the migration of the injected carbon dioxide; and~~

3364  
3365 ~~(B) — Ensure the retention of the carbon dioxide in the geologic~~  
3366 ~~sequestration site.~~

3367  
3368 ~~(ii) — Analysis of the carbon dioxide stream with sufficient frequency to yield~~  
3369 ~~data representative of its chemical and physical characteristics;~~

3370  
3371 ~~(iii) — Installation and use, except during well workovers, of continuous~~  
3372 ~~recording devices to monitor:~~

3373  
3374 ~~(A) — Injection pressure;~~

3375  
3376 ~~(B) — Rate and volume;~~  
3377  
3378 ~~(C) — Pressure on the annulus between the tubing and the long string~~  
3379 ~~easing;~~  
3380  
3381 ~~(D) — The annulus fluid volume added; and~~  
3382  
3383 ~~(E) — The pressure on the annulus between the tubing and the long string~~  
3384 ~~easing.~~  
3385  
3386 ~~(iv) — Corrosion monitoring of the well materials for loss of mass, thickness,~~  
3387 ~~cracking, pitting, and other signs of corrosion must be performed and recorded at least quarterly~~  
3388 ~~to ensure that the well components meet the minimum standards for material strength and~~  
3389 ~~performance set forth in Section 9(b) of this chapter by:~~  
3390  
3391 ~~(A) — Analyzing coupons of the well construction materials placed in~~  
3392 ~~contact with the carbon dioxide stream;~~  
3393  
3394 ~~(B) — Routing the carbon dioxide stream through a loop constructed with~~  
3395 ~~the material used in the well and inspecting the materials in the loop; or~~  
3396  
3397 ~~(C) — Using an alternative method approved by the Administrator.~~  
3398  
3399 ~~(v) — Periodic monitoring of the groundwater quality and geochemical changes~~  
3400 ~~above the confining zone(s) that may be a result of carbon dioxide movement or displaced~~  
3401 ~~formation fluid movement through the confining zone(s) or additional identified zones including:~~  
3402  
3403 ~~(A) — The location and number of monitoring wells must be based on~~  
3404 ~~specific information about the geologic sequestration project, including injection rate and~~  
3405 ~~volume, geology, the presence of artificial penetrations and other relevant factors; and~~  
3406  
3407 ~~(B) — The monitoring frequency and spatial distribution of monitoring~~  
3408 ~~wells based on baseline geochemical data that have been collected under Section 5(b)(xiii) of this~~  
3409 ~~chapter and any modeling results in the area of review evaluation required by Section 8(e) of this~~  
3410 ~~chapter.~~  
3411  
3412 ~~(vi) — A demonstration of external mechanical integrity pursuant to Section~~  
3413 ~~13(e) at least once per year until the well is plugged; and if required by the Administrator, a~~  
3414 ~~easing inspection log pursuant to requirements of Section 13(d) of this chapter at a frequency~~  
3415 ~~established in the testing and monitoring plan;~~  
3416  
3417 ~~(vii) — A pressure fall-off test that identifies reservoir conditions with respect to~~  
3418 ~~flow dynamics at least once every five (5) years unless more frequent testing is required by the~~  
3419 ~~Administrator based on site-specific information; and~~  
3420

3421 ~~(viii) Testing and monitoring to track the extent of the carbon dioxide plume,~~  
3422 ~~the position of the pressure front, and surface displacement using:~~

3423  
3424 ~~(A) Direct methods in the injection zone(s); and~~

3425  
3426 ~~(B) Indirect methods (e.g., seismic, electrical, gravity, or~~  
3427 ~~electromagnetic surveys and/or down-hole carbon dioxide detection tools), unless the~~  
3428 ~~Administrator determines, based on site-specific geology, that such methods are not appropriate;~~

3429  
3430 ~~(ix) At the Administrator's discretion, based on site-specific conditions,~~  
3431 ~~surface air monitoring and/or soil gas monitoring to detect movement of carbon dioxide that~~  
3432 ~~could endanger a USDW, or otherwise threaten human health, safety, or the environment.~~

3433  
3434 ~~(A) The surface air or soil gas monitoring plan must be based on~~  
3435 ~~potential risks to USDWs, and modeling within the area of review;~~

3436  
3437 ~~(B) The monitoring frequency and spatial distribution of surface air~~  
3438 ~~monitoring and/or soil gas monitoring must reflect baseline data. The monitoring plan must~~  
3439 ~~specify how the proposed monitoring will yield useful information on the area of review~~  
3440 ~~delineation and the potential movement of fluid containing any contaminant into USDWs in~~  
3441 ~~exceedence of any primary drinking water regulation under 40 CFR Part 141, or which may~~  
3442 ~~otherwise adversely affect human health, safety, or the environment.~~

3443  
3444 ~~(x) If an owner or operator demonstrates that monitoring employed under 40~~  
3445 ~~CFR §§ 98.440 to 98.449 (Clean Air Act, 42 U.S.C. 7401 et seq.) accomplishes the goals of~~  
3446 ~~(b)(ix)(A) and (B) of this section, and meets the requirements pursuant to 40 CFR § 146.91(e)(5),~~  
3447 ~~the Administrator that requires surface air/soil gas monitoring must approve the use of~~  
3448 ~~monitoring employed under 40 CFR §§ 98.440 to 98.449. Compliance with §§ 98.440 to 98.449~~  
3449 ~~pursuant to this provision is considered a condition of the Class VI permit;~~

3450  
3451 ~~(xi) Any additional monitoring, as required by the Administrator, necessary to~~  
3452 ~~support, upgrade, and improve computational modeling of the area of review re-evaluation~~  
3453 ~~required under Section 8(d) of this chapter and as necessary to demonstrate that there is no~~  
3454 ~~movement of fluid containing any contaminant into underground sources of drinking water in~~  
3455 ~~exceedence of any primary drinking water regulation under 40 CFR Part 141, or which could~~  
3456 ~~otherwise adversely affect human health, safety, or the environment;~~

3457  
3458 ~~(xii) The owner or operator shall periodically review the testing and monitoring~~  
3459 ~~plan to incorporate monitoring data collected under this subpart, operational data collected under~~  
3460 ~~Section 12 of this chapter, and the most recent area of review reevaluation performed under~~  
3461 ~~Section 8 of this chapter. In no case shall the owner or operator review the testing and~~  
3462 ~~monitoring plan less often than once every five (5) years. Based on this review, the owner or~~  
3463 ~~operator shall submit an amended testing and monitoring plan or demonstrate to the~~  
3464 ~~Administrator that no amendment to the testing and monitoring plan is needed. Any amendments~~  
3465 ~~to the testing and monitoring plan must be approved by the Administrator, must be incorporated~~  
3466 ~~into the permit, and are subject to the permit modification requirements of Section 4 of this~~

3467 ~~chapter, as appropriate. Amended plans or demonstrations shall be submitted to the~~  
3468 ~~Administrator as follows:~~

3469  
3470 (A) ~~Within one (1) year of an area of review reevaluation;~~

3471  
3472 (B) ~~Following any significant changes to the facility, such as addition~~  
3473 ~~of monitoring wells or newly permitted injection wells within the area of review, on a schedule~~  
3474 ~~determined by the Administrator; or~~

3475  
3476 (C) ~~When required by the Administrator.~~

3477  
3478 (xiii) ~~A quality assurance and surveillance plan for all testing and monitoring~~  
3479 ~~requirements.~~

3480  
3481 (e) ~~The permittee shall retain records of all monitoring information, including the~~  
3482 ~~following:~~

3483  
3484 (i) ~~Calibration and maintenance records and all original strip chart recordings~~  
3485 ~~for continuous monitoring instrumentation, copies of all reports required by this permit, and~~  
3486 ~~records of all data used to complete the application for this permit, for a period of at least three~~  
3487 ~~(3) years from the date of the sample, measurement, report, or application. This period may be~~  
3488 ~~extended by request of the Administrator at any time; and~~

3489  
3490 (ii) ~~The nature and composition of all injected fluids until three (3) years after~~  
3491 ~~the completion of any plugging and abandonment procedures specified under Section 16 of this~~  
3492 ~~chapter. The Administrator may require the owner or operator to deliver the records to the~~  
3493 ~~Administrator at the conclusion of the retention period.~~

3494  
3495 (d) ~~Records of monitoring information shall include:~~

3496  
3497 (i) ~~The date, exact place, and time of sampling or measurements;~~

3498  
3499 (ii) ~~The individual(s) who performed the sampling or measurements;~~

3500  
3501 (iii) ~~The date(s) analyses were performed;~~

3502  
3503 (iv) ~~The individual(s) who performed the analyses;~~

3504  
3505 (v) ~~The analytical techniques or methods used; and~~

3506  
3507 (vi) ~~The results of such analyses.~~

3508  
3509 (formerly Section 9(a))(a) The owner or operator ~~must~~ shall design, construct, and  
3510 complete ~~ensure that~~ all Class VI wells ~~are designed, at a minimum,~~ to meet the construction  
3511 standards set forth by the Department and the Wyoming Oil and Gas Conservation Commission,  
3512 ~~as applicable, and constructed and completed~~ in this Section and to:

3513  
3514 ~~(formerly Section 9(a)(i))(i)~~ Prevent the movement of fluids into or between  
3515 USDWs or into any unauthorized zones;

3516  
3517 ~~(formerly Section 9(a)(ii))(ii)~~ ~~Permit~~ Allow the use of appropriate testing devices  
3518 and workover tools; and

3519  
3520 ~~(formerly Section 9(a)(iii))(iii)~~ ~~Permit~~ Allow continuous monitoring of the  
3521 annulus space between the injection tubing and long string casing.

3522  
3523 ~~(formerly Section 9(b))(b)~~ Casing and cement or other materials used in the  
3524 construction of each Class VI well ~~must~~ shall have sufficient structural strength and be designed  
3525 for the life of the well.

3526  
3527 ~~(formerly Section 9(b)(i))(i)~~ All well materials ~~must~~ shall be compatible with  
3528 fluids with which the materials may be expected to come into contact; and shall meet or exceed  
3529 the following standards ~~developed for such materials by: the American Petroleum Institute,~~  
3530 ~~ASTM International, or comparable standards acceptable to the Administrator.~~

3531  
3532 (A) American Petroleum Institute Specification 5CT;

3533  
3534 (B) American Petroleum Institute RP 5C1;

3535  
3536 (C) American Petroleum Institute RP 10B-2;

3537  
3538 (D) American Petroleum Institute Specification 10A;

3539  
3540 (E) American Petroleum Institute RP 10D-2;

3541  
3542 (F) American Petroleum Institute Specification 11D1;

3543  
3544 (G) American Petroleum Institute RP 14B; and

3545  
3546 (H) American Petroleum Institute RP 14C.

3547  
3548 ~~(formerly Section 9(b)(ii))(ii)~~ The casing and cementing program ~~must~~ shall be  
3549 designed to prevent the movement of fluids into or between USDWs.

3550  
3551 ~~(formerly Section 9(b)(iii))(iii)~~ ~~In order to~~ To allow the Administrator to  
3552 determine and specify casing and cementing requirements, the owner or operator ~~must~~ shall  
3553 provide the following information in a construction design plan:

3554  
3555 ~~(formerly Section 9(b)(iii)(A))(A)~~ (A) Depth to the injection zone;

3556  
3557 ~~(formerly Section 9(b)(iii)(B))(B)~~ (B) Injection pressure, external pressure,  
3558 internal pressure, and axial loading;

3559  
3560 ~~(formerly Section 9(b)(iii)(C))~~(C) Hole size;  
3561  
3562 ~~(formerly Section 9(b)(iii)(D))~~(D) Size and grade of all casing strings  
3563 (wall thickness, external diameter, nominal weight, length, joint specification and construction  
3564 material), including whether the casing is new, or used;  
3565  
3566 ~~(formerly Section 9(b)(iii)(E))~~(E) Corrosiveness of the carbon dioxide  
3567 stream and formation fluids;  
3568  
3569 ~~(formerly Section 9(b)(iii)(F))~~(F) Down-hole temperatures and  
3570 pressures;  
3571  
3572 ~~(formerly Section 9(b)(iii)(G))~~(G) Lithology of injection and confining  
3573 zones;  
3574  
3575 ~~(formerly Section 9(b)(iii)(H))~~(H) Type or grade of cement and  
3576 additives; and  
3577  
3578 ~~(formerly Section 9(b)(iii)(I))~~(I) Quantity, chemical composition, and  
3579 temperature of the carbon dioxide stream.  
3580  
3581 ~~(formerly Section 9(b)(iv))~~(iv) Casing ~~must~~ shall extend through the base of  
3582 the lowermost USDW above the injection zone and be cemented to the surface through the use of  
3583 a single or multiple strings of casing and cement.  
3584  
3585 ~~(formerly Section 9(b)(v))~~(v) At least one (1) long string casing, using a sufficient  
3586 number of centralizers, ~~must~~ shall be set ~~in a manner so as~~ to create a cement bond through the  
3587 overlying and/or underlying confining zone(s).  
3588  
3589 ~~(formerly Section 9(b)(v))~~(A) The long string casing ~~must shall: extend to~~  
3590 ~~the injection zone, must be cemented by circulating cement to the surface in one (1) or more~~  
3591 ~~stages, and must be isolated by placing cement and/or other isolation techniques as necessary to~~  
3592 ~~provide adequate isolation of the injection zone and provide for protection of USDWs, human~~  
3593 ~~health, safety, and the environment.~~  
3594  
3595 ~~(formerly Section 9(b)(v))~~(I) ~~e~~Extend to the injection zone;  
3596  
3597 ~~(formerly Section 9(b)(v))~~(II) ~~must b~~Be cemented by circulating  
3598 cement to the surface in one (1) or more stages; and  
3599  
3600 ~~(formerly Section 9(b)(v))~~(III) ~~must b~~Be isolated by placing  
3601 cement ~~and/or~~ other isolation techniques as necessary to provide adequate isolation of the  
3602 injection zone and provide for protection of USDWs, human health, safety, and the environment.  
3603

3604 ~~(formerly Section 9(b)(v)(A))~~(B) Circulation of cement may be  
3605 accomplished by staging. The Administrator may approve an alternative method of cementing in  
3606 cases where the cement cannot be recirculated to the surface, ~~provided~~ if the owner or operator  
3607 ~~can~~ demonstrates by using logs that the cement does not allow fluid movement behind the  
3608 wellbore.

3609  
3610 ~~(formerly Section 9(b)(vi))~~(vi) Cement and cement additives ~~must~~ shall be  
3611 suitable for use with the carbon dioxide stream and formation fluids, and be of sufficient quality  
3612 and quantity to maintain integrity over the operating life of the well.

3613  
3614 ~~(formerly Section 9(b)(vii))~~(vii) The integrity and location of the cement  
3615 shall be verified using technology capable of evaluating cement quality radially with sufficient  
3616 resolution to identify the location of channels, voids, or other areas of missing cement to ensure  
3617 that USDWs are not endangered and that human health, safety, and the environment are  
3618 protected. The owner or operator shall provide a cement bond log (CBL) to the Administrator  
3619 with an evaluation, certified by a licensed professional engineer or a licensed professional  
3620 geologist, of the following:

3621  
3622 (A) Quantitative estimations of the cement compressive strength;

3623  
3624 (B) A bond index; and

3625  
3626 (C) Qualitative interpretation of the cement-to-formation bond.

3627  
3628 ~~(formerly Section 9(e))~~(c) All owners and operators of Class VI wells ~~must~~ shall  
3629 inject fluids through tubing with a packer set at a depth opposite a cemented interval at the  
3630 location approved by the Administrator.

3631  
3632 ~~(formerly Section 9(e)(i))~~(i) Tubing and packer materials used in the  
3633 construction of each Class VI well ~~must~~ shall be compatible with fluids with which the materials  
3634 may be expected to come into contact and ~~must~~ shall meet or exceed the following standards  
3635 ~~developed for such materials by the American Petroleum Institute, ASTM International, or~~  
3636 ~~comparable standards acceptable to the Administrator.:~~

3637  
3638 (A) American Petroleum Institute Specification 5CT;

3639  
3640 (B) American Petroleum Institute RP 5C1;

3641  
3642 (C) American Petroleum Institute RP 10B-2;

3643  
3644 (D) American Petroleum Institute Specification 10A;

3645  
3646 (E) American Petroleum Institute RP 10D-2;

3647  
3648 (F) American Petroleum Institute Specification 11D1;

3649

3650 (G) American Petroleum Institute RP 14B; and

3651  
3652 (H) American Petroleum Institute RP 14C.

3653  
3654 ~~(formerly Section 9(e)(ii))(ii) In order for t~~The Administrator ~~to~~ shall determine  
3655 and specify requirements for tubing and packer; ~~the owner or operator must submit~~ based on the  
3656 following information:

3657  
3658 ~~(formerly Section 9(e)(ii)(A))(A)~~ (A) Depth of setting;

3659  
3660 ~~(formerly Section 9(e)(ii)(B))(B)~~ (B) Characteristics of the carbon dioxide  
3661 stream (e.g., chemical content, corrosiveness, temperature, and density) and formation fluids;

3662  
3663 ~~(formerly Section 9(e)(ii)(C))(C)~~ (C) Maximum proposed injection  
3664 pressure;

3665  
3666 ~~(formerly Section 9(e)(ii)(D))(D)~~ (D) Maximum proposed annular  
3667 pressure;

3668  
3669 ~~(formerly Section 9(e)(ii)(E))(E)~~ (E) Maximum proposed injection rate  
3670 (intermittent or continuous) and volume of the carbon dioxide stream;

3671  
3672 ~~(formerly Section 9(e)(ii)(F))(F)~~ (F) Size of tubing and casing; and

3673  
3674 ~~(formerly Section 9(e)(ii)(G))(G)~~ (G) Tubing tensile, burst, and collapse  
3675 strengths.

3676  
3677 **Section 15. ~~Reporting Requirements.~~ Class VI Injection Depth Waiver**  
3678 **Requirements.**

3679  
3680 ~~(a) — The owner or operator must, at a minimum, provide the following reports to the~~  
3681 ~~Administrator, for each permitted Class VI well:~~

3682  
3683 ~~(i) — Semi-annual reports, which are required by the permit shall be submitted~~  
3684 ~~to the Administrator within thirty (30) days following the end of the period covered in the report,~~  
3685 ~~and shall contain:~~

3686  
3687 ~~(A) — Any changes to the physical, chemical, and other relevant~~  
3688 ~~characteristics of the carbon dioxide stream from the proposed operating data;~~

3689  
3690 ~~(B) — Monthly average, maximum and minimum values for injection~~  
3691 ~~pressure, flow rate and volume, and annular pressure;~~

3692  
3693 ~~(C) — A description of any event that exceeds operating parameters for~~  
3694 ~~annulus pressure or injection pressure as specified in the permit;~~

3695

- 3696 ~~(D) — A description of any event that triggers a shutdown device required~~  
3697 ~~pursuant to Section 12(g) of this chapter, and the response taken;~~  
3698
- 3699 ~~(E) — The monthly volume of the carbon dioxide stream injected over the~~  
3700 ~~reporting period and project cumulatively;~~  
3701
- 3702 ~~(F) — Monthly annulus fluid volume added; and~~  
3703
- 3704 ~~(G) — The results of monitoring prescribed under Section 14 of this~~  
3705 ~~chapter.~~  
3706
- 3707 ~~(ii) — Report, within thirty (30) days the results of:~~  
3708
- 3709 ~~(A) — Periodic tests of mechanical integrity;~~  
3710
- 3711 ~~(B) — Any other test of the injection well conducted by the permittee if~~  
3712 ~~required by the Administrator; and~~  
3713
- 3714 ~~(C) — Any well workover.~~  
3715
- 3716 ~~(iii) — Report, within twenty four (24) hours:~~  
3717
- 3718 ~~(A) — Any evidence that the injected carbon dioxide stream or associated~~  
3719 ~~pressure front may cause an endangerment to a USDW;~~  
3720
- 3721 ~~(B) — Any noncompliance with a permit condition, or malfunction of the~~  
3722 ~~injection system, which may cause fluid migration into or between USDWs;~~  
3723
- 3724 ~~(C) — Any triggering of a shut-off system (i.e., down-hole or at the~~  
3725 ~~surface);~~  
3726
- 3727 ~~(D) — Pursuant to compliance with the requirement at Section 14(b)(x) of~~  
3728 ~~this chapter for surface air or soil gas monitoring or other monitoring technologies, if required by~~  
3729 ~~the Administrator, any release of carbon dioxide to the atmosphere or biosphere.~~  
3730
- 3731 ~~(iv) — Owners or operators must notify the Administrator in writing thirty (30)~~  
3732 ~~days in advance of:~~  
3733
- 3734 ~~(A) — Any planned well workover;~~  
3735
- 3736 ~~(B) — Any planned stimulation activities, other than stimulation for~~  
3737 ~~formation testing conducted under Section 5 of this chapter; and~~  
3738
- 3739 ~~(C) — Any other planned test of the injection well conducted by the~~  
3740 ~~permittee.~~  
3741

3742 ~~(b) — Owners or operators must submit all required reports, submittals, and notifications~~  
3743 ~~to both the Administrator and to EPA, in an electronic format acceptable to the EPA.~~

3744  
3745 ~~(c) — The permittee shall submit a written report to the Administrator of all remedial~~  
3746 ~~work concerning the failure of equipment or operational procedures that resulted in a violation of~~  
3747 ~~a permit condition, at the completion of the remedial work.~~

3748  
3749 ~~(d) — For any aborted or curtailed operation, a complete report shall be submitted~~  
3750 ~~within thirty (30) days of complete termination of the discharge or associated activity.~~

3751  
3752 ~~(e) — The permittee shall retain all monitoring records required by the permit for a~~  
3753 ~~period of ten (10) years following site closure. The Administrator may require the owner or~~  
3754 ~~operator to deliver the records to the Administrator at the conclusion of the retention period.~~

3755  
3756 ~~formerly Section 10(a))(a)~~ The An owner ~~and~~/or operator seeking a waiver of the  
3757 requirement to inject below the lowermost USDW shall submit a supplemental report concurrent  
3758 with the permit application. The report shall contain the following:

3759  
3760 ~~formerly Section 10(a)(i))(i)~~ A demonstration that the injection zones are  
3761 laterally continuous, is are not a USDWs, and is are not hydraulically connected to USDWs;  
3762 ~~does~~ not outcrop within the area of review; has have adequate injectivity, volume, and sufficient  
3763 porosity to safely contain the injected carbon dioxide and formation fluids; and has have  
3764 appropriate geochemistry.;

3765  
3766 ~~formerly Section 10(a)(ii))(ii)~~ A demonstration that the injection zones are  
3767 bounded by laterally continuous, impermeable confining units above and below the injection  
3768 zones adequate to prevent fluid movement and pressure buildup outside of the injection zones;  
3769 ~~and~~

3770  
3771 ~~formerly Section 10(a)(ii))(iii)~~ A demonstration that the confining unit(s)  
3772 ~~is/are~~ free of transmissive faults and fractures.;

3773  
3774 ~~formerly Section 10(a)(ii))(iv)~~ The report shall further A characterization  
3775 of the regional fracture properties and ~~e~~ontain a demonstration that the fractures will not interfere  
3776 with injection, serve as conduits, or endanger USDWs.;

3777  
3778 ~~formerly Section 10(a)(iii))(v)~~ A computer model demonstrating that  
3779 USDWs above and below the injection zone will not be endangered as a result of fluid  
3780 movement. The modeling shall be done in conjunction with the area of review determination, ~~as~~  
3781 described in Section 8 13 of this ~~e~~Chapter, ~~and~~ is subject to the requirements; ~~as described in of~~  
3782 Section ~~8(e)-13(b)~~ of this ~~e~~Chapter, and shall be periodically reevaluationed, ~~as described in~~  
3783 required by Section ~~8(d) 13(c)~~ of this ~~e~~Chapter.;

3784  
3785 ~~formerly Section 10(a)(iv))(vi)~~ A demonstration that well design and  
3786 construction, in conjunction with the waiver, will ensure isolation of the injectate in lieu of the

3787 requirements of Section ~~9(a)(i)~~ 14(a)(i) of this ~~e~~Chapter and will meet the well construction  
3788 requirements of paragraph (f) of this ~~s~~Section;

3789  
3790 ~~formerly Section 10(a)(v))(vii)~~ (vii) A description of how the monitoring and  
3791 testing and any additional plans will be tailored to this geologic sequestration project to ensure  
3792 protection of USDWs above and below the injection zone;

3793  
3794 ~~formerly Section 10(a)(vi))(viii)~~ (viii) Information on the location of all public  
3795 water supplies affected, reasonably likely to be affected, or served by USDWs in the area of  
3796 review; and

3797  
3798 ~~formerly Section 10(a)(vii))(ix)~~ (ix) Any other information requested by the  
3799 Administrator.

3800  
3801 ~~formerly Section 10(b))(b)~~ (b) To inform the EPA Regional Administrator's decision on  
3802 whether to grant a waiver of the injection depth requirements of 40 C.F.R. §§ 144.6, 146.5(f),  
3803 and 146.86(a)(1), the Administrator ~~must~~ shall submit; to the EPA Regional Administrator;  
3804 documentation of the following:

3805  
3806 ~~formerly Section 10(b)(i))(i)~~ (i) An evaluation of the following information as it  
3807 relates to siting, construction, and operation of a geologic sequestration project with a waiver:

3808  
3809 ~~formerly Section 10(b)(i)(A))(A)~~ (A) The integrity of the upper and lower  
3810 confining units;

3811  
3812 ~~formerly Section 10(b)(i)(B))(B)~~ (B) The suitability of the injection  
3813 zone(s) (~~e.g., including~~ including lateral continuity; ~~lack of transmissive faults and fractures;~~ and  
3814 knowledge of current or planned artificial penetrations into the injection zone(s) or formations  
3815 below the injection zone);

3816  
3817 ~~formerly Section 10(b)(i)(C))(C)~~ (C) The potential capacity of the  
3818 geologic formation(s) to sequester carbon dioxide, accounting for the availability of alternative  
3819 injection sites;

3820  
3821 ~~formerly Section 10(b)(i)(D))(D)~~ (D) All other site characterization data,  
3822 the proposed emergency and remedial response plan, and a demonstration of financial  
3823 responsibility;

3824  
3825 ~~formerly Section 10(b)(i)(E))(E)~~ (E) Community needs, demands, and  
3826 supply from drinking water resources;

3827  
3828 ~~formerly Section 10(b)(i)(F))(F)~~ (F) Planned needs; and potential ~~and/or~~  
3829 future use of USDWs and non-USDWs aquifers in the area;

3830  
3831 ~~formerly Section 10(b)(i)(G))(G)~~ (G) Planned or permitted water,  
3832 hydrocarbon, or mineral resource exploitation potential of the proposed injection formation(s)

3833 and other formations both above and below the injection zone to determine if there are any plans  
3834 to drill through the formation to access resources in or beneath the proposed injection zone(s) ~~or~~  
3835 formation(s);

3836  
3837 ~~formerly Section 10(b)(i)(H))(H)~~ The proposed plan for securing  
3838 alternative resources or treating USDW formation waters in the event of contamination related to  
3839 the Class VI injection activity; and

3840  
3841 ~~formerly Section 10(b)(i)(I))(I)~~ Any other applicable considerations  
3842 or information requested by the Administrator; ~~;~~

3843  
3844 ~~formerly Section 10(b)(ii))(ii)~~ Consultation with the ~~P~~ublic ~~W~~ater ~~S~~ystem  
3845 ~~S~~upervision ~~D~~irectors of all States and Tribes having jurisdiction over lands within the area of  
3846 review of a well for which a waiver is sought; ~~;~~ and

3847  
3848 ~~formerly Section 10(b)(iii))(iii)~~ Any written waiver-related information  
3849 submitted by ~~the a P~~ublic ~~W~~ater ~~S~~ystem ~~S~~upervision ~~D~~irector(s) to the ~~(UIC) Director~~  
3850 Department.

3851  
3852 ~~formerly Section 10(e))(c)~~ Concurrent with the Class VI permit application public  
3853 notice process pursuant to Section 27 of this Chapter, the Administrator shall give public notice  
3854 that an injection depth waiver request has been submitted. The notice shall clearly state:

3855  
3856 ~~(formerly Section 10(e)(i))(i)~~ The depth of the proposed injection zone(s);

3857  
3858 ~~(formerly Section 10(e)(ii))(ii)~~ The location of the injection wells;

3859  
3860 ~~(formerly Section 10(e)(iii))(iii)~~ The name and depth of all USDWs within  
3861 the area of review;

3862  
3863 ~~(formerly Section 10(e)(iv))(iv)~~ A map of the area of review;

3864  
3865 ~~(formerly Section 10(e)(v))(v)~~ The names of any public water supplies  
3866 affected, reasonably likely to be affected, or served by the USDWs in the area of review; and

3867  
3868 ~~(formerly Section 10(e)(vi))(vi)~~ The results of any consultation between the  
3869 UIC program and the Public Water System Supervision ~~program~~ Directors within the area of  
3870 review.

3871  
3872 ~~(formerly Section 10(d))(d)~~ Following the injection depth waiver application public  
3873 notice, the Administrator of the Water Quality Division of the Department of Environmental  
3874 Quality shall provide all the information received through the waiver application process to the  
3875 US EPA Regional Administrator. Based on the information provided, the US EPA Regional  
3876 Administrator shall provide written concurrence or non-concurrence regarding waiver issuance.

3877

3878 ~~(formerly Section 10(d)(i))~~(i) If the US EPA Regional Administrator requires  
3879 additional information to make a decision, the Administrator of the Water Quality Division of  
3880 the Department of Environmental Quality shall provide the information. The US EPA Regional  
3881 Administrator may require public notice of the new information.  
3882

3883 ~~(formerly Section 10(d)(i))~~(ii) The Administrator of the Water Quality Division of  
3884 the Department of Environmental Quality shall not issue a depth injection waiver without receipt  
3885 of written concurrence from the US EPA Regional Administrator.  
3886

3887 ~~(formerly Section 10(e))~~(e) If an injection depth waiver is issued, within thirty (30)  
3888 days of issuance, the EPA shall post the following information on the Office of Water's website:  
3889

3890 ~~(formerly Section 10(e)(i))~~(i) The depth of the proposed injection zone(s);

3891  
3892 ~~(formerly Section 10(e)(ii))~~(ii) The location of the injection wells;

3893  
3894 ~~(formerly Section 10(e)(iii))~~(iii) The name and depth of all USDWs within  
3895 the area of review;

3896  
3897 ~~(formerly Section 10(e)(iv))~~(iv) A map of the area of review;

3898  
3899 ~~(formerly Section 10(e)(v))~~(v) The names of any public water supplies  
3900 affected, reasonably likely to be affected, or served by the USDWs in the area of review; and  
3901

3902 ~~(formerly Section 10(e)(vi))~~(vi) The date of waiver issuance.  
3903

3904 ~~(formerly Section 10(f))~~(f) Upon receipt of a waiver of the requirement to inject below  
3905 the lowermost USDW for geologic sequestration, the owner or operator of a Class VI well ~~must~~  
3906 shall comply with the following:  
3907

3908 ~~(formerly Section 10(f)(i))~~(i) All requirements of Sections ~~8-13, 11-17, 12-18, 13~~  
3909 ~~19, 15-22, 16-23, 18-25~~, and ~~19~~ 26 of this ~~e~~Chapter;

3910  
3911 ~~(formerly Section 10(f)(ii))~~(ii) All the requirements of Section ~~9~~ 14 of this  
3912 ~~e~~Chapter with the following modified requirements:  
3913

3914 ~~(formerly Section 10(f)(ii)(A))~~(A) In lieu of meeting the requirements  
3915 of Section 14(a)(i) of this Chapter, ~~F~~the Class VI well shall be constructed and completed to  
3916 prevent the movement of fluids into any unauthorized zones, including USDWs, ~~in lieu of~~  
3917 ~~requirements of Section 9(a)(i) of this chapter.~~

3918  
3919 ~~(formerly Section 10(f)(ii)(B))~~(B) In lieu of meeting the requirements  
3920 of Section 14(b) and 14(b)(i) of this Chapter, ~~F~~the casing and cementing program shall ~~be~~  
3921 ~~designed to~~ prevent the movement of fluids into any unauthorized zones including USDWs, ~~in~~  
3922 ~~lieu of requirements of Section 9(b) and 9(b)(i) of this chapter.~~ and  
3923

3924 ~~(formerly Section 10(f)(ii)(C))~~(C) The casing shall extend through the  
3925 base of the nearest USDW directly above the injection zone and shall be cemented to the surface;  
3926 or, at the Administrator's discretion, at another formation above the injection zone and below the  
3927 nearest USDW above the injection zone;

3928  
3929 ~~(formerly Section 10(f)(iii))~~(iii) All the requirements of Section ~~14~~ 20 of this  
3930 ~~e~~Chapter with the following modified requirements:

3931  
3932 ~~(formerly Section 10(f)(iii)(A))~~(A) The owner or operator shall monitor  
3933 the groundwater quality, geochemical changes, and pressure in the first USDWs immediately  
3934 above and below the injection zone(s); and in any other formation at the discretion of the  
3935 Administrator; and

3936  
3937 ~~(formerly Section 10(f)(iii)(B))~~(B) The owner or operator shall conduct  
3938 testing and monitoring in the injection zone(s) to track the extent of the carbon dioxide plume  
3939 and the presence or absence of elevated pressure (e.g., the pressure front) by using direct  
3940 methods ~~to monitor for pressure changes in the injection zone(s); and;~~ indirect methods (e.g.,  
3941 seismic, electrical, gravity, or electromagnetic surveys and ~~/or~~ down-hole carbon dioxide  
3942 detection tools); unless the Administrator determines, based on site-specific geology, that such  
3943 methods are not appropriate;

3944  
3945 ~~(formerly Section 10(f)(iv))~~(iv) All requirements of Section ~~17~~ 24 of this  
3946 ~~e~~Chapter with the following; modified ~~post-injection site care monitoring~~ requirements:

3947  
3948 ~~(formerly Section 10(f)(iv)(A))~~(A) The owner or operator shall monitor  
3949 the groundwater quality, geochemical changes and pressure in the first USDWs immediately  
3950 above and below the injection zone; and in any other formations at the discretion of the  
3951 Administrator; and

3952  
3953 ~~(formerly Section 10(f)(iv)(B))~~(B) Testing and monitoring in the  
3954 injection zone(s) to track the extent of the carbon dioxide plume and the presence or absence of  
3955 elevated pressure (e.g., the pressure front) by using direct methods ~~in the injection zone(s); and~~  
3956 indirect methods (e.g., seismic, electrical, gravity, or electromagnetic surveys and ~~/or~~ down-hole  
3957 carbon dioxide detection tools); unless the Administrator determines, based on site-specific  
3958 geology, that such methods are not appropriate; and

3959  
3960 ~~(formerly Section 10(f)(v))~~(v) Any additional requirements ~~requested~~  
3961 imposed by the Administrator to ensure protection of USDWs above and below the injection  
3962 zone(s).

3963  
3964 **Section 16. ~~Injection Well-plugging. Expansion to the Areal Extent of Existing~~**  
3965 **Class II Injection Well Aquifer Exemptions for Class VI Injection Wells.**

3966  
3967 ~~(a) — Prior to the well plugging, the owner or operator must flush each Class VI~~  
3968 ~~injection well with a buffer fluid, determine bottom hole reservoir pressure, and perform a final~~  
3969 ~~external mechanical integrity test in accordance with Section 13 of this chapter.~~

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~~(b) — The owner or operator of a Class VI well must prepare, maintain, update on the same schedule as the update to the area of review delineation, and comply with a well-plugging plan that is acceptable to the Administrator. Temporary or intermittent cessation of injection operations is not abandonment. The well-plugging plan must include the following information:~~

~~(i) — Appropriate test or measure to determine bottom hole reservoir pressure;~~

~~(ii) — Appropriate testing methods to ensure final external mechanical integrity as specified in Section 13 of this chapter;~~

~~(iii) — The type and number of plugs to be used;~~

~~(iv) — The placement of each plug including the elevation of the top and bottom of each plug;~~

~~(v) — The type and grade and quantity of material, suitable for use with the carbon dioxide stream, to be used in plugging;~~

~~(vi) — A description of the method of placement of the plugs.~~

~~(c) — The owner or operator must notify the Administrator, in writing, at least sixty (60) days before plugging a well.~~

~~(i) — If any changes have been made to the original well-plugging plan, the owner or operator must also provide the revised well-plugging plan.~~

~~(ii) — At the discretion of the Administrator, a shorter notice period may be allowed.~~

~~(iii) — Any amendments to the injection well-plugging plan must be approved by the Administrator, must be incorporated into the permit, and are subject to the permit modification requirements of Section 4 of this chapter, as appropriate.~~

~~(d) — Within sixty (60) days after completion of plugging and abandonment of a well or well field the permittee shall submit to the Administrator a final report that includes:~~

~~(i) — Certification of completion in accordance with approved plans and specifications by a licensed professional engineer or a licensed professional geologist.~~

~~(ii) — Certification of accuracy by the owner or operator and by the person who performed the plugging operation (if other than the owner or operator).~~

~~(iii) — The owner or operator shall retain the well-plugging report for ten (10) years following site closure.~~

4016 ~~(formerly Section 5(e)(i)(A))(a)~~ The owner or operator of a Class II enhanced oil  
4017 recovery or enhanced gas recovery well that requests an expansion of the areal extent of an  
4018 existing aquifer exemption for the exclusive purpose of Class VI injection for geologic  
4019 sequestration ~~must~~ shall define (by narrative description, illustrations, maps, or other means) and  
4020 describe (in geographic and/or geometric terms (such as vertical and lateral limits and gradient)  
4021 that are clear and definite); all aquifers or parts thereof that are requested to be designated as  
4022 exempted using the criteria in subparagraphs ~~(d)(i)(A-C)(b)(i)(A)-(C)~~ of this ~~s~~Section.

4023  
4024 ~~(formerly Section 5(e)(i))(b)~~ The Administrator may consider a request from an owners  
4025 ~~and/or operators~~ of permitted Class II injection well~~(s) that are seeking~~ to convert ~~their its~~ well~~(s)~~  
4026 to a Class VI well and ~~are seeking an expansion to~~ expand the areal extent of ~~an the~~ existing  
4027 Class II enhanced oil recovery or enhanced gas recovery aquifer exemption for the exclusive  
4028 purpose of Class VI injection for geologic sequestration.

4029  
4030 ~~(formerly Section 5(e)(i))(i)~~ The Administrator may approve the request if the  
4031 existing aquifer exemption and the ~~affected~~ wells meet the following conditions:

4032  
4033 ~~(formerly Section 5(e)(i)(A))(A)~~ ~~It~~ The groundwater does not  
4034 currently serve as a source of drinking water; ~~and~~

4035  
4036 ~~(formerly Section 5(e)(i)(B))(B)~~ The total dissolved solids content of  
4037 the groundwater is more than 3,000 mg/L and less than 10,000 mg/L; and

4038  
4039 ~~(formerly Section 5(e)(i)(C))(C)~~ ~~It~~ The groundwater is not reasonably  
4040 expected to supply a public water system.

4041  
4042 ~~(formerly Section 5(e)(ii)(B))(ii)~~ In evaluating The Administrator may  
4043 approve a request to expand the areal extent of an aquifer exemption of a Class II enhanced oil  
4044 recovery or enhanced gas recovery well for the purpose of Class VI injection; if the  
4045 Administrator;

4046  
4047 ~~(formerly Section 5(e)(ii)(B))(A)~~ must dDetermines that the request  
4048 meets the criteria for exemptions in subparagraphs ~~(d)(i)(A-C)(b)(i)(A)-(C)~~ of this ~~s~~Section; ;

4049  
4050 ~~(formerly Section 5(e)(ii)(B)(II))(B)~~ in order to ensure Determines that  
4051 the proposed injection operation will not at any time endanger USDWs including non-exempted  
4052 portions of the injection formation; and

4053  
4054 ~~(formerly Section 5(e)(ii)(B))(C)~~ In making the determination, the  
4055 Administrator shall eConsiders, in making the determinations required by subparagraphs  
4056 (b)(ii)(A)-(B) of this Section, the following:

4057  
4058 ~~(formerly Section 5(e)(ii)(B)(I))(I)~~ Current and potential future  
4059 use of the USDWs to be exempted as drinking water resources;

4060  
4061 ~~(formerly Section 5(e)(ii)(B)(II))(II)~~ The predicted extent of the

4062 injected carbon dioxide plume, and any mobilized fluids that may result in degradation of water  
4063 quality; over the lifetime of the geologic sequestration project, as informed by computational  
4064 modeling performed pursuant to Section ~~8(e)(i)~~ 13(b)(i) of this eChapter; ~~in order to ensure that~~  
4065 ~~the proposed injection operation will not at any time endanger USDWs including non-exempted~~  
4066 ~~portions of the injection formation;~~

4067  
4068 ~~(formerly Section 5(e)(ii)(B)(III))(III)~~ Whether the areal  
4069 extent of the expanded aquifer exemption is of sufficient size to account for any possible  
4070 revisions to the computational model during reevaluation of the area of review, pursuant to  
4071 Section ~~8(d)~~ 13(c) of this eChapter; and

4072  
4073 ~~(formerly Section 5(e)(ii)(B)(IV))(IV)~~ Any information  
4074 submitted to support a an injection depth waiver request ~~made by the owner or operator under~~  
4075 pursuant to Section ~~10~~ 15 of this eChapter; ~~if appropriate.~~

4076  
4077 ~~(formerly Section 5(e)(ii))(c)~~ Such requests will Approvals under this Section are not be  
4078 final until;

4079  
4080 ~~(formerly Section 5(e)(ii))(i)~~ tThe Administrator submits the request as a  
4081 revision to the ~~applicable Federal UIC~~ state-administered program under 40 C.F.R. Part 147 or as  
4082 a substantial ~~program~~ revision ~~to an approved~~ of a Sstate UIC program under 40 C.F.R. § 145.32;  
4083 and

4084  
4085 ~~(formerly Section 5(e)(ii))(ii)~~ EPA approves the ~~request~~ revision.

4086  
4087 **Section 17. ~~Post-injection Site Care and Site Closure.~~ Logging, Sampling, and**  
4088 **Testing Prior to Injection Well Operation.**

4089  
4090 ~~(a) — The owner or operator of a Class VI well must prepare, maintain, update on the~~  
4091 ~~same schedule as the update to the area of review delineation, and comply with a plan for post-~~  
4092 ~~injection site care and site closure that meets the requirements of paragraph (a)(ii) of this~~  
4093 ~~sSection and is acceptable to the Administrator.~~

4094  
4095 ~~————— (i) — The owner or operator must submit the post-injection site care and site~~  
4096 ~~closure plan as a part of the permit application to be approved by the Administrator, in~~  
4097 ~~consultation with EPA.~~

4098  
4099 ~~————— (ii) — The post-injection site care and site closure plan must include the~~  
4100 ~~following information:~~

4101  
4102 ~~————— (A) — A demonstration containing substantial evidence that the geologic~~  
4103 ~~sequestration project will no longer pose a risk of endangerment to USDWs or will not harm or~~  
4104 ~~present a risk to human health, safety, or the environment at the end of the post-injection site~~  
4105 ~~care timeframe. The demonstration must be based on significant, site-specific data and~~  
4106 ~~information, including all data and information collected pursuant to Sections 4 and 7 of this~~  
4107 ~~chapter.~~

- 4108  
4109 ~~\_\_\_\_\_ (B) The site closure plan shall address all reclamation, required~~  
4110 ~~monitoring, and remediation sufficient to show that the carbon dioxide injected into the geologic~~  
4111 ~~sequestration site will not harm human health, safety, the environment, or drinking water~~  
4112 ~~supplies.~~  
4113  
4114 ~~\_\_\_\_\_ (C) Detailed plans for post-injection monitoring, verification,~~  
4115 ~~maintenance, and mitigation;~~  
4116  
4117 ~~\_\_\_\_\_ (D) The pressure differential between pre-injection and predicted post-~~  
4118 ~~injection pressures in the injection zone;~~  
4119  
4120 ~~\_\_\_\_\_ (E) The predicted position of the carbon dioxide plume and associated~~  
4121 ~~pressure front at the time when plume movement has ceased and pressure differentials sufficient~~  
4122 ~~to cause the movement of injected fluids or formation fluids into a USDW are no longer present,~~  
4123 ~~as demonstrated in the area of review evaluation required under Section 8(c)(i) of this chapter;~~  
4124  
4125 ~~\_\_\_\_\_ (F) A description of post-injection monitoring locations, methods, and~~  
4126 ~~proposed frequency; and~~  
4127  
4128 ~~\_\_\_\_\_ (G) A proposed schedule for submitting post-injection site care~~  
4129 ~~monitoring results pursuant to Section 15(b) of this chapter, as appropriate.~~  
4130  
4131 ~~\_\_\_\_\_ (H) The duration of the post-injection site care timeframe that ensures~~  
4132 ~~compliance with subparagraph (A) of this subsection.~~  
4133  
4134 ~~\_\_\_\_\_ (I) The results of computational modeling performed pursuant to~~  
4135 ~~delineation of the area of review under Section 8 of this chapter;~~  
4136  
4137 ~~\_\_\_\_\_ (J) The predicted timeframe for pressure decline within the injection~~  
4138 ~~zone, and any other zones, such that formation fluids may not be forced into any USDWs; and/or~~  
4139 ~~the timeframe for pressure decline to pre-injection pressures;~~  
4140  
4141 ~~\_\_\_\_\_ (K) The predicted rate of carbon dioxide plume migration within the~~  
4142 ~~injection zone, and the predicted timeframe for the cessation of migration;~~  
4143  
4144 ~~\_\_\_\_\_ (L) A description of the site-specific processes that will result in~~  
4145 ~~carbon dioxide trapping including immobilization by capillary trapping, dissolution, and~~  
4146 ~~mineralization at the site;~~  
4147  
4148 ~~\_\_\_\_\_ (M) The predicted rate of carbon dioxide trapping in the immobile~~  
4149 ~~capillary phase, dissolved phase, and/or mineral phase;~~  
4150  
4151 ~~\_\_\_\_\_ (N) The results of laboratory analyses, research studies, and/or field or~~  
4152 ~~site-specific studies to verify the information required in paragraphs (J) and (K) of this~~  
4153 ~~subsection;~~

- 4154  
4155 ~~\_\_\_\_\_ (O) A characterization of the confining zone(s) including a~~  
4156 ~~demonstration that it is free of transmissive faults, fractures, and micro-fractures and of~~  
4157 ~~appropriate thickness, permeability, and integrity to impede fluid (e.g., carbon dioxide, formation~~  
4158 ~~fluids) movement;~~  
4159  
4160 ~~\_\_\_\_\_ (P) The presence of potential conduits for fluid movement including~~  
4161 ~~planned injection wells and project monitoring wells associated with the proposed geologic~~  
4162 ~~sequestration project or any other projects in proximity to the predicted or modeled, final extent~~  
4163 ~~of the carbon dioxide plume and area of elevated pressure;~~  
4164  
4165 ~~\_\_\_\_\_ (Q) A description of the well construction and an assessment of the~~  
4166 ~~quality of plugs of all abandoned wells within the area of review;~~  
4167  
4168 ~~\_\_\_\_\_ (R) The distance between the injection zone and the nearest USDWs~~  
4169 ~~above and/or below the injection zone; and~~  
4170  
4171 ~~\_\_\_\_\_ (S) Any additional site-specific factors required by the Administrator.~~  
4172  
4173 ~~\_\_\_\_\_ (iii) Information submitted to support the demonstration in paragraph (a)(ii) of~~  
4174 ~~this section must meet the following criteria:~~  
4175  
4176 ~~\_\_\_\_\_ (A) All analyses and tests performed to support the demonstration must~~  
4177 ~~be accurate, reproducible, and performed in accordance with the established quality assurance~~  
4178 ~~standards;~~  
4179  
4180 ~~\_\_\_\_\_ (B) Estimation techniques must be appropriate and EPA certified test~~  
4181 ~~protocols must be used where available;~~  
4182  
4183 ~~\_\_\_\_\_ (C) Predictive models must be appropriate and tailored to the site~~  
4184 ~~conditions, composition of the carbon dioxide stream and injection and site conditions over the~~  
4185 ~~life of the geologic sequestration project;~~  
4186  
4187 ~~\_\_\_\_\_ (D) Predictive models must be calibrated using existing information~~  
4188 ~~(e.g., at Class I, Class II, or Class V experimental technology well sites) where sufficient data are~~  
4189 ~~available;~~  
4190  
4191 ~~\_\_\_\_\_ (E) Reasonably conservative values and modeling assumptions must~~  
4192 ~~be used and disclosed to the Administrator whenever values are estimated on the basis of known,~~  
4193 ~~historical information instead of site-specific measurements;~~  
4194  
4195 ~~\_\_\_\_\_ (F) An analysis must be performed to identify and assess aspects of the~~  
4196 ~~post-injection site care timeframe demonstration that contribute significantly to uncertainty. The~~  
4197 ~~owner or operator must conduct sensitivity analyses to determine the effect that significant~~  
4198 ~~uncertainty may contribute to the modeling demonstration.~~  
4199

4200 ~~\_\_\_\_\_ (G) An approved quality assurance and quality control plan must~~  
4201 ~~address all aspects of the demonstration; and,~~  
4202  
4203 ~~\_\_\_\_\_ (H) Any additional criteria required by the Administrator.~~  
4204  
4205 ~~\_\_\_\_\_ (iv) Upon cessation of injection, owners or operators of Class VI wells must~~  
4206 ~~either submit an amended post injection site care and site closure plan or demonstrate to the~~  
4207 ~~Administrator through monitoring data and modeling results that no amendment to the plan is~~  
4208 ~~needed. Any amendments to the post injection site care and site closure plan must be:~~  
4209  
4210 ~~\_\_\_\_\_ (A) Approved by the Administrator.~~  
4211  
4212 ~~\_\_\_\_\_ (B) Incorporated into the permit.~~  
4213  
4214 ~~\_\_\_\_\_ (C) Subject to the permit modification requirements of Section 4 of~~  
4215 ~~this chapter, as appropriate.~~  
4216  
4217 ~~\_\_\_\_\_ (v) The owner or operator may modify and resubmit the post injection site~~  
4218 ~~care and site closure plan for the Administrator's approval within thirty (30) days of such~~  
4219 ~~change.~~  
4220  
4221 ~~\_\_\_\_\_ (b) The owner or operator shall monitor the site following the cessation of injection~~  
4222 ~~to show the position of the carbon dioxide plume and pressure front and demonstrate that~~  
4223 ~~USDWs are not being endangered.~~  
4224  
4225 ~~\_\_\_\_\_ (i) The owner or operator shall continue to conduct monitoring as specified in~~  
4226 ~~the Administrator approved post injection site care and site closure plan until closure is certified~~  
4227 ~~by the Administrator.~~  
4228  
4229 ~~\_\_\_\_\_ (ii) The owner or operator can request and demonstrate to the satisfaction of~~  
4230 ~~the Administrator that the post injection site care and site closure plan should be revised to~~  
4231 ~~reduce the frequency of monitoring.~~  
4232  
4233 ~~\_\_\_\_\_ (iii) Prior to authorization for site closure, the owner or operator must~~  
4234 ~~demonstrate to the Administrator, based on monitoring, other site specific data, and modeling~~  
4235 ~~that is reasonably consistent with site performance, that no additional monitoring is needed to~~  
4236 ~~ensure that the geologic sequestration project does not, and is not expected to pose an~~  
4237 ~~endangerment to a USDW or otherwise threaten human health, safety, or the environment. In~~  
4238 ~~addition, the owner or operator must demonstrate, based on the best available understanding of~~  
4239 ~~the site, including monitoring data and/or modeling, that all other site closure standards and~~  
4240 ~~requirements have been met.~~  
4241  
4242 ~~\_\_\_\_\_ (iv) If such a demonstration cannot be made, the owner or operator must~~  
4243 ~~continue post injection site care.~~  
4244

4245 ~~————— (v) ——— The owner or operator must notify the Administrator, in writing, at least~~  
4246 ~~120 days before filing a request for site closure. At this time, if any changes have been made to~~  
4247 ~~the original post-injection site care and site closure plan, the owner or operator must also provide~~  
4248 ~~the revised plan. At the discretion of the Administrator, a shorter notice period may be allowed.~~

4249  
4250 ~~————— (vi) ——— Post injection site care shall be for a period of not less than ten (10) years~~  
4251 ~~after the date when all wells excluding monitoring wells have been appropriately plugged and~~  
4252 ~~abandoned, all subsurface operations and activities have ceased and all surface equipment and~~  
4253 ~~improvements have been removed or appropriately abandoned, or so long thereafter as necessary~~  
4254 ~~to obtain a completion and release certificate from the Administrator certifying that plume~~  
4255 ~~stabilization has been achieved without the use of control equipment based on a minimum of~~  
4256 ~~three (3) consecutive years of monitoring data.~~

4257  
4258 ~~————— (e) ——— After the Administrator has certified site closure, the owner or operator must plug~~  
4259 ~~monitoring wells, as determined by the Administrator, in a manner that will not allow movement~~  
4260 ~~of injection or formation fluids.~~

4261  
4262 ~~————— (d) ——— Once the Administrator has certified site closure, the owner or operator must~~  
4263 ~~submit a site closure report within ninety (90) days after completion of all closure operations.~~  
4264 ~~The report must thereafter be retained at a location designated by the Administrator for ten (10)~~  
4265 ~~years. The report must include:~~

4266  
4267 ~~————— (i) ——— Documentation of appropriate injection and monitoring well plugging as~~  
4268 ~~specified in Section 16 of this chapter and paragraph (c) of this section.~~

4269  
4270 ~~————— (ii) ——— The owner or operator must provide a copy of a survey plat that has been~~  
4271 ~~submitted to the local zoning authority designated by the Administrator.~~

4272  
4273 ~~————— (A) ——— The plat must indicate the location of the injection well(s) and~~  
4274 ~~monitoring wells relative to permanently surveyed benchmarks.~~

4275  
4276 ~~————— (B) ——— The owner or operator must also submit a copy of the plat to the~~  
4277 ~~US EPA Regional Administrator.~~

4278  
4279 ~~————— (iii) ——— Documentation of appropriate notification and information to such State,~~  
4280 ~~local and tribal authorities as have authority over drilling activities to enable such State and local~~  
4281 ~~authorities to impose appropriate conditions on subsequent drilling activities that may penetrate~~  
4282 ~~the injection and confining zone(s).~~

4283  
4284 ~~————— (iv) ——— Proof of providing notice to surface owners, mineral claimants, mineral~~  
4285 ~~owners, lessees, and other owners of record of subsurface interests as to the proposed site~~  
4286 ~~closure. Notice requirements at a minimum shall include:~~

4287  
4288 ~~————— (A) ——— The publishing of notice of the application in a newspaper of~~  
4289 ~~general circulation in each county of the proposed operation at weekly intervals for four (4)~~  
4290 ~~consecutive weeks;~~

4291  
4292 ~~\_\_\_\_\_ (B) The published notice shall provide a mechanism to request a public~~  
4293 ~~hearing;~~

4294  
4295 ~~\_\_\_\_\_ (C) A copy of the notice shall also be mailed to all surface owners,~~  
4296 ~~mineral claimants, mineral owners, lessees and other owners of record of subsurface interests~~  
4297 ~~that are located within one (1) mile of the proposed boundary of the geologic sequestration site.~~

4298  
4299 ~~\_\_\_\_\_ (v) Records reflecting the nature, composition and volume of the carbon~~  
4300 ~~dioxide stream.~~

4301  
4302 ~~\_\_\_\_\_ (e) Each owner or operator of a Class VI injection well must record a notation on the~~  
4303 ~~deed to the facility property or any other document that is normally examined during title search~~  
4304 ~~that will in perpetuity provide any potential purchaser of the property the following information:~~

4305  
4306 ~~\_\_\_\_\_ (i) The fact that land has been used to sequester carbon dioxide;~~

4307  
4308 ~~\_\_\_\_\_ (ii) The name of the State agency, local authority, and/or tribe with which the~~  
4309 ~~survey plat was filed, as well as the address of the Regional Environmental Protection Agency~~  
4310 ~~Office to which it was submitted; and~~

4311  
4312 ~~\_\_\_\_\_ (iii) The volume of fluid injected, the injection zone or zones into which it was~~  
4313 ~~injected, and the period over which injection occurred.~~

4314  
4315 ~~\_\_\_\_\_ (f) Well plugging reports, post injection site care data, including, if appropriate, data~~  
4316 ~~and information used to develop the demonstration of the post injection site care time frame, and~~  
4317 ~~the site closure report collected pursuant to requirements of subsection (d) above shall be~~  
4318 ~~retained for ten (10) years following site closure. The owner or operator must deliver the records~~  
4319 ~~to the Administrator at the conclusion of the retention period, and the records must thereafter be~~  
4320 ~~retained at a location designated by the Administrator for that purpose.~~

4321  
4322 ~~(formerly Section 11(a))~~(a) During the drilling and construction of a Class VI injection  
4323 well, the owner or operator ~~must~~ shall run appropriate logs, surveys, and tests to determine or  
4324 verify the depth, thickness, porosity, permeability, ~~and~~ lithology ~~of~~, and ~~the~~ salinity of any  
4325 formation fluids in all relevant geologic formations ~~in order~~ to ensure ~~conformance with the~~  
4326 ~~injection~~ well meets the construction requirements ~~under of~~ Section ~~9~~ 14 of this ~~e~~Chapter, and to  
4327 establish accurate baseline data against which future measurements may be compared. The  
4328 owner or operator ~~must~~ shall submit to the Administrator a descriptive report prepared by a  
4329 knowledgeable log analyst that includes an interpretation of the results of ~~such~~ the logs and tests.  
4330 At a minimum, ~~such~~ the logs and tests ~~must~~ shall include:

4331  
4332 ~~(formerly Section 11(a)(i))~~(i) Deviation checks measured during drilling on all  
4333 holes constructed by drilling a pilot hole that is subsequently enlarged by reaming or another  
4334 method. ~~Such~~ Deviation checks ~~must~~ shall be at sufficiently frequent intervals to determine the  
4335 location of the borehole and to ensure that vertical avenues for fluid movement in the form of  
4336 diverging holes are not created during drilling; ~~and~~

- 4337  
4338                   ~~(formerly Section 11(a)(ii))~~(ii)           Before and upon installation of the surface  
4339 casing:  
4340  
4341                   ~~(formerly Section 11(a)(ii)(A))~~(A)    Resistivity, spontaneous potential,  
4342 and caliper logs before the casing is installed; and  
4343  
4344                   ~~(formerly Section 11(a)(ii)(B))~~(B)    A cement bond and variable density  
4345 log, or other approved device to evaluate cement quality radially with sufficient resolution to  
4346 identify channels, voids, or other areas of missing cement, and a temperature log, after the casing  
4347 is set and cemented;
- 4348  
4349                   ~~(formerly Section 11(a)(iii))~~(iii)       Before and upon installation of the long  
4350 string casing:  
4351  
4352                   ~~(formerly Section 11(a)(iii)(A))~~(A)    Resistivity, spontaneous potential,  
4353 porosity, caliper, gamma ray, fracture finder logs, and any other logs the Administrator requires  
4354 for the given geology before the casing is installed; and  
4355  
4356                   ~~(formerly Section 11(a)(iii)(B))~~(B)    A cement bond and variable density  
4357 log, and a temperature log after the casing is set and cemented;
- 4358  
4359                   ~~(formerly Section 11(a)(iv))~~(iv)       Test(s) designed to demonstrate the internal  
4360 and external mechanical integrity of injection wells, which may include:  
4361  
4362                   ~~(formerly Section 11(a)(iv)(A))~~(A)    A pressure test with liquid or gas;  
4363  
4364                   ~~(formerly Section 11(a)(iv)(B))~~(B)    A tracer survey, such as oxygen-  
4365 activation logging;  
4366  
4367                   ~~(formerly Section 11(a)(iv)(C))~~(C)    A temperature or noise log; and  
4368  
4369                   ~~(formerly Section 11(a)(iv)(D))~~(D)    A casing inspection log; and  
4370  
4371                   ~~(formerly Section 11(a)(v))~~(v)       Any alternative methods that provide  
4372 equivalent or better information and that are required ~~of, and~~/or approved by the Administrator.  
4373  
4374                   ~~(formerly Section 11(b))~~(b)       The owner or operator ~~must~~ shall take whole cores or  
4375 sidewall cores of the injection zone and confining system, ~~and~~ as well as formation fluid samples  
4376 from the injection zone(s);
- 4377  
4378                   ~~(formerly Section 11(b))~~(i)       The owner or operator shall ~~and~~ submit to the  
4379 Administrator a detailed report prepared by a log analyst that includes:  
4380  
4381                   ~~(formerly Section 11(b)(i))~~(A)       Well log analyses (including well logs);  
4382

4383 ~~(formerly Section 11(b)(ii))(B)~~ Core analyses; and

4384  
4385 ~~(formerly Section 11(b)(iii))(C)~~ Formation fluid sample information.

4386  
4387 ~~(formerly Section 11(b)(iv))(ii)~~ The Administrator may accept data from cores and  
4388 fluid samples from nearby wells if the owner or operator can demonstrate that such data are  
4389 representative of conditions in the wellbore.

4390  
4391 ~~(formerly Section 11(e))(c)~~ The owner or operator ~~must~~ shall record the formation fluid  
4392 temperature, formation fluid pH and conductivity, reservoir pressure, and static fluid level of the  
4393 injection zone(s).

4394  
4395 ~~(formerly Section 11(d))(d)~~ The owner or operator ~~must~~ shall determine fracture  
4396 pressures of the injection and confining zones and verify hydrogeologic and geo-mechanical  
4397 characteristics of the injection zone by conducting a pressure fall-off test, any other ~~information~~  
4398 test requested by the Administrator; ~~and;~~

4399  
4400 ~~(formerly Section 11(d)(i))(i)~~ A pump test; or

4401  
4402 ~~(formerly Section 11(d)(ii))(ii)~~ Injectivity tests.

4403  
4404 ~~(formerly Section 11(e))(e)~~ The owner or operator ~~must~~ shall provide the Administrator  
4405 with the opportunity to witness all logging and testing by this section. The owner or operator  
4406 ~~must~~ shall submit a schedule of such activities to the Administrator prior to conducting the first  
4407 test and shall notify the Administrator of any changes to the schedule thirty (30) days prior to the  
4408 next scheduled test.

4409  
4410 **Section 18. ~~Emergency and Remedial Response.~~ Injection Well Operating**  
4411 **Requirements.**

4412  
4413 ~~(a) — As part of the permit application, the owner or operator must provide the~~  
4414 ~~Administrator with an emergency and remedial response plan that describes actions to be taken~~  
4415 ~~to address movement of the injectate or formation fluids that may cause an endangerment to a~~  
4416 ~~USDW or threaten human health, safety, or the environment during construction, operation,~~  
4417 ~~closure, and post-closure periods.~~

4418  
4419 ~~(i) — The emergency and remedial response plan must be reviewed and~~  
4420 ~~updated, as necessary, on the same schedule as the update to the area of review delineation.~~

4421  
4422 ~~(ii) — Any amendments to the emergency and remedial response plan must be~~  
4423 ~~approved by the Administrator, must be incorporated into the permit, and are subject to the~~  
4424 ~~permit modification requirements of Section 4 of this chapter, as appropriate.~~

4425  
4426 ~~(A) — Amended plans or demonstrations shall be submitted to the~~  
4427 ~~Administrator as follows:~~

4428

4429 (I) ~~Within one (1) year of an area of review reevaluation;~~

4430  
4431 (II) ~~Following any significant changes to the facility, such as~~  
4432 ~~addition of injection or monitoring wells, on a schedule determined by the Administrator; or~~

4433  
4434 (III) ~~When required by the Administrator.~~

4435  
4436 (b) ~~If monitoring data, or other evidence obtained by the owner or operator indicate~~  
4437 ~~that the injected carbon dioxide stream, displaced formation fluids or associated pressure front~~  
4438 ~~may endanger a USDW or threatens human health, safety, or the environment, the owner or~~  
4439 ~~operator must:~~

4440  
4441 (i) ~~Immediately cease injection;~~

4442  
4443 (ii) ~~Take all steps reasonably necessary to identify and characterize any~~  
4444 ~~release;~~

4445  
4446 (iii) ~~Notify the Administrator within twenty-four (24) hours.~~

4447  
4448 (iv) ~~In addition to paragraphs (i-iii) of this subsection, if an excursion is~~  
4449 ~~discovered, the owner or operator shall provide verbal notice to the Department within twenty-~~  
4450 ~~four (24) hours, followed by written notice to all surface owners, mineral claimants, mineral~~  
4451 ~~owners, lessees and other owners of record of subsurface interests within thirty (30) days of~~  
4452 ~~when the excursion is discovered; and~~

4453  
4454 (v) ~~Implement the emergency and remedial response plan approved by the~~  
4455 ~~Administrator.~~

4456  
4457 (e) ~~The Administrator may allow the operator to resume injection prior to~~  
4458 ~~remediation if the owner or operator demonstrates that the injection operation will not endanger~~  
4459 ~~USDWs or otherwise threaten human health, safety, or the environment.~~

4460  
4461 ~~(formerly Section 12(a))~~(a) The owner or operator ~~must~~ shall ensure that injection  
4462 pressure does not exceed ninety percent (90%) ~~percent~~ of the fracture pressure of the injection  
4463 zone(s) ~~so as~~ to ensure that the injection does not initiate new fractures or propagate existing  
4464 fractures in the injection zone(s).

4465  
4466 ~~(formerly Section 12(a)(i))~~(i) In no case may injection pressure cause movement  
4467 of injection or formation fluids in a manner that endangers a USDW, or otherwise threatens  
4468 human health, safety, or the environment.

4469  
4470 ~~(formerly Section 12(a)(ii))~~(ii) In no case may injection pressure initiate  
4471 fractures in the confining zone(s) or cause the movement of injectate or formation fluids that  
4472 endangers a USDW or otherwise threatens human health, safety, or the environment.

4473

4474 ~~(formerly Section 12(b))~~(b) Injection of the carbon dioxide stream between the  
4475 outermost casing protecting USDWs and the wellbore is prohibited.

4476  
4477 ~~(formerly Section 12(e))~~(c) The owner or operator ~~must~~ shall fill the annulus between  
4478 the tubing and the long string casing with a non-corrosive fluid approved by the Administrator.  
4479 The owner or operator ~~must~~ shall maintain on the annulus a pressure that exceeds the operating  
4480 injection pressure, unless the Administrator determines that such requirement might harm the  
4481 integrity of the well or endanger USDWs.

4482  
4483 ~~(formerly Section 12(d))~~(d) Other than during periods of well workover or maintenance  
4484 approved by the Administrator in which the sealed tubing-casing annulus is, by necessity,  
4485 disassembled for maintenance or corrective procedures, the owner or operator ~~must~~ shall  
4486 maintain mechanical integrity of the injection well at all times.

4487  
4488 ~~(formerly Section 12(e))~~(e) The owner or operator ~~must~~ shall install and use continuous  
4489 recording devices to monitor:

4490  
4491 ~~(formerly Section 12(e)(i))~~(i) Injection pressure; and

4492  
4493 ~~(formerly Section 12(e)(ii))~~(ii) Injection Rate, volume, and temperature of  
4494 the carbon dioxide stream.

4495  
4496 ~~(formerly Section 12(f))~~(f) The owner or operator ~~must~~ shall install and use continuous  
4497 recording devices to monitor the pressure on the annulus between the tubing and the long string  
4498 casing and annulus fluid volume.

4499  
4500 ~~(formerly Section 12(g))~~(g) The owner or operator ~~must~~ shall install, test, and use  
4501 alarms and automatic surface shut-off systems; ~~or,~~ at the discretion of the Administrator, use  
4502 down-hole shut-off systems (e.g., automatic shut-off, check valves); ~~or~~ other mechanical devices  
4503 that provide equivalent protection, designed to alert the operator and shut-in the well when  
4504 operating parameters such as injection rate, injection pressure, or other parameters approved by  
4505 the Administrator diverge beyond ranges ~~and/or~~ gradients specified in the permit.

4506  
4507 ~~(formerly Section 12(h))~~(h) If an automatic shutdown is triggered or a loss of  
4508 mechanical integrity is discovered, the owner or operator ~~must~~ shall immediately investigate and  
4509 identify as expeditiously as possible the cause. If, upon such investigation, the well appears to be  
4510 lacking mechanical integrity, or if monitoring required under paragraphs (e), (f), and (g) of this  
4511 ~~s~~Section otherwise indicates that the well may be lacking mechanical integrity, the owner or  
4512 operator ~~must~~ shall:

4513  
4514 ~~(formerly Section 12(h)(i))~~(i) Immediately cease injection;

4515  
4516 ~~(formerly Section 12(h)(ii))~~(ii) Take all steps reasonably necessary to  
4517 determine whether there may have been a release of the injected carbon dioxide stream or  
4518 formation fluids into any unauthorized zone;

4519

4520 ~~(formerly Section 12(h)(iii))(iii)~~ Notify the Administrator within twenty-four  
4521 (24) hours;

4522 ~~(formerly Section 12(h)(iv))(iv)~~ Restore and demonstrate mechanical  
4523 integrity to the satisfaction of the Administrator as soon as practicable and prior to resuming  
4524 injection; and

4525 ~~(formerly Section 12(h)(v))(v)~~ Notify the Administrator when injection can  
4526 be expected to resume.

4527  
4528  
4529  
4530 **Section 19. ~~Financial Responsibility.~~ Mechanical Integrity.**

4531  
4532 ~~(a) — Financial responsibility requirements are to ensure that owners or operators have~~  
4533 ~~the financial resources to carry out activities related to closing and remediating geologic~~  
4534 ~~sequestration sites if needed so they do not endanger the environment or USDWs.~~

4535  
4536 ~~(b) — Owners or operators of Class VI wells must demonstrate and maintain financial~~  
4537 ~~responsibility for all applicable phases of the geologic sequestration project including complete~~  
4538 ~~site reclamation in the event of default. The phases of a geologic sequestration project are as~~  
4539 ~~follows:~~

4540  
4541 ~~(i) — Permitting/Characterization.~~

4542  
4543 ~~(ii) — Monitoring and testing, including the requirements of Section 14 of this~~  
4544 ~~chapter.~~

4545  
4546 ~~(iii) — Operations (injection and permanent well closure activities), including the~~  
4547 ~~requirements of Section 16 of this chapter.~~

4548  
4549 ~~(iv) — Post injection site care (“plume stabilization” — monitoring until certified~~  
4550 ~~by the Administrator; above ground reclamation completed), including the requirements of~~  
4551 ~~Section 17 of this chapter.~~

4552  
4553 ~~(v) — Emergency and remedial response (that meets the requirements of Section~~  
4554 ~~18 of this chapter).~~

4555  
4556 ~~(e) — The owner or operator must submit a detailed written estimate, at the time of~~  
4557 ~~permit application and updated annually in accordance with paragraph (j)(iii) below, in current~~  
4558 ~~dollars, that includes the cost of performing corrective action on wells in the area of review that~~  
4559 ~~meets the requirements of Section 8 of this chapter; plugging the injection well(s) that meets the~~  
4560 ~~requirements of Section 16 of this chapter; post injection site care and site closure that meets the~~  
4561 ~~requirements of Section 17 of this chapter; monitoring activities that meets the requirements of~~  
4562 ~~Section 14 of this chapter; and emergency and remedial response that meets the requirements of~~  
4563 ~~Section 18 of this chapter.~~

4564  
4565 ~~(i) — The financial assurance cost estimate for the various phases of the~~

4566 ~~sequestration project shall consider the following events:~~

4567  
4568 (A) ~~Contamination of underground sources of water including drinking~~  
4569 ~~water supplies.~~

4570  
4571 (B) ~~Mineral rights infringement.~~

4572  
4573 (C) ~~Single large volume release of carbon dioxide that impacts human~~  
4574 ~~health and safety and/or causes ecological damage.~~

4575  
4576 (D) ~~Low level leakage of carbon dioxide to the surface that impacts~~  
4577 ~~human health and safety and/or causes ecological damage.~~

4578  
4579 (E) ~~Storage rights infringement.~~

4580  
4581 (F) ~~Property and infrastructure damage including changes to surface~~  
4582 ~~topography and structures.~~

4583  
4584 (G) ~~Entrained contaminant releases (non-CO2).~~

4585  
4586 (H) ~~Accidents/unplanned events.~~

4587  
4588 (I) ~~Well capping and permitted abandonment.~~

4589  
4590 \_\_\_\_\_

4591  
4592 (ii) ~~The Risk Activity matrix in Appendix A of this chapter shall be~~  
4593 ~~considered during the risk assessment process.~~

4594  
4595 (iii) ~~The cost estimate shall be based upon a multi-disciplinary analytical~~  
4596 ~~framework such as Monte Carlo or other commonly accepted stochastic modeling tools.~~

4597  
4598 (A) ~~Cost curves shall combine risk probabilities, event outcomes, and~~  
4599 ~~damages assessment to calculate expected losses under a series of events.~~

4600  
4601 (B) ~~For all cases of potential damages, the probability distributions~~  
4602 ~~should be identified for 50 percent, 95 percent, and 99 percent probabilities of occurrence.~~

4603  
4604 (d) ~~The owner or operator must also submit a proposed cost estimate for~~  
4605 ~~measurement, monitoring, and verification of plume stabilization following post-closure~~  
4606 ~~certification and release of all other financial assurance instruments.~~

4607  
4608 (e) ~~The cost estimate must be performed for each phase separately and must be based~~  
4609 ~~on the costs to the regulatory agency of hiring a third party to perform the required activities. A~~  
4610 ~~third party is a party who is not within the corporate structure of the owner or operator.~~

4611  
4612 (f) ~~The owner or operator must demonstrate and maintain financial responsibility as~~

4613 ~~determined by the Administrator that meets the conditions of this section.~~

4614

4615 ~~(g) — The financial responsibility instrument(s) used shall be from the following list of~~  
4616 ~~qualifying instruments:~~

4617

~~(i) — Trust Funds;~~

4619

~~(ii) — Surety Bonds;~~

4620

4621

~~(iii) — Letter of Credit;~~

4622

4623

~~(iv) — Insurance.~~

4624

4625

4626 ~~(A) — Any insurance instruments submitted for financial assurance~~  
4627 ~~purposes shall include State of Wyoming as an additional insured.~~

4628

4629 ~~(B) — Inclusion of the State of Wyoming as an additional insured shall~~  
4630 ~~not be deemed a waiver of sovereign immunity.~~

4631

~~(v) — Self insurance (i.e., Financial Test and Corporate Guarantee);~~

4632

4633

~~(vi) — Escrow account;~~

4634

~~(vii) — Any other instrument(s) satisfactory to the Administrator.~~

4635

4636

4637

4638 ~~(h) — The qualifying instrument(s) must be sufficient to cover the cost of the estimate~~  
4639 ~~required in subsection (d) of this section.~~

4640

4641 ~~(i) — The qualifying financial responsibility instrument(s) must comprise protective~~  
4642 ~~conditions of coverage that include at a minimum cancellation, renewal, continuation provisions,~~  
4643 ~~specifications on when the provider becomes liable following a notice of cancellation, and~~  
4644 ~~requirements for the provider to meet a minimum rating, minimum capitalization, and the ability~~  
4645 ~~to pass the bond rating test when applicable.~~

4646

4647 ~~(i) — Cancellation — An owner or operator must provide that their financial~~  
4648 ~~mechanism may not cancel, terminate or fail to renew except for failure to pay such financial~~  
4649 ~~instrument. If there is a failure to pay the financial instrument, the financial institution may elect~~  
4650 ~~to cancel, terminate, or fail to renew the instrument by sending notice by certified mail to the~~  
4651 ~~owner or operator and the Administrator. The cancellation must not be final for 120 days after~~  
4652 ~~receipt of cancellation notice. The owner or operator must provide an alternate financial~~  
4653 ~~responsibility demonstration within sixty (60) days of notice of cancellation, and if an alternate~~  
4654 ~~financial responsibility demonstration is not acceptable (or possible), any funds from the~~  
4655 ~~instrument being cancelled must be released within sixty (60) days of notification by the~~  
4656 ~~Administrator.~~

4657

4658 ~~(ii) — Renewal — Owners or operators must renew all financial instruments, if an~~  
4659 ~~instrument expires, for the entire term of the geologic sequestration project. The instrument may~~

4660 ~~be automatically renewed as long as, at a minimum, the owner or operator has the option of~~  
4661 ~~renewal at the face amount of the expiring instrument.~~

4662  
4663 (iii) ~~Continuation Cancellation, termination, or failure to renew may not~~  
4664 ~~occur and the financial instrument shall remain in full force and effect in the event that on or~~  
4665 ~~before the date of expiration:~~

4666  
4667 (A) ~~The Administrator deems the facility abandoned.~~

4668  
4669 (B) ~~The permit is terminated, revoked, or a new permit is denied.~~

4670  
4671 (C) ~~Closure is ordered by the Administrator, a U.S. district court, or~~  
4672 ~~other court of competent jurisdiction.~~

4673  
4674 (D) ~~The owner or operator is named as debtor in a voluntary or~~  
4675 ~~involuntary proceeding under Title 11 (Bankruptcy), U.S. Code.~~

4676  
4677 (E) ~~The amount due is paid.~~

4678  
4679 (j) ~~The qualifying financial responsibility instrument(s) must be approved by the~~  
4680 ~~Administrator. The Administrator shall also approve the use and length of pay in periods for~~  
4681 ~~trust funds and escrow accounts.~~

4682  
4683 (i) ~~The Administrator shall consider and approve the financial responsibility~~  
4684 ~~demonstration for all the phases of the geologic sequestration project prior to issuing a Class VI~~  
4685 ~~permit.~~

4686  
4687 (ii) ~~The Administrator may find that the financial responsibility demonstration~~  
4688 ~~is unsatisfactory for any reason, as long as that reason is not arbitrary or capricious. The~~  
4689 ~~Administrator may exercise discretion in negotiating a satisfactory financial responsibility~~  
4690 ~~demonstration or to deny a demonstration.~~

4691  
4692 (iii) ~~The owner or operator must provide any updated information related to~~  
4693 ~~their financial responsibility instrument(s) on an annual basis and if there are any changes, the~~  
4694 ~~Administrator must evaluate the financial responsibility demonstration to confirm that the~~  
4695 ~~instrument(s) used remain adequate for use. The owner or operator must maintain financial~~  
4696 ~~responsibility requirements regardless of the status of the Administrator's review of the financial~~  
4697 ~~responsibility demonstration.~~

4698  
4699 (iv) ~~The owner or operator must provide an adjustment of the cost estimate to~~  
4700 ~~the Administrator within sixty (60) days of notification by the Administrator, if the~~  
4701 ~~Administrator determines during the annual evaluation of the qualifying financial responsibility~~  
4702 ~~instrument(s) that the most recent demonstration is no longer adequate to cover the cost of~~  
4703 ~~corrective action (as required by Section 8 of this chapter), injection well plugging (as required~~  
4704 ~~by Section 16 of this chapter), post-injection site care and site closure (as required by Section 17~~

4705 of this chapter), and emergency and remedial response (as required by Section 18 of this  
4706 chapter).

4707  
4708 (v) — During the active life of the geologic sequestration project, the owner or  
4709 operator must adjust the cost estimate for inflation within sixty (60) days prior to the anniversary  
4710 date of the establishment of the financial instrument(s) used to comply with paragraph (g) of this  
4711 section and provide this adjustment to the Administrator. The owner or operator must also  
4712 provide to the Administrator written updates of adjustments to the cost estimate within sixty (60)  
4713 days of any amendments to the area of review and corrective action plan (Section 8 of this  
4714 chapter), the injection well plugging plan (Section 16 of this chapter), the post injection site care  
4715 and site closure plan (Section 17 of this chapter), the emergency and remedial response plan  
4716 (Section 18 of this chapter), and mitigation or reclamation costs that State may incur as a result  
4717 of any default by the permit holder.

4718  
4719 (vi) — The Administrator must approve any decrease or increase to the initial  
4720 cost estimate. During the active life of the geologic sequestration project, the owner or operator  
4721 must revise the cost estimate no later than sixty (60) days after the Administrator has approved  
4722 the request to modify the area of review and corrective action plan (Section 8 of this chapter), the  
4723 injection well plugging plan (Section 16 of this chapter), the post injection site care and site  
4724 closure plan (Section 17 of this chapter), and the emergency and response plan (Section 18 of  
4725 this chapter), if the change in the plan increases the cost. If the change to the plans decreases the  
4726 cost, any withdrawal of funds must be approved by the Administrator. Any decrease to the value  
4727 of the financial assurance instrument must first be approved by the Administrator. The revised  
4728 cost estimate must be adjusted for inflation as specified in paragraph (k)(v) of this section.

4729  
4730 (vii) — Whenever the current cost estimate increases to an amount greater than the  
4731 face amount of a financial instrument currently in use, the owner or operator, within sixty (60)  
4732 days after the increase, must either cause the face amount to be increased to an amount at least  
4733 equal to the current cost estimate and submit evidence of such increase to the Administrator, or  
4734 obtain other financial responsibility instruments to cover the increase. Whenever the current cost  
4735 estimate decreases, the face amount of the financial assurance instrument may be reduced to the  
4736 amount of the current cost estimate only after the owner or operator has received written  
4737 approval from the Administrator.

4738  
4739 (k) — The owner or operator may demonstrate financial responsibility by using one (1)  
4740 or multiple qualifying financial instruments for specific phases of the geologic sequestration  
4741 project.

4742  
4743 (i) — In the event that the owner or operator combines more than one (1)  
4744 instrument for a specific geologic sequestration phase (e.g., well plugging), such combination  
4745 must be limited to instruments that are not based on financial strength or performance (i.e., self-  
4746 insurance or performance bond). For example trust funds, surety bonds guaranteeing payment  
4747 into a trust fund, letters of credit, escrow account, and insurance.

4748  
4749 (ii) — When using a third party instrument to demonstrate financial  
4750 responsibility, the owner or operator must provide proof that the third party providers either have

4751 ~~passed financial strength requirements based on credit ratings; or has met a minimum rating,~~  
4752 ~~minimum capitalization, and ability to pass the bond rating test when applicable.~~

4753  
4754 (iii) ~~—An owner or operator using certain types of third-party instruments must~~  
4755 ~~establish a standby trust to enable the State of Wyoming to be party to the financial responsibility~~  
4756 ~~agreement without the State of Wyoming being the beneficiary of any funds. The standby trust~~  
4757 ~~fund must be used along with other financial responsibility instruments (e.g., surety bonds,~~  
4758 ~~letters of credit, or escrow accounts) to provide a location to place funds if needed.~~

4759  
4760 (iv) ~~—An owner or operator may deposit money into an escrow account to cover~~  
4761 ~~financial responsibility requirements; this account must segregate funds sufficient to cover~~  
4762 ~~estimated costs for Class VI (geologic sequestration) financial responsibility from other accounts~~  
4763 ~~and uses.~~

4764  
4765 (v) ~~—An owner or operator or its guarantor may use self insurance to~~  
4766 ~~demonstrate financial responsibility for certain phases of geologic sequestration projects. In~~  
4767 ~~order to satisfy this requirement the owner or operator must meet a tangible net worth of an~~  
4768 ~~amount approved by the Administrator, have a net working capital and tangible net worth each at~~  
4769 ~~least six times the sum of the current well plugging, post injection site care and site closure cost,~~  
4770 ~~have assets located in the United States amounting to at least 90 percent of total assets or at least~~  
4771 ~~six (6) times the sum of the current well plugging, post injection site care and site closure cost,~~  
4772 ~~and must submit a report of its bond rating and financial information annually. In addition the~~  
4773 ~~owner or operator must either: have a bond rating test of AAA, AA, A, or BBB as issued by~~  
4774 ~~Standard & Poor's or Aaa, Aa, A, or Baa as issued by Moody's; or meet all of the following five~~  
4775 ~~financial ratio thresholds: a ratio of total liabilities to net worth less than 2.0; a ratio of current~~  
4776 ~~assets to current liabilities greater than 1.5; a ratio of the sum of net income plus depreciation,~~  
4777 ~~depletion, and amortization to total liabilities greater than 0.1; a ratio of current assets minus~~  
4778 ~~current liabilities to total assets greater than 0.1; and a net profit (revenues minus expenses)~~  
4779 ~~greater than 0.~~

4780  
4781 (vi) ~~—An owner or operator who is not able to meet corporate financial test~~  
4782 ~~criteria may arrange a corporate guarantee by demonstrating that its corporate parent meets the~~  
4783 ~~financial test requirements on its behalf. The parent's demonstration that it meets the financial~~  
4784 ~~test requirement is insufficient if it has not also guaranteed to fulfill the obligations for the owner~~  
4785 ~~or operator.~~

4786  
4787 (vii) ~~—An owner or operator may obtain an insurance policy to cover the~~  
4788 ~~estimated costs of geologic sequestration activities requiring financial responsibility. This~~  
4789 ~~insurance policy must be obtained from a third party provider.~~

4790  
4791 (1) ~~—The owner or operator must maintain financial responsibility and resources until~~  
4792 ~~the administrator receives and approves the completed post injection site care and site closure~~  
4793 ~~plan and the administrator approves site closure.~~

4794

4795 ~~(m) — The owner or operator must notify the Administrator by certified mail of adverse~~  
4796 ~~financial conditions such as bankruptcy that may affect the ability to carry out injection well-~~  
4797 ~~plugging and post-injection site care and site closure.~~

4798  
4799 ~~(i) — In the event that the owner or operator or the third party provider of a~~  
4800 ~~financial responsibility instrument is going through a bankruptcy, the owner or operator must~~  
4801 ~~notify the Administrator by certified mail of the commencement of a voluntary or involuntary~~  
4802 ~~proceeding under Title 11 (Bankruptcy), U.S. Code, naming the owner or operator as debtor,~~  
4803 ~~within ten (10) days after commencement of the proceeding.~~

4804  
4805 ~~(ii) — A guarantor of a corporate guarantee must make such a notification to the~~  
4806 ~~Administrator if he/she is named as debtor, as required under the terms of the corporate~~  
4807 ~~guarantee.~~

4808  
4809 ~~(iii) — An owner or operator who fulfills the requirements of paragraph (g) of this~~  
4810 ~~section by obtaining a trust fund, surety bond, letter of credit, escrow account, or insurance~~  
4811 ~~policy will be deemed to be without the required financial assurance in the event of bankruptcy~~  
4812 ~~of the trustee or issuing institution, or a suspension or revocation of the authority of the trustee~~  
4813 ~~institution to act as trustee of the institution issuing the trust fund, surety bond, letter of credit,~~  
4814 ~~escrow account, or insurance policy. The owner or operator must establish other financial~~  
4815 ~~assurance within sixty (60) days after such an event.~~

4816  
4817 ~~(n) — The owner or operator may be released from a financial instrument in the~~  
4818 ~~following circumstances:~~

4819  
4820 ~~(i) — The owner or operator has completed the phase of the geologic~~  
4821 ~~sequestration project for which the financial instrument was required and has fulfilled all its~~  
4822 ~~financial obligations as determined by the Administrator, including obtaining financial~~  
4823 ~~responsibility for the next phase of the geologic sequestration project, if required.~~

4824  
4825 ~~(ii) — The owner or operator has submitted a replacement financial instrument~~  
4826 ~~and received written approval from the Administrator accepting the new financial instrument and~~  
4827 ~~releasing the owner or operator from the previous financial instrument.~~

4828  
4829 ~~(iii) — The owner or operator has submitted a revised cost estimate for the~~  
4830 ~~remaining phases of the geologic sequestration project. The revised cost estimate may~~  
4831 ~~demonstrate that a partial release of the financial instrument is warranted and can still provide~~  
4832 ~~adequate financial assurance for the remainder of the project. Partial release of the financial~~  
4833 ~~instrument is at the discretion of the Administrator.~~

4834  
4835 ~~(o) — Following the release of all financial assurance and receipt of a site closure~~  
4836 ~~certificate, the Administrator must approve the cost estimate prepared for the post-closure~~  
4837 ~~measurement, monitoring and verification of a geologic sequestration site. The cost estimate~~  
4838 ~~shall only be provided after plume stabilization and all remediation work has been completed.~~

4839  
4840 ~~(formerly Section 13(a))~~(a) A Class VI well has mechanical integrity if:

4841  
4842 ~~(formerly Section 13(a)(i))~~(i) There is no significant leak in the casing, tubing, or  
4843 packer; and

4844  
4845 ~~(formerly Section 13(a)(ii))~~(ii) There is no significant fluid movement into  
4846 a USDW through channels adjacent to the injection wellbore.

4847  
4848 ~~(formerly Section 13(b))~~(b) To evaluate the absence of significant leaks under  
4849 subparagraph (a)(i) of this ~~s~~Section, owners or operators ~~must~~ shall, following an initial annulus  
4850 pressure test, continuously monitor injection pressure, rate, injected volumes, and pressure on the  
4851 annulus between tubing, ~~and~~ long string casing, and annulus fluid volume as specified in Section  
4852 ~~12 18~~(e) ~~and~~ (f) of this ~~e~~Chapter;

4853  
4854 ~~(formerly Section 13(e))~~(c) At least once per year, the owner or operator ~~must~~ shall use  
4855 one (1) of the following methods to determine the absence of significant fluid movement under  
4856 subparagraph (a)(ii) of this ~~s~~Section:

4857  
4858 ~~(formerly Section 13(e)(i))~~(i) An approved tracer survey such as an oxygen-  
4859 activation log; or

4860  
4861 ~~(formerly Section 13(e)(ii))~~(ii) A temperature or noise log.

4862  
4863 ~~(formerly Section 13(d))~~(d) If required by the Administrator, at a frequency specified in  
4864 the testing and monitoring plan required in Section ~~14 20~~ of this ~~e~~Chapter, the owner or operator  
4865 ~~must~~ shall run a casing inspection log to determine the presence or absence of corrosion in the  
4866 long-string casing.

4867  
4868 ~~(formerly Section 13(e))~~(e) The Administrator may require any other test to evaluate  
4869 mechanical integrity under ~~paragraph (a)(i) or (a)(ii) of this s~~Section. ~~Also, t~~The Administrator  
4870 may allow the use of a test to demonstrate mechanical integrity other than those listed ~~above, in~~  
4871 paragraph (c) of this Section with the written approval of the US EPA Administrator. To obtain  
4872 approval, the Administrator ~~must~~ shall submit a written request to the US EPA Administrator  
4873 that ~~must~~ shall set forth the proposed test and all technical data supporting its use.

4874  
4875 ~~(formerly Section 13(f))~~(f) In conducting and evaluating the tests enumerated in this  
4876 section or others to be allowed by the Administrator, the owner or operator and the Administrator  
4877 ~~must~~ shall apply methods and standards generally accepted in the industry.

4878  
4879 ~~(formerly Section 13(f)(i))~~(i) When the owner or operator reports the results of  
4880 mechanical integrity tests to the Administrator, ~~he/she~~ the owner or operator shall include a  
4881 description of the test(s) and the method(s) used.

4882  
4883 ~~(formerly Section 13(f)(ii))~~(ii) In making ~~his/her~~ an evaluation, the  
4884 Administrator ~~must~~ shall review monitoring and other test data submitted since the previous  
4885 evaluation.

4886

4887 ~~(formerly Section 13(g))(g)~~ The Administrator may require additional or alternative  
4888 tests if the results presented by the owner or operator under paragraph (e) of this ~~s~~Section are not  
4889 satisfactory to the Administrator to demonstrate that there is no significant leak in the casing,  
4890 tubing or packer; ~~or~~ and that there is no significant movement of fluid into or between USDWs  
4891 resulting from the injection activity ~~as stated in paragraphs (a)(i) and (a)(ii) of this section.~~

4892

4893 **Section 20. ~~Public Participation, Public Notice and Public Hearing Requirements.~~**  
4894 **Testing and Monitoring Requirements.**

4895

4896 ~~(a) — The Administrator shall give public notice if a draft permit has been prepared or a~~  
4897 ~~hearing has been scheduled.~~

4898

4899 ~~(b) — Public notice of the preparation of a draft permit shall allow at least sixty (60)~~  
4900 ~~days for public comment. Public notice of a public hearing shall be given at least thirty (30) days~~  
4901 ~~before the hearing. Public notice of the hearing may be given at the same time as public notice of~~  
4902 ~~the draft permit and the two notices may be combined.~~

4903

4904 ~~(c) — Public notice shall be given by:~~

4905

4906 ~~(i) — Mailing a copy of the notice, a copy of the fact sheet, the permit~~  
4907 ~~application (if any) and the draft permit (if any) to the following persons:~~

4908

4909 ~~(A) — The applicant, by certified or registered mail;~~

4910

4911 ~~(B) — The U.S. Environmental Protection Agency, Region 8 Drinking~~  
4912 ~~Water Program;~~

4913

4914 ~~(C) — The U.S. Environmental Protection Agency, Underground~~  
4915 ~~Injection Control Program;~~

4916

4917 ~~(D) — Wyoming Game and Fish Department;~~

4918

4919 ~~(E) — Wyoming State Engineer;~~

4920

4921 ~~(F) — State Historical Preservation Officer;~~

4922

4923 ~~(G) — Wyoming Oil and Gas Conservation Commission;~~

4924

4925 ~~(H) — Wyoming Department of Environmental Quality, Land Quality~~

4926 ~~Division~~

4927 ~~(I) — Wyoming State Geological Survey;~~

4928

4929 ~~(J) — Wyoming Water Development Office;~~

4930

4931 ~~(K) — Wyoming Department of Environmental Quality, Air Quality~~

4932 ~~Division;~~

- 4933  
4934                   (L)——Wyoming Department of Environmental Quality, Solid and  
4935 Hazardous Waste Division; and  
4936  
4937                   (M)——U.S. Army Corps of Engineers;  
4938  
4939                   (N)——Persons on the mailing list developed by the Department, including  
4940 those who request in writing to be on the list and by soliciting participants in public hearings in  
4941 that area for their interest in being included on “area” mailing lists; and  
4942  
4943                   (O)——Any unit of local government having jurisdiction over the area  
4944 where the facility is proposed to be located.  
4945  
4946                   (ii)——Publication of the notice in a newspaper of general circulation in the  
4947 location of the facility or operation; and  
4948  
4949                   (iii)——At the discretion of the Administrator, any other method reasonably  
4950 expected to give actual notice of the action in question to the persons potentially affected by it,  
4951 including press releases or any other forum or medium to elicit public participation.  
4952  
4953                   (d)——All public notices issued under this chapter shall contain the following minimum  
4954 information:  
4955  
4956                   (i)——Name and address of the Department;  
4957  
4958                   (ii)——Name and address of permittee or permit applicant, and, if different, of the  
4959 facility or activity regulated by the permit;  
4960  
4961                   (iii)——A brief description of the business conducted at the facility or activity  
4962 described in the permit application or the draft permit;  
4963  
4964                   (iv)——The type and quantity of wastes, fluids, or pollutants that are proposed to  
4965 be or are being treated, stored, disposed of, injected, emitted, or discharged.  
4966  
4967                   (v)——A brief summary of the basis for the draft permit conditions including  
4968 references to applicable statutory or regulatory provisions;  
4969  
4970                   (vi)——Reasons why any requested variances or alternatives to required standards  
4971 do or do not appear justified;  
4972  
4973                   (vii)——Name, address and telephone number of a person from whom interested  
4974 persons may obtain further information, including copies of the draft permit, as the case may be,  
4975 statement of basis or fact sheet, and the application;  
4976  
4977                   (viii)——A brief description of comment procedures including;  
4978

- 4979                                   (A) ~~Procedures to request a hearing;~~  
4980  
4981                                   (B) ~~The beginning and ending dates of the comment period;~~  
4982  
4983                                   (C) ~~The address where comments will be received; and~~  
4984  
4985                                   (D) ~~Other procedures that the public may use to participate in the final~~  
4986 ~~permit decision; and~~  
4987  
4988                                   (ix) ~~Any additional information considered necessary and proper.~~  
4989  
4990                   (e) ~~In addition to the information required in paragraph (d) of this section, any notice~~  
4991 ~~for public hearing shall contain the following:~~  
4992  
4993                                   (i) ~~Reference to the date of previous public notices relating to the permit;~~  
4994  
4995                                   (ii) ~~Date, time and place of hearing; and~~  
4996  
4997                                   (iii) ~~A brief description of the nature and purpose of the hearing, including~~  
4998 ~~applicable rules and procedures.~~  
4999  
5000                   (f) ~~The Department shall provide an opportunity for the applicant, permittee, or any~~  
5001 ~~interested person to submit written comments regarding any aspect of a permit or to request a~~  
5002 ~~public hearing.~~  
5003  
5004                   (g) ~~During the public comment period, any interested person may submit written~~  
5005 ~~comments on the draft permit and may request a public hearing. Requests for public hearings~~  
5006 ~~must be made in writing to the Administrator and shall state the reasons for the request.~~  
5007  
5008                   (h) ~~The Administrator shall hold a hearing whenever the Administrator finds, on the~~  
5009 ~~basis of requests, a significant degree of public interest in a draft permit. The Administrator has~~  
5010 ~~the discretion to hold a hearing whenever such a hearing may clarify issues involved in a permit~~  
5011 ~~decision.~~  
5012  
5013                   (i) ~~The public comment period shall automatically extend to the close of any public~~  
5014 ~~hearing. The Administrator may also extend the comment period by so stating at the public~~  
5015 ~~hearing.~~  
5016  
5017                   (j) ~~The Administrator shall render a decision on the draft permit within sixty (60)~~  
5018 ~~days after the completion of the comment period if no hearing is requested. If a hearing is held,~~  
5019 ~~the Administrator shall make a decision on any Department hearing as soon as practicable after~~  
5020 ~~receipt of the transcript or after the expiration of the time set to receive written comments.~~  
5021  
5022                   (k) ~~At the time a final decision is issued, the Department shall respond, in writing, to~~  
5023 ~~those comments received during the public comment period or comments received during the~~  
5024 ~~allotted time for a hearing held by the Department. This response shall:~~

5025  
5026 (i) ~~Specify any changes that have been made to the permit; and~~  
5027  
5028 (ii) ~~Briefly describe and respond to all comments voicing a technical or~~  
5029 ~~regulatory concern that is within the authority of the Department to regulate.~~  
5030  
5031 (l) ~~The response to comments shall also be available to the public.~~  
5032  
5033 (m) ~~Requests for a contested case hearing on a permit issuance, denial, revocation,~~  
5034 ~~termination, or any other final Department action appealable to the Council shall be in~~  
5035 ~~accordance with the Department of Environmental Quality Rules of Practice and Procedure.~~  
5036  
5037 (formerly Section 14(a))(a) The owner or operator of a Class VI well ~~must~~ shall  
5038 prepare, maintain, and comply with a testing and monitoring plan to verify that the geologic  
5039 sequestration project is operating as permitted and is not endangering USDWs. The testing and  
5040 monitoring plan ~~must~~ shall be submitted with the permit application, ~~for~~ shall be subject to  
5041 Administrator approval, and ~~must~~ shall include a description of how the owner or operator will  
5042 meet the requirements of this ~~s~~Section, including accessing sites for all necessary monitoring and  
5043 testing during the life of the project.  
5044  
5045 (formerly Section 14(b))(b) In addition to the requirements of W.S. § 35-11-313,  
5046 ~~T~~esting and monitoring associated with geologic sequestration projects ~~must~~ shall, at a  
5047 ~~minimum,~~ include:  
5048  
5049 (i) ~~Plans and procedures for environmental surveillance and excursion~~  
5050 ~~detection, prevention, and control programs, including a monitoring plan to:~~  
5051  
5052 ~~\_\_\_\_\_ (A) Assess the migration of the injected carbon dioxide; and~~  
5053  
5054 ~~\_\_\_\_\_ (B) Ensure the retention of the carbon dioxide in the geologic~~  
5055 ~~sequestration site.~~  
5056  
5057 (formerly Section 14(b)(ii))(i) Analysis of the carbon dioxide stream with  
5058 sufficient frequency to yield data representative of its chemical and physical characteristics;  
5059  
5060 (formerly Section 14(b)(iii))(ii) Installation and use, except during well  
5061 workovers, of continuous recording devices to monitor:  
5062  
5063 (formerly Section 14(b)(iii)(A))(A) Injection pressure;  
5064  
5065 (formerly Section 14(b)(iii)(B))(B) Injection Rate and volume;  
5066  
5067 (formerly Section 14(b)(iii)(C))(C) Pressure on the annulus between the  
5068 tubing and the long string casing;  
5069  
5070 (formerly Section 14(b)(iii)(D))(D) The annulus fluid volume added; and

5071  
5072 ~~(formerly Section 14(b)(iii)(E))(E)~~ The pressure on the annulus between  
5073 the tubing and the long string casing;

5074  
5075 ~~(formerly Section 14(b)(iv))(iii)~~ Corrosion monitoring of the well materials  
5076 for loss of mass, loss of thickness, cracking, pitting, and other signs of corrosion, which must  
5077 shall be performed and recorded at least quarterly to ensure that the well components meet the  
5078 minimum standards for material strength and performance set forth in Section ~~9(b)~~ 14(b) of this  
5079 eChapter by:

5080  
5081 ~~(formerly Section 14(b)(iv)(A))(A)~~ Analyzing coupons of the well  
5082 construction materials placed in contact with the carbon dioxide stream;

5083  
5084 ~~(formerly Section 14(b)(iv)(B))(B)~~ Routing the carbon dioxide stream  
5085 through a loop constructed with the material used in the well and inspecting the materials in the  
5086 loop; or

5087  
5088 ~~(formerly Section 14(b)(iv)(C))(C)~~ Using an alternative method  
5089 approved by the Administrator;

5090  
5091 ~~(formerly Section 14(b)(v))(iv)~~ Periodic monitoring of the groundwater  
5092 quality and geochemical changes above the confining zone(s) that may be a result of carbon  
5093 dioxide movement or displaced formation fluid movement through the confining zone(s) or  
5094 additional identified zones, including The monitoring wells shall:

5095  
5096 ~~(formerly Section 14(b)(v)(A))(A)~~ ~~The location and number of~~  
5097 ~~monitoring wells must be based on~~ Use specific information about the geologic sequestration  
5098 project, including injection rate and volume, geology, the presence of artificial penetrations, and  
5099 other relevant factors to establish the location and number of monitoring wells; and

5100  
5101 ~~(formerly Section 14(b)(v)(B))(B)~~ ~~The monitoring frequency and~~  
5102 ~~spatial distribution of monitoring wells based on~~ Use baseline geochemical data that have been  
5103 collected under Section ~~5(b)(xiii)~~ 10(b)(xvi) of this eChapter and any modeling results in the area  
5104 of review evaluation required by Section ~~8(e)~~ 13(b) of this eChapter to establish the monitoring  
5105 frequency and spatial distribution of monitoring wells;

5106  
5107 ~~(formerly Section 14(b)(vi))(v)~~ A demonstration of external mechanical  
5108 integrity pursuant to Section ~~13(e)~~ 19(c) at least once per year until the well is plugged;

5109  
5110 ~~(formerly Section 14(b)(vi))(vi)~~ and if required by the Administrator, a  
5111 casing inspection log pursuant to requirements of Section ~~13(d)~~ 19(d) of this eChapter at a  
5112 frequency established in the testing and monitoring plan;

5113  
5114 ~~(formerly Section 14(b)(vii))(vii)~~ A pressure fall-off test that identifies  
5115 reservoir conditions with respect to flow dynamics at least once every five (5) years, unless more  
5116 frequent testing is required by the Administrator based on site-specific information; ~~and~~

5117  
5118 ~~(formerly Section 14(b)(viii))(viii)~~ Testing and monitoring to track the extent of  
5119 the carbon dioxide plume, the position of the pressure front, and surface displacement using:

5120  
5121 ~~(formerly Section 14(b)(viii)(A))(A)~~ Direct methods in the injection  
5122 zone(s); and

5123  
5124 ~~(formerly Section 14(b)(viii)(B))(B)~~ Indirect methods in the injection  
5125 zone (e.g., seismic, electrical, gravity, or electromagnetic surveys and/or down-hole carbon  
5126 dioxide detection tools); unless the Administrator determines, based on site-specific geology, that  
5127 such methods are not appropriate;

5128  
5129 ~~(formerly Section 14(b)(ix))(ix)~~ ~~At the Administrator's discretion, b~~Based on  
5130 site-specific conditions, surface air monitoring ~~and/or~~ soil gas monitoring to detect movement of  
5131 carbon dioxide that could endanger a USDW; or otherwise threaten human health, safety, or the  
5132 environment.;

5133  
5134 ~~(formerly Section 14(b)(ix)(A))(A)~~ The surface air or soil gas  
5135 monitoring plan ~~must~~ shall:

5136  
5137 ~~(formerly Section 14(b)(ix)(A))(I)~~ ~~b~~Be based on potential risks  
5138 to USDWs, and modeling within the area of review;

5139  
5140 ~~(formerly Section 14(b)(ix)(B))(II)~~ Use baseline data to establish  
5141 ~~T~~he monitoring frequency and spatial distribution of surface air monitoring ~~and/or~~ soil gas  
5142 monitoring ~~must reflect baseline data.~~; and

5143  
5144 ~~(formerly Section 14(b)(ix)(B))(III)~~ ~~The monitoring plan must~~  
5145 ~~s~~Specify how the proposed monitoring will yield useful information ~~on~~ for the area of review  
5146 delineation and the potential movement of fluid;

5147  
5148 ~~(formerly Section 14(b)(ix)(B))(1.)~~ ~~e~~Containing any  
5149 contaminant into USDWs in ~~exceedence~~ exceedance of any primary drinking water regulation  
5150 under 40 C.F.R. Part 141.; or

5151  
5152 ~~(formerly Section 14(b)(ix)(B))(2.)~~ ~~w~~Which may  
5153 otherwise adversely affect human health, safety, or the environment.;

5154  
5155 ~~(formerly Section 14(b)(x))(B)~~ If an owner or operator demonstrates  
5156 that monitoring employed under 40 C.F.R. §§ 98.440 to 98.449 ~~(Clean Air Act, 42 U.S.C. 7401~~  
5157 ~~et seq.)~~ accomplishes the goals of subparagraph (b)(ix)(A) ~~and (B)~~ of this ~~s~~Section, ~~and meets~~  
5158 ~~the requirements pursuant to 40 CFR § 146.91(e)(5),~~ the Administrator ~~that requires surface~~  
5159 ~~air/soil gas monitoring must~~ shall approve the use of monitoring employed under 40 C.F.R. §§  
5160 98.440 to 98.449. ~~Compliance with §§ 98.440 to 98.449 pursuant to this provision is considered~~  
5161 ~~a condition of the Class VI permit~~ An owner or operator who uses monitoring employed under

5162 40 C.F.R. §§ 98.440 to 98.449 to meet the requirements of this Section shall comply with 40  
5163 C.F.R. §§ 98.440 to 98.449;

5164  
5165 ~~(formerly Section 14(b)(xi))(x)~~ Any additional monitoring, as required by  
5166 the Administrator, necessary to support, upgrade, and improve computational modeling of the  
5167 area of review re-evaluation required under Section ~~8(d)~~ 13(c) of this eChapter and as necessary  
5168 to demonstrate that there is no movement of fluid containing any contaminant into ~~underground~~  
5169 ~~sources of drinking water~~ USDWs in ~~exceedence~~ exceedance of any primary drinking water  
5170 regulation under 40 C.F.R. Part 141, Subparts E, F, and G, or which could otherwise adversely  
5171 affect human health, safety, or the environment;

5172  
5173 ~~(formerly Section 14(b)(xii))(xi)~~ The owner or operator shall periodically  
5174 review the testing and monitoring plan to incorporate monitoring data collected under this  
5175 ~~subpart~~ Section, operational data collected under Section ~~12~~ 18 of this eChapter, and the most  
5176 recent area of review reevaluation performed under Section ~~8~~ 13 of this eChapter. ~~In no case~~  
5177 ~~shall~~ The owner or operator shall review the testing and monitoring plan ~~less often than at least~~  
5178 once every five (5) years. Based on this review, the owner or operator shall submit an amended  
5179 testing and monitoring plan or demonstrate to the Administrator that no amendment to the testing  
5180 and monitoring plan is needed. Any amendments to the testing and monitoring plan ~~must be~~  
5181 ~~approved~~ are subject to approval by the Administrator, ~~must~~ shall be incorporated into the  
5182 permit, and are subject to the permit modification requirements of Section ~~4-6~~ of this eChapter;  
5183 ~~as appropriate~~. Amended plans or demonstrations shall be submitted to the Administrator as  
5184 follows:

5185  
5186 ~~(formerly Section 14(b)(xii)(A))(A)~~ Within one (1) year of an area of  
5187 review reevaluation;

5188  
5189 ~~(formerly Section 14(b)(xii)(B))(B)~~ Following any significant changes to  
5190 the facility, such as addition of monitoring wells or newly permitted injection wells within the  
5191 area of review, ~~on a schedule determined by the Administrator~~; or

5192  
5193 ~~(formerly Section 14(b)(xii)(C))(C)~~ When required by the  
5194 Administrator; and

5195  
5196 ~~(formerly Section 14(b)(xiii))(xii)~~ A quality assurance and surveillance plan  
5197 for all testing and monitoring requirements.

5198  
5199 ~~(formerly Section 14(d))(c)~~ The owner or operator shall create and retain Rrecords of  
5200 all monitoring information ~~shall~~ that include:

5201  
5202 ~~(formerly Section 14(d)(i))(i)~~ The date, time, and exact place, ~~and time~~ of  
5203 sampling or measurements;

5204  
5205 ~~(formerly Section 14(d)(ii))(ii)~~ The individual(s) who performed the  
5206 sampling or measurements;

5207

5208 ~~(formerly Section 14(d)(iii))~~(iii) The date(s) analyses were performed;  
5209  
5210 ~~(formerly Section 14(d)(iv))~~(iv) The individual(s) who performed the  
5211 analyses;  
5212  
5213 ~~(formerly Section 14(d)(v))~~(v) The analytical techniques or methods used;  
5214 and  
5215  
5216 ~~(formerly Section 14(d)(vi))~~(vi) The results of such analyses.  
5217

## Section 21. Record Retention.

5220 ~~(formerly Section 14(e))~~(a) ~~The permittee~~An owner or operator of a Class VI well  
5221 shall ~~retain~~maintain records ~~of all monitoring information, including~~according to the following  
5222 schedules;

5223  
5224 ~~(formerly Section 14(e)(i))~~(i) Calibration and maintenance records and all original  
5225 strip chart recordings for continuous monitoring instrumentation, copies of all reports required  
5226 by this permit, and records of all data used to complete the application for this permit, for a  
5227 period of at least three (3) years from the date of the sample, measurement, report, or application.  
5228 This period may be extended by request of the Administrator at any time; ~~and~~

5229  
5230 ~~(formerly Section 14(e)(ii))~~(ii) The nature and composition of all injected  
5231 fluids until three (3) years after the completion of any plugging and abandonment procedures  
5232 ~~specified~~ under Section ~~16~~23 of this ~~e~~Chapter;

5233  
5234 ~~(formerly Section 8(f))~~(iii) All modeling inputs and data used to support area of  
5235 review reevaluations under ~~paragraph (d)~~Section 13 of this ~~section~~Chapter shall be retained for  
5236 ten (10) years;

5237  
5238 ~~(formerly Section 17(f))~~(iv) ~~The W~~well-plugging reports, required by Section 23  
5239 of this Chapter, the site closure report required by Section 24 of this Chapter, and any post-  
5240 injection site care data, (including, if appropriate, data and information used to develop establish  
5241 the demonstration of the post-injection site care time frame,) ~~and the site closure report collected~~  
5242 ~~pursuant to requirements of subsection (d) above~~ shall be retained for ten (10) years following  
5243 site closure; ~~The owner or operator must deliver the records to the Administrator at the~~  
5244 ~~conclusion of the retention period, and the records must thereafter be retained at a location~~  
5245 ~~designated by the Administrator for that purpose.~~

5246  
5247 ~~(formerly Section 5(j))~~(v) All data used to complete permit applications shall  
5248 be ~~kept~~retained ~~by the applicant~~ for the life of the geologic sequestration project and for ten (10)  
5249 years following site closure; ~~and~~

5250  
5251 ~~(formerly Section 15(e))~~(vi) ~~The permittee shall retain a~~All other monitoring  
5252 records required by ~~the~~a permit shall be retained for a period of ten (10) years following site

5253 closure. ~~The Administrator may require the owner or operator to deliver the records to the~~  
5254 ~~Administrator at the conclusion of the retention period.~~

5255  
5256 ~~(formerly Section 14(e)(ii))(b)~~ The Administrator may require the owner or  
5257 operator to deliver the records to the Administrator at the conclusion of the record retention  
5258 period.

5259  
5260 Section 22. Reporting and Notice Requirements.

5261  
5262 ~~(formerly Section 15(a))(a)~~ The owner or operator ~~must shall, at a minimum,~~ provide  
5263 the following reports to the Administrator, for each ~~permitted~~ Class VI well:

5264  
5265 ~~(formerly Section 15(a)(i))(i)~~ (i) Semi-annual reports, ~~which~~ Semi-annual reports  
5266 ~~are~~ required by the permit shall be submitted to the Administrator within thirty (30) days  
5267 following the end of the period covered in the report, and shall contain:

5268  
5269 ~~(formerly Section 15(a)(i)(A))(A)~~ Any changes to the physical,  
5270 chemical, and other relevant characteristics of the carbon dioxide stream from the proposed  
5271 operating data;

5272  
5273 ~~(formerly Section 15(a)(i)(B))(B)~~ Monthly average, maximum, and  
5274 minimum values for injection pressure, flow rate and volume, and annular pressure;

5275  
5276 ~~(formerly Section 15(a)(i)(C))(C)~~ A description of any event that  
5277 exceeds operating parameters for annulus pressure or injection pressure as specified in the  
5278 permit;

5279  
5280 ~~(formerly Section 15(a)(i)(D))(D)~~ A description of any event that  
5281 triggers a shutdown device required pursuant to Section ~~12(g)~~ 18(g) of this ~~e~~Chapter, and the  
5282 response taken;

5283  
5284 ~~(formerly Section 15(a)(i)(E))(E)~~ The monthly volume of the carbon  
5285 dioxide stream injected over the reporting period and project cumulatively;

5286  
5287 ~~(formerly Section 15(a)(i)(F))(F)~~ Monthly annulus fluid volume  
5288 added; and

5289  
5290 ~~(formerly Section 15(a)(i)(G))(G)~~ The results of monitoring ~~prescribed~~  
5291 ~~under required by~~ Section ~~14~~ 20 of this ~~e~~Chapter.;

5292  
5293 ~~(formerly Section 15(a)(ii))(ii)~~ Reports, within thirty (30) days of receiving  
5294 the results, of:

5295  
5296 ~~(formerly Section 15(a)(ii)(A))(A)~~ Periodic tests of mechanical  
5297 integrity;

5298

5299 ~~(formerly Section 15(a)(ii)(B))~~(B) Any other test of the injection well  
5300 conducted by the ~~permittee~~ owner or operator if required by the Administrator; and  
5301  
5302 ~~(formerly Section 15(a)(ii)(C))~~(C) Any well workover; and  
5303  
5304 ~~(formerly Section 15(a)(iii))~~(iii) Reports, within twenty-four (24) hours, of:  
5305  
5306 ~~(formerly Section 15(a)(iii)(A))~~(A) Any evidence that the injected  
5307 carbon dioxide stream or associated pressure front may cause an endangerment to a USDW;  
5308  
5309 ~~(formerly Section 15(a)(iii)(B))~~(B) Any noncompliance with a permit  
5310 condition, or malfunction of the injection system, which may cause fluid migration into or  
5311 between USDWs;  
5312  
5313 ~~(formerly Section 15(a)(iii)(C))~~(C) Any triggering of a shut-off system,  
5314 either (i.e., down-hole or at the surface);  
5315  
5316 ~~(formerly Section 15(a)(iii)(D))~~(D) ~~Pursuant to compliance with the~~  
5317 ~~requirement at Section 14(b)(x) of this chapter for surface air or soil gas monitoring or other~~  
5318 ~~monitoring technologies, if required by the Administrator, a~~Any release of carbon dioxide to the  
5319 atmosphere or biosphere ~~indicated by the surface air or soil gas monitoring or other monitoring~~  
5320 ~~technologies required by Section 14(b)(ix) of this Chapter; and~~  
5321  
5322 (E) Any failure to maintain mechanical integrity.  
5323  
5324 ~~(formerly Section 15(a)(iv))~~(b) Owners or operators ~~must~~ shall notify the  
5325 Administrator in writing thirty (30) days in advance of:  
5326  
5327 ~~(formerly Section 15(a)(iv)(A))~~(i) Any planned well workover;  
5328  
5329 ~~(formerly Section 15(a)(iv)(B))~~(ii) Any planned stimulation activities, other  
5330 than stimulation for formation testing conducted under Section ~~5~~ 10 of this ~~e~~Chapter; and  
5331  
5332 ~~(formerly Section 15(a)(iv)(C))~~(iii) Any other planned test of the injection well  
5333 conducted by the ~~permittee~~ owner or operator.  
5334  
5335 ~~(formerly Section 15(b))~~(c) Owners or operators ~~must~~ shall submit all required reports,  
5336 submittals, and notifications to both the Administrator and to EPA; ~~(in an electronic format~~  
5337 ~~acceptable to the EPA).~~  
5338  
5339 ~~(formerly Section 15(e))~~(d) ~~The permittee~~ Owners or operators shall submit a written  
5340 report to the Administrator of all remedial work concerning the failure of equipment or  
5341 operational procedures that resulted in a violation of a permit condition; ~~at the completion of the~~  
5342 remedial work.  
5343

5344 ~~(formerly Section 15(d))~~(e) For any aborted or curtailed operation, the owner or  
5345 operator shall submit to the Administrator a complete report ~~shall be submitted~~ within thirty (30)  
5346 days of complete termination of the discharge or associated activity.

5347 **Section 23. Injection Well-plugging.**

5348  
5349  
5350 ~~(formerly Section 16(a))~~(a) Prior to ~~the~~ well-plugging, the owner or operator ~~must~~ shall  
5351 flush each Class VI injection well with a buffer fluid, determine bottom hole reservoir pressure,  
5352 and perform a final external mechanical integrity test in accordance with Section ~~13~~ 19 of this  
5353 eChapter.

5354  
5355 ~~(formerly Section 16(b))~~(b) The owner or operator of a Class VI well ~~must~~ shall  
5356 prepare, maintain, update on the same schedule as the update to the area of review delineation,  
5357 and comply with a well-plugging plan that is ~~acceptable to~~ approved by the Administrator.  
5358 ~~Temporary or intermittent cessation of injection operations is not abandonment.~~ The well-  
5359 plugging plan ~~must~~ shall include the following information:

5360  
5361 ~~(formerly Section 16(b)(i))~~(i) Appropriate test or measure to determine bottom  
5362 hole reservoir pressure;

5363  
5364 ~~(formerly Section 16(b)(ii))~~(ii) Appropriate testing methods to ensure final  
5365 external mechanical integrity as specified in Section ~~13~~ 19 of this eChapter;

5366  
5367 ~~(formerly Section 16(b)(iii))~~(iii) The type and number of plugs to be used;

5368  
5369 ~~(formerly Section 16(b)(iv))~~(iv) The placement of each plug including the  
5370 elevation of the top and bottom of each plug;

5371  
5372 ~~(formerly Section 16(b)(v))~~(v) The type and grade and quantity of material,  
5373 suitable for use with the carbon dioxide stream, to be used in plugging; and

5374  
5375 ~~(formerly Section 16(b)(vi))~~(vi) A description of the method of placement of  
5376 the plugs.

5377  
5378 ~~(formerly Section 16(e)(iii))~~(c) Any amendments to the injection well-plugging  
5379 plan ~~must be approved~~ are subject to approval by the Administrator, ~~must~~ shall be incorporated  
5380 into the permit if approved, and are subject to the permit modification requirements of Section 4  
5381 6 of this eChapter, ~~as appropriate~~.

5382  
5383 ~~(formerly Section 16(e))~~(d) The owner or operator ~~must~~ shall notify the Administrator,  
5384 in writing, at least sixty (60) days before plugging a well.

5385  
5386 ~~(formerly Section 16(e)(i))~~(i) If any changes have been made to the original well-  
5387 plugging plan, the owner or operator ~~must~~ shall also provide the revised well-plugging plan with  
5388 notice of its intent to plug the well.

5389

5390 ~~(formerly Section 16(e)(ii))(ii)~~ At the discretion of ~~t~~The Administrator, may  
5391 allow a shorter notice period ~~may be allowed~~.

5392

5393

5394

5395 ~~(formerly Section 16(d))(e)~~ Within sixty (60) days after completion of plugging and  
5396 abandonment of a well or well field, the ~~permittee~~ owner or operator shall submit to the  
5397 Administrator a final report that includes:

5398

5399 ~~(formerly Section 16(d)(i))(i)~~ Certification of completion in accordance with  
5400 approved plans and specifications by a licensed professional engineer or a licensed professional  
5401 geologist; and

5402

5403 ~~(formerly Section 16(d)(ii))(ii)~~ Certification of accuracy by the owner or  
5404 operator and by the person who performed the plugging operation (if other than the owner or  
5405 operator).

5406

#### 5407 Section 24. Post-injection Site Care and Site Closure.

5408

5409 ~~(formerly Section 17(a))(a)~~ The owner or operator of a Class VI well ~~must~~ shall  
5410 prepare, maintain, update on the same schedule as the update to the area of review delineation,  
5411 and comply with a plan for post-injection site care and site closure that meets the requirements of  
5412 subparagraph (a)(ii) of this sSection and is ~~acceptable to~~ approved by the Administrator.

5413

5414 ~~(formerly Section 17(a)(i))(i)~~ The ~~owner or operator must submit the~~ post-  
5415 injection site care and site closure plan ~~as a part of the permit application to be~~ is subject to  
5416 approved by the Administrator; in consultation with EPA.

5417

5418 ~~(formerly Section 17(a)(ii))(ii)~~ The post-injection site care and site closure  
5419 plan ~~must~~ shall include the following information:

5420

5421 ~~(formerly Section 17(a)(ii)(A))(A)~~ A demonstration containing  
5422 substantial evidence that the geologic sequestration project will no longer pose a risk of  
5423 endangerment to USDWs ~~or~~ and will not harm or present a risk to human health, safety, or the  
5424 environment at the end of the post-injection site care timeframe. The demonstration ~~must~~ shall be  
5425 based on significant, site-specific data and information, including all data and information  
5426 collected pursuant to Sections 4 10 and 7 12 of this ~~e~~Chapter;

5427

5428 ~~(formerly Section 17(a)(ii)(B))(B)~~ The site closure plan shall address all  
5429 reclamation, ~~required~~ monitoring, and remediation sufficient to show that the carbon dioxide  
5430 stream injected into the geologic sequestration site will not harm human health, safety, the  
5431 environment, or drinking water supplies;

5432

5433 ~~(formerly Section 17(a)(ii)(C))(C)~~ Detailed plans for post-injection  
5434 monitoring, verification, maintenance, and mitigation;

5435

- 5436 ~~(formerly Section 17(a)(ii)(D))~~(D) The pressure differential between  
5437 pre-injection and predicted post-injection pressures in the injection zone;  
5438
- 5439 ~~(formerly Section 17(a)(ii)(E))~~(E) The predicted position of the carbon  
5440 dioxide plume and associated pressure front at the time when plume movement has ceased and  
5441 pressure differentials sufficient to cause the movement of injected fluids or formation fluids into  
5442 a USDW are no longer present, as demonstrated in the area of review evaluation required under  
5443 Section ~~8(e)(i)~~ 13(b)(i) of this ~~e~~Chapter;  
5444
- 5445 ~~(formerly Section 17(a)(ii)(F))~~(F) A description of post-injection  
5446 monitoring locations, methods, and proposed frequency; ~~and~~  
5447
- 5448 ~~(formerly Section 17(a)(ii)(G))~~(G) A proposed schedule for submitting  
5449 post-injection site care monitoring results pursuant to Section ~~15(b)~~ 22(c) of this ~~e~~Chapter, ~~as~~  
5450 ~~appropriate;~~  
5451
- 5452 ~~(formerly Section 17(a)(ii)(H))~~(H) The duration of the post-injection  
5453 site care timeframe that ensures compliance with subparagraph (A) of this ~~subsection~~ paragraph;  
5454
- 5455 ~~(formerly Section 17(a)(ii)(I))~~(I) The results of computational  
5456 modeling performed pursuant to delineation of the area of review under Section ~~8~~ 13 of this  
5457 ~~e~~Chapter;  
5458
- 5459 ~~(formerly Section 17(a)(ii)(J))~~(J) The predicted timeframe for pressure  
5460 decline;  
5461
- 5462 ~~(formerly Section 17(a)(ii)(J))~~(I) ~~w~~Within the injection zone,  
5463 and any other zones; such that formation fluids may not be forced into any USDWs; ~~and/or~~  
5464
- 5465 ~~(formerly Section 17(a)(ii)(J))~~(II) ~~the timeframe for pressure~~  
5466 ~~decline t~~To pre-injection pressures;  
5467
- 5468 ~~(formerly Section 17(a)(ii)(K))~~(K) The predicted rate of carbon dioxide  
5469 plume migration within the injection zone, and the predicted timeframe for the cessation of  
5470 migration;  
5471
- 5472 ~~(formerly Section 17(a)(ii)(L))~~(L) A description of the site-specific  
5473 processes that will result in carbon dioxide trapping including immobilization by capillary  
5474 trapping, dissolution, and mineralization at the site;  
5475
- 5476 ~~(formerly Section 17(a)(ii)(M))~~(M) The predicted rate of carbon dioxide  
5477 trapping in the immobile capillary phase, dissolved phase, and ~~or~~ mineral phase;  
5478
- 5479 ~~(formerly Section 17(a)(ii)(N))~~(N) The results of laboratory analyses,  
5480 research studies, and ~~or~~ field or site-specific studies to verify the information required in  
5481 subparagraphs (J) and (K) of this ~~subsection~~ paragraph;

5482  
5483 ~~(formerly Section 17(a)(ii)(O))~~(O) A characterization of the confining  
5484 zone(s) including a demonstration that ~~it is~~ they are free of transmissive faults, fractures, and  
5485 micro-fractures and of appropriate thickness, permeability, and integrity to impede fluid (~~e.g.,~~  
5486 including carbon dioxide, ~~and~~ and formation fluids) movement;

5487  
5488 ~~(formerly Section 17(a)(ii)(P))~~(P) The presence of potential conduits  
5489 for fluid movement, including planned injection wells and project monitoring wells associated  
5490 with the proposed geologic sequestration project or any other projects in proximity to the  
5491 predicted or modeled, final extent of the carbon dioxide plume and area of elevated pressure;

5492  
5493 ~~(formerly Section 17(a)(ii)(Q))~~(Q) A description of the well  
5494 construction and an assessment of the quality of plugs of all abandoned wells within the area of  
5495 review;

5496  
5497 ~~(formerly Section 17(a)(ii)(R))~~(R) The distance between the injection  
5498 zone and the nearest USDWs above and ~~or~~ below the injection zone; and

5499  
5500 ~~(formerly Section 17(a)(ii)(S))~~(S) Any additional site-specific factors  
5501 required by the Administrator.

5502  
5503 ~~(formerly Section 17(a)(iii))~~(iii) Information submitted to support the  
5504 demonstration in subparagraph (a)(ii) of this sSection ~~must~~ shall meet the following criteria:

5505  
5506 ~~(formerly Section 17(a)(iii)(A))~~(A) All analyses and tests performed ~~to~~  
5507 ~~support the demonstration~~ must shall be accurate, reproducible, and performed in accordance  
5508 with ~~the established quality assurance~~ industry standards;

5509  
5510 ~~(formerly Section 17(a)(iii)(B))~~(B) Estimation techniques ~~must~~ shall be  
5511 appropriate; and

5512  
5513 ~~(formerly Section 17(a)(iii)(B))~~(C) EPA-certified test protocols ~~must~~  
5514 shall be used where available;

5515  
5516 ~~(formerly Section 17(a)(iii)(C))~~(D) Predictive models ~~must~~ shall be  
5517 appropriate and tailored to the site conditions, composition of the carbon dioxide stream and  
5518 injection, and site conditions over the life of the geologic sequestration project;

5519  
5520 ~~(formerly Section 17(a)(iii)(D))~~(E) Predictive models ~~must~~ shall be  
5521 calibrated using existing information (~~e.g., at~~ which may be obtained from Class I, Class II, ~~or~~  
5522 Class V experimental technology, or Class VI well sites) where sufficient data are available;

5523  
5524 ~~(formerly Section 17(a)(iii)(E))~~(F) Reasonably conservative values and  
5525 modeling assumptions ~~must~~ shall be used and disclosed to the Administrator whenever values  
5526 are estimated on the basis of known, historical information instead of site-specific  
5527 measurements;

5528  
5529 ~~(formerly Section 17(a)(iii)(F))~~(G) An analysis ~~must~~ shall be performed  
5530 to identify and assess aspects of the post-injection site care timeframe demonstration that  
5531 contribute significantly to uncertainty. The owner or operator ~~must~~ shall conduct sensitivity  
5532 analyses to determine the effect that significant uncertainty may contribute to the modeling  
5533 demonstration-;

5534  
5535 ~~(formerly Section 17(a)(iii)(G))~~(H) An approved quality assurance and  
5536 quality control plan ~~must~~ shall address all aspects of the demonstration; and-;

5537  
5538 ~~(formerly Section 17(a)(iii)(H))~~(I) Any additional criteria required by  
5539 the Administrator shall be met.

5540  
5541 ~~(formerly Section 17(a)(iv))~~(iv) Upon cessation of injection, owners or  
5542 operators of Class VI wells ~~must~~ shall either submit an amended post-injection site care and site  
5543 closure plan or demonstrate to the Administrator through monitoring data and modeling results  
5544 that no amendment to the plan is needed. Any amendments to the post-injection site care and site  
5545 closure plan ~~must~~ shall be:

5546  
5547 ~~(formerly Section 17(a)(iv)(A))~~(A) Subject to Aapprovedal by the  
5548 Administrator-;

5549  
5550 ~~(formerly Section 17(a)(iv)(B))~~(B) Incorporated into the permit-; and

5551  
5552 ~~(formerly Section 17(a)(iv)(C))~~(C) Subject to the permit modification  
5553 requirements of Section 4 6 of this ~~e~~Chapter, ~~as appropriate~~.

5554  
5555 ~~(formerly Section 17(a)(v))~~(v) The owner or operator may ~~modify~~ amend  
5556 ~~and re-submit~~ the post-injection site care and site closure plan, ~~for the Administrator's approval~~  
5557 ~~within thirty (30) days of such change~~. The owner or operator shall re-submit the post-injection  
5558 site care and closure plan for the Administrator's approval within thirty (30) days of amending  
5559 the plan.

5560  
5561 (vi) Upon receipt of the Administrator's approval of the post-injection site care  
5562 and site closure plan, the owner or operator shall submit the proposed cost estimate for  
5563 measurement, monitoring, and verification of plume stabilization required by Section 26(i) of  
5564 this Chapter.

5565  
5566 ~~(formerly Section 17(b))~~(b) The owner or operator shall monitor the site following the  
5567 cessation of injection to ~~show~~ ascertain the position of the carbon dioxide plume and pressure  
5568 front and demonstrate that USDWs are not being endangered.

5569  
5570 ~~(formerly Section 17(b)(i))~~(i) The owner or operator shall continue to conduct  
5571 monitoring as specified in the Administrator-approved post-injection site care and site closure  
5572 plan until the Administrator certifies site closure ~~is certified by the Administrator~~ pursuant to  
5573 Section 24(b)(iii) of this Chapter.

5574  
5575 ~~(formerly Section 17(b)(ii))(ii)~~ The owner or operator ~~can~~ may request ~~and~~  
5576 ~~demonstrate to the satisfaction of the Administrator~~ that the post-injection site care and site  
5577 closure plan ~~should~~ be revised to reduce the frequency of monitoring, and the Administrator  
5578 may approve the request if the owner or operator demonstrates that the plan should be revised.

5579  
5580 ~~(formerly Section 17(b)(iii))(iii)~~ Prior to ~~authorization for certification of~~ site  
5581 closure, the owner or operator ~~must~~ shall demonstrate to the Administrator, based on monitoring,  
5582 other site-specific data, and modeling that is reasonably consistent with site performance, that no  
5583 additional monitoring is needed to ensure that the geologic sequestration project does not, and is  
5584 not expected to ~~pose an~~ endangerment to a USDW or otherwise threaten human health, safety, or  
5585 the environment. In addition, the owner or operator ~~must~~ shall demonstrate, based on the best  
5586 available understanding of the site, including monitoring data and ~~or~~ modeling, that all other site  
5587 closure standards and requirements have been met.

5588  
5589 ~~(formerly Section 17(b)(iv))(iv)~~ If ~~such a demonstration cannot be made the~~  
5590 owner or operator does not demonstrate that the requirements of subparagraph (b)(iii) of this  
5591 Section have been met, the owner or operator ~~must~~ shall continue post-injection site care.

5592  
5593 ~~(formerly Section 17(b)(v))(v)~~ The owner or operator ~~must~~ shall notify the  
5594 Administrator, in writing, at least 120 days before filing a request for site closure. At this time, if  
5595 any changes have been made to the original post-injection site care and site closure plan, the  
5596 owner or operator ~~must~~ shall also provide the revised plan. ~~At the discretion of the~~  
5597 Administrator, may allow a shorter notice period ~~may be allowed~~.

5598  
5599 ~~(formerly Section 17(b)(vi))(vi)~~ Post-injection site care shall ~~be~~ continue for  
5600 a period ~~of not less than ten (10) years after the date when all wells excluding monitoring wells~~  
5601 ~~have been appropriately plugged and abandoned, all subsurface operations and activities have~~  
5602 ~~ceased and all surface equipment and improvements have been removed or appropriately~~  
5603 ~~abandoned, or so long thereafter as necessary to obtain a completion and release certificate from~~  
5604 ~~the Administrator certifying that plume stabilization has been achieved without the use of control~~  
5605 ~~equipment based on a minimum of three (3) consecutive years of monitoring data.~~ that meets the  
5606 criteria of W.S. § 35-11-313(f)(vi)(F).

5607  
5608 ~~(formerly Section 17(e))(c)~~ After the Administrator has certified site closure, the owner  
5609 or operator ~~must~~ shall plug monitoring wells, ~~as determined by the Administrator,~~ in a manner  
5610 approved by the Administrator that will not allow movement of injection or formation fluids.

5611  
5612 ~~(formerly Section 17(d))(d)~~ ~~Once the Administrator has certified site closure, the~~  
5613 owner or operator ~~must~~ shall submit a site closure report within ninety (90) days after completion  
5614 of all closure operations. ~~The report must thereafter be retained at a location designated by the~~  
5615 ~~Administrator for ten (10) years.~~ The report ~~must~~ shall include:

5616  
5617 ~~(formerly Section 17(d)(i))(i)~~ Documentation of ~~appropriate~~ injection and  
5618 monitoring well-plugging ~~as specified in~~ that meets the requirements of Section ~~16~~ 23 of this  
5619 eChapter and paragraph (c) of this ~~s~~Section;

5620  
5621 ~~(formerly Section 17(d)(ii))(ii)~~ (ii) The owner or operator must provide a A  
5622 copy of a survey plat that has been submitted to the local zoning authority designated by the  
5623 Administrator; and:  
5624  
5625 ~~(formerly Section 17(d)(ii)(A))(A)~~ (A) The plat ~~must~~ shall indicate the  
5626 location of the injection well(s) and monitoring wells relative to permanently surveyed  
5627 benchmarks; and  
5628  
5629 ~~(formerly Section 17(d)(ii)(B))(B)~~ (B) The owner or operator ~~must~~ shall  
5630 also submit a copy of the plat to the US EPA Regional Administrator; and:  
5631  
5632 ~~(formerly Section 17(d)(iii))(iii)~~ (iii) Documentation of appropriate notification  
5633 and information to ~~such~~ the State, local and tribal authorities ~~as~~ that have authority over drilling  
5634 activities to enable ~~such State and local authorities~~ them to impose appropriate conditions on  
5635 subsequent drilling activities that may penetrate the injection and confining zone(s); and:  
5636  
5637 ~~(formerly Section 17(d)(iv))(iv)~~ (iv) Proof ~~of providing notice to surface owners,~~  
5638 ~~mineral claimants, mineral owners, lessees, and other owners of record of subsurface interests as~~  
5639 ~~to the proposed site closure. Notice requirements at a minimum shall include~~ that the owner or  
5640 operator has:  
5641  
5642 ~~(formerly Section 17(d)(iv)(A))(A)~~ (A) The ~~p~~ublishing ed of notice of the  
5643 application for site closure, including ~~(formerly Section 17(d)(iv)(B))~~ (B) The published notice  
5644 ~~shall provide~~ a mechanism to request a public hearing; and ~~(formerly Section 17(d)(iv)(A))~~ in a  
5645 newspaper of general circulation in each county of the proposed operation at weekly intervals for  
5646 four (4) consecutive weeks; and  
5647  
5648 ~~(formerly Section 17(d)(iv)(C))(B)~~ (B) ~~A copy of the notice shall also be~~  
5649 ~~m~~ailed notice of the application for site closure to all surface owners, mineral claimants,  
5650 mineral owners, lessees, and other owners of record of subsurface interests that are located  
5651 within one (1) mile of the proposed boundary of the geologic sequestration site; and  
5652  
5653 ~~(formerly Section 17(d)(v))(v)~~ (v) Records ~~reflecting~~ of the nature,  
5654 composition, and volume of the carbon dioxide stream.  
5655  
5656 ~~(formerly Section 17(e))(e)~~ (e) Each owner or operator of a Class VI injection well ~~must~~  
5657 shall record a notation on the deed to the facility property or any other document that is normally  
5658 examined during title search that will in perpetuity provide notice to any potential purchaser of  
5659 the property, and shall file an affidavit in accordance with W.S. § 35-11-313(f)(vi)(G), that  
5660 includes the following information:  
5661  
5662 ~~(formerly Section 17(e)(i))(i)~~ (i) The fact that land has been used to sequester carbon  
5663 dioxide;  
5664

5665 ~~(formerly Section 17(e)(ii))(ii)~~ The name of the State agency, local  
5666 authority, ~~and~~/or tribe with which the survey plat was filed, as well as the address of the  
5667 ~~Regional Environmental Protection Agency~~ EPA regional ~~Office~~ to which it was submitted; and

5669 ~~(formerly Section 17(e)(iii))(iii)~~ The volume of fluid injected, the injection  
5670 zone or zones into which it was injected, and the period over which injection occurred.

5671  
5672 **Section 25. Emergency and Remedial Response.**

5673  
5674 ~~(formerly Section 18(a))(a)~~ As part of the permit application, the All owners or  
5675 operators of a Class VI well shall develop and maintain ~~must provide the Administrator with~~ an  
5676 emergency and remedial response plan that describes actions to be taken to address movement of  
5677 the injectate or formation fluids that ~~may cause an~~ endangerments ~~to~~ a USDW or threatens  
5678 human health, safety, or the environment during construction, operation, closure, and post-  
5679 closure periods.

5680 ~~(formerly Section 18(a)(i))(i)~~ The emergency and remedial response plan ~~must~~  
5681 shall be reviewed and updated, as necessary, on the same schedule as the update to the area of  
5682 review delineation.

5683  
5684 ~~(formerly Section 18(a)(ii))(ii)~~ Any amendments to the emergency and  
5685 remedial response plan ~~must shall~~ be subject to ~~approved~~ by the Administrator, ~~must shall~~ be  
5686 incorporated into the permit, and are subject to the permit modification requirements of Section 4  
5687 6 of this ~~e~~Chapter, ~~as appropriate.~~ ~~(formerly Section 18(a)(ii)(A))~~ Amended ~~plans or~~  
5688 demonstrations to the emergency and remedial response plan shall be submitted to the  
5689 Administrator as follows:

5690  
5691 ~~(formerly Section 18(a)(ii)(A)(I))(A)~~ Within one (1) year of an area of  
5692 review reevaluation;

5693  
5694 ~~(formerly Section 18(a)(ii)(A)(II))(B)~~ Following any significant  
5695 changes to the facility, such as addition of injection or monitoring wells, ~~on a schedule~~  
5696 ~~determined by the Administrator~~; or

5697  
5698 ~~(formerly Section 18(a)(ii)(A)(III))(C)~~ When required by the  
5699 Administrator.

5700  
5701 ~~(formerly Section 18(e))(iii)~~ The emergency and remedial response plan ~~(as~~  
5702 ~~required by Section 18 of this chapter) and a demonstration of financial responsibility (as~~  
5703 ~~described by Section 19 of this chapter) must shall~~ account for the entire area of review ~~(as~~  
5704 ~~modified) delineated pursuant to Section 13 of this Chapter~~, regardless of whether ~~or not~~  
5705 corrective action in the area of review is phased.

5706  
5707 ~~(formerly Section 18(b))(b)~~ If any monitoring data, or other ~~evidence obtained by the~~  
5708 ~~owner or operator~~ information indicate that any contaminant, the injected carbon dioxide stream,  
5709 displaced formation fluids, or associated pressure front may endanger a USDW or threatens  
5710 human health, safety, or the environment, the owner or operator ~~must shall~~:

5711  
5712 ~~(formerly Section 18(b)(i))~~(i) Immediately cease injection;

5713  
5714 ~~(formerly Section 18(b)(ii))~~(ii) Take all steps reasonably necessary to  
5715 identify and characterize any release;

5716  
5717 ~~(formerly Section 18(b)(iii))~~(iii) Orally ~~N~~otify the Administrator within  
5718 twenty-four (24) hours: of discovering the condition; and

5719  
5720 ~~(formerly Section 4(e)(i)(R)(II))~~(iv) ~~Any noncompliance with a permit condition~~  
5721 ~~or malfunction of the injection system that may cause fluid migration into or between USDWs or~~  
5722 ~~if an excursion is discovered. It shall be orally reported to the Administrator within twenty-four~~  
5723 ~~(24) hours from the time the permittee becomes aware of the circumstances, and a written~~  
5724 ~~submission shall be~~ Provide a written report to the Administrator within five (5) days of ~~the~~  
5725 ~~time the permittee becomes aware of any excursion or indication that a contaminant may cause~~  
5726 ~~an endangerment to a USDW~~ discovering the condition. The written ~~submission~~ report shall  
5727 contain:

5728  
5729 ~~(formerly Section 4(e)(i)(R)(II))(1.)~~(A) A description of the  
5730 noncompliance and its cause;

5731  
5732 ~~(formerly Section 4(e)(i)(R)(II))(2.)~~(B) The period of  
5733 noncompliance, including exact dates and times, and, if the noncompliance has not been  
5734 controlled, the anticipated time it is expected to continue; and

5735  
5736 ~~(formerly Section 4(e)(i)(R)(II))(3.)~~(C) Steps taken or planned to  
5737 reduce, eliminate, and prevent reoccurrence of the noncompliance.

5738  
5739 ~~(formerly Section 18(b)(iv))~~(c) ~~In addition to paragraphs (i-iii) of this subsection, if~~  
5740 ~~an~~ If an owner or operator discovers any noncompliance with a permit condition or a  
5741 requirement of this Chapter that may cause fluid migration into or between USDWs, any  
5742 malfunction of the injection system that may cause fluid migration into or between USDWs, or  
5743 any excursion is discovered, the owner or operator shall:

5744  
5745 ~~(formerly Section 18(b)(iv))~~(i) ~~provide verbal notice to the Department~~  
5746 Orally notify the Administrator within twenty-four (24) hours, of discovering the condition;

5747  
5748 ~~(formerly Section 4(e)(i)(R)(II))~~(ii) ~~Any noncompliance with a permit condition~~  
5749 ~~or malfunction of the injection system that may cause fluid migration into or between USDWs or~~  
5750 ~~if an excursion is discovered. It shall be orally reported to the Administrator within twenty-four~~  
5751 ~~(24) hours from the time the permittee becomes aware of the circumstances, and~~ Provide a  
5752 written ~~submission~~ report to the Administrator shall be ~~provided~~ within five (5) days of ~~the time~~  
5753 ~~the permittee becomes aware of any excursion or indication that a contaminant may cause an~~  
5754 ~~endangerment to a USDW.~~ discovering the condition. The written ~~submission~~ which shall  
5755 contain:

5756

5757 ~~(formerly Section 4(e)(i)(R)(H)(1.))~~(A) A description of the  
5758 noncompliance, malfunction, or excursion and its cause;

5759  
5760 ~~(formerly Section 4(e)(i)(R)(H)(2.))~~(B) The period of  
5761 noncompliance, malfunction, or excursion, including exact dates and times, and, if the  
5762 noncompliance, malfunction, or excursion has not been controlled, the anticipated time it is  
5763 expected to continue;

5764  
5765 ~~(formerly Section 4(e)(i)(R)(H)(3.))~~(C) Steps taken or planned to  
5766 reduce, eliminate, and prevent reoccurrence of the noncompliance, malfunction, or excursion.

5767  
5768 ~~(formerly Section 18(b)(iv))~~(iii) If an excursion is discovered, followed by  
5769 provide written notice to all surface owners, mineral claimants, mineral owners, lessees, and  
5770 other owners of record of subsurface interests within thirty (30) days of ~~when~~ discovering the  
5771 excursion ~~is discovered~~; and

5772  
5773 ~~(formerly Section 18(b)(v))~~(iv) Implement the emergency and remedial  
5774 response plan approved by the Administrator.

5775  
5776 ~~(formerly Section 18(e))~~(d) The Administrator may allow the owner or operator to  
5777 resume injection prior to ~~remediation~~ implementing the emergency and remedial response plan if  
5778 the owner or operator demonstrates that the injection operation will not endanger USDWs or  
5779 otherwise threaten human health, safety, or the environment.

5780  
5781 ~~(formerly Section 6(b))~~(e) If any water quality monitoring of ~~an underground source~~  
5782 ~~of drinking water~~ a USDW indicates the movement of any contaminant into the ~~underground~~  
5783 ~~source of drinking water~~ USDW, except as authorized under this ~~e~~Chapter, the Administrator  
5784 shall prescribe ~~such any~~ such any additional requirements for construction, corrective action, operation,  
5785 monitoring, ~~or~~ reporting, ~~(including or closure of the injection well)~~ as that are necessary to  
5786 prevent ~~such further~~ such further movement, ~~and~~:

5787  
5788 ~~(formerly Section 6(b))~~(i) ~~In~~ If the ~~case of~~ wells responsible for the movement  
5789 is authorized by permit, these additional requirements shall be imposed by modifying the permit  
5790 ~~in accordance with Section 4 of this chapter~~; or

5791  
5792 ~~(formerly Section 6(b))~~(ii) ~~The Administrator~~ the permit may ~~be~~ terminated or  
5793 revoke and reissue the permit ~~under~~ pursuant to Section 4 7 of this ~~e~~Chapter ~~if cause exists, or~~  
5794 ~~appropriate enforcement action may be taken if the permit has been violated~~.

5795  
5796 **Section 26. Financial Responsibility.**

5797  
5798 ~~(formerly Section 19(b))~~(a) Owners or operators of Class VI wells ~~must~~ shall establish,  
5799 demonstrate, and maintain financial responsibility for all applicable phases of the geologic  
5800 sequestration project, including complete site reclamation in the event of default. The phases of a  
5801 geologic sequestration project are ~~as follows~~:

5802

5803 ~~(formerly Section 19(b)(i))~~(i) Permitting/~~C~~characterization~~;~~;

5804

5805 ~~(formerly Section 19(b)(ii))~~(ii) Testing and mMonitoring ~~and testing,~~

5806 ~~including the requirements of pursuant to~~ Section ~~14~~ 20 of this ~~e~~Chapter~~;~~;

5807

5808 ~~(formerly Section 19(b)(iii))~~(iii) Operations, including (injection and

5809 ~~permanent well closure activities)~~well-plugging, ~~including the requirements of pursuant to~~

5810 Sections ~~16~~ 18 and 23 of this ~~e~~Chapter~~;~~;

5811

5812 ~~(formerly Section 19(b)(iv))~~(iv) Post-injection site care, including (“plume

5813 stabilization”, monitoring, measurement, verification, corrective action, and other actions

5814 needed to ensure that underground sources of drinking water are not endangered from the time of

5815 well-plugging until site closure is certified by the Administrator; and above ground reclamation

5816 is completed), ~~including the requirements of pursuant to~~ Section ~~17~~ 24 of this ~~e~~Chapter~~;~~; and

5817

5818 ~~(formerly Section 19(b)(v))~~(v) Emergency and remedial response (~~that~~

5819 ~~meets the requirements of pursuant to~~ Section ~~18-25~~ of this ~~e~~Chapter).

5820

5821 ~~(formerly Section 19(e))~~(b) The owner or operator ~~must~~ shall develop ~~submit a detailed~~

5822 ~~written estimate, at the time of permit application~~ and annually updated ~~annually~~ in accordance

5823 with paragraph ~~(j)(iii) below~~ (f) of this Section, a written financial assurance cost estimate.;

5824

5825 ~~(formerly Section 19(e))~~(i) ~~in current dollars,~~ The financial assurance cost

5826 estimate shall ~~that~~ includes the cost in current dollars of:

5827

5828 ~~(formerly Section 19(e))~~(A) pPerforming corrective action on other wells

5829 in the area of review that require corrective action ~~meets the requirements of under~~ Section ~~8~~ 13

5830 of this ~~e~~Chapter;

5831

5832 ~~(formerly Section 19(e))~~(B) pPlugging the injection well(s) ~~that meets~~

5833 ~~the requirements of under~~ Section ~~16~~ 23 of this ~~e~~Chapter;

5834

5835 ~~(formerly Section 19(e))~~(C) pPost-injection site care and site closure ~~that~~

5836 ~~meets the requirements of under~~ Section ~~17~~ 24 of this ~~e~~Chapter;

5837

5838 ~~(formerly Section 19(e))~~(D) Testing and monitoring ~~activities that meets~~

5839 ~~the requirements of under~~ Section ~~14~~ 20 of this ~~e~~Chapter; and

5840

5841 ~~(formerly Section 19(e))~~(E) Emergency and remedial response ~~that~~

5842 ~~meets the requirements of under~~ Section ~~18~~ 25 of this ~~e~~Chapter.

5843

5844 ~~(formerly Section 19(e)(i))~~(ii) The financial assurance cost estimate ~~for the various~~

5845 ~~phases of the sequestration project~~ shall consider the following events:

5846

5847 ~~(formerly Section 19(e)(i)(A))~~(A) Contamination of underground

5848 sources of water including, drinking water supplies;

5849  
5850 ~~(formerly Section 19(e)(i)(B))~~(B) Mineral rights infringement.;

5851  
5852 ~~(formerly Section 19(e)(i)(C))~~(C) Single large-volume release of  
5853 carbon dioxide that impacts human health and safety ~~and/or~~ that causes ecological damage.;

5854  
5855 ~~(formerly Section 19(e)(i)(D))~~(D) Low-level leakage of carbon dioxide  
5856 to the surface that impacts human health and safety ~~and/or~~ that causes ecological damage.;

5857  
5858 ~~(formerly Section 19(e)(i)(E))~~(E) Storage rights infringement.;

5859  
5860 ~~(formerly Section 19(e)(i)(F))~~(F) Property and infrastructure damage,  
5861 including changes to surface topography and structures.;

5862  
5863 ~~(formerly Section 19(e)(i)(G))~~(G) Entrained contaminant releases ~~(non-~~  
5864 ~~CO<sub>2</sub>)~~ of contaminants other than carbon dioxide.;

5865  
5866 ~~(formerly Section 19(e)(i)(H))~~(H) Accidents/ and unplanned events.;

5867  
5868 ~~(formerly Section 19(e)(i)(I))~~(I) Well capping and permitted  
5869 abandonment.;

5870 and  
5871 ~~(formerly Section 19(e)(i)(J))~~(J) Removal of above-ground facilities  
5872 and site reclamation.

5873  
5874 ~~(formerly Section 19(e)(ii))~~(iii) The owner or operator shall consider the  
5875 Risk Activity ~~m~~Matrix in Appendix A of this ~~e~~Chapter ~~shall be considered during the risk~~  
5876 ~~assessment process~~ to develop the financial assurance cost estimate .

5877  
5878 ~~(formerly Section 19(e)(iii))~~(iv) The financial assurance cost estimate shall  
5879 be based upon a multi-disciplinary analytical framework such as Monte Carlo or other  
5880 commonly accepted stochastic modeling tools.

5881  
5882 ~~(formerly Section 19(e)(iii)(A))~~(A) Cost curves shall combine risk  
5883 probabilities, event outcomes, and damages assessment to calculate expected losses under a  
5884 series of events.

5885  
5886 ~~(formerly Section 19(e)(iii)(B))~~(B) For all cases of potential damages,  
5887 the probability distributions should be identified for 50 percent, 95 percent, and 99 percent  
5888 probabilities of occurrence.

5889  
5890 ~~(formerly Section 19(e))~~(v) The owner or operator shall perform the financial  
5891 assurance cost estimate ~~must be performed~~ for each phase separately. and  
5892  
5893 ~~(formerly Section 19(e))~~(vi) ~~must be based~~ The owner or operator shall base the  
5894 financial assurance cost estimate on the costs to the regulatory agency of hiring a third party (that

5895 is not within the corporate structure of the owner or operator to perform the required activities.  
5896 ~~A third party is a party who is not within the corporate structure of the owner or operator.~~

5897  
5898 ~~(formerly Section 8(e))(vii)~~ The ~~emergency and remedial response plan (as~~  
5899 ~~required by Section 18 of this chapter) and a demonstration of financial responsibility assurance~~  
5900 ~~cost estimate (as described by Section 19 of this chapter) must shall~~ account for the entire area of  
5901 review ~~(as modified), regardless of whether or not corrective action in the area of review is~~  
5902 ~~phased~~ delineated pursuant to Section 13 of this Chapter.

5903  
5904 (viii) The owner or operator shall submit an updated financial assurance cost  
5905 estimate to the Administrator annually within thirty (30) days of the anniversary date when the  
5906 original financial assurance cost estimate was submitted.

5907  
5908 ~~(formerly Section 19(g))(c)~~ The financial responsibility instrument(s) used shall be  
5909 from the following list of qualifying instruments and shall be submitted on a Wyoming  
5910 Department of Environmental Quality form:

5911  
5912 ~~(formerly Section 19(g)(i))(i)~~ Irrevocable Trust Funds with government-backed  
5913 securities;

5914  
5915 ~~(formerly Section 19(g)(ii))(ii)~~ Surety Bonds;

5916  
5917 ~~(formerly Section 19(g)(iii))(iii)~~ Irrevocable Letter of Credit;

5918  
5919 ~~(iv) — Insurance.~~

5920  
5921 ~~(A) — Any insurance instruments submitted for financial assurance~~  
5922 ~~purposes shall include State of Wyoming as an additional insured.~~

5923  
5924 ~~(B) — Inclusion of the State of Wyoming as an additional insured shall~~  
5925 ~~not be deemed a waiver of sovereign immunity.~~

5926  
5927 ~~(v) — Self insurance (i.e., Financial Test and Corporate Guarantee);~~

5928  
5929 ~~(vi) — Escrow account;~~

5930  
5931 ~~(vii) — Any other instrument(s) satisfactory to the Administrator.~~

5932  
5933 (iv) Cash; or

5934  
5935 (v) Federally Insured Certificates of Deposit.

5936  
5937 ~~(formerly Section 19(h))(d)~~ The qualifying instrument(s) ~~must shall~~ be sufficient to  
5938 cover the cost of the financial assurance cost estimate required in ~~subsection (d) paragraph (b)~~ of  
5939 this ~~s~~Section.

5940

5941 ~~(formerly Section 19(i))(e)~~ The qualifying financial responsibility instrument(s) ~~must~~  
5942 shall comprise protective conditions of coverage that include at a minimum cancellation,  
5943 renewal, continuation provisions, specifications on when the provider becomes liable following a  
5944 notice of cancellation, and requirements for the provider to meet a minimum rating, minimum  
5945 capitalization, and the ability to pass the bond rating test when applicable.  
5946

5947 ~~(formerly Section 19(i)(i))(i) Cancellation—~~ An owner or operator ~~must~~ shall  
5948 provide that their financial mechanism may not cancel, terminate or fail to renew except for  
5949 failure to pay such financial instrument. ~~If there is a failure to pay the financial instrument, the~~  
5950 ~~financial institution may elect to cancel, terminate, or fail to renew the instrument by sending~~  
5951 ~~notice by certified mail to the owner or operator and the Administrator. The cancellation must~~  
5952 ~~not be final for 120 days after receipt of cancellation notice. The owner or operator must provide~~  
5953 ~~an alternate financial responsibility demonstration within sixty (60) days of notice of~~  
5954 ~~cancellation, and if an alternate financial responsibility demonstration is not acceptable (or~~  
5955 ~~possible), any funds from the instrument being cancelled must be released within sixty (60) days~~  
5956 ~~of notification by the Administrator.~~  
5957

5958 ~~(formerly Section 19(i)(i))(A)~~ If there is a failure to pay the financial  
5959 instrument, the financial institution may elect to cancel, terminate, or fail to renew the instrument  
5960 by sending notice by certified mail to the owner or operator and the ~~Administrator~~ Director;  
5961

5962 ~~(formerly Section 19(i)(i))(B)~~ The cancellation shall not be final for 120  
5963 days after receipt of cancellation notice;  
5964

5965 ~~(formerly Section 19(i)(i))(C)~~ ~~The owner or operator must provide an~~  
5966 ~~alternate financial responsibility demonstration~~ W within sixty (60) days of notice of cancellation,  
5967 the owner or operator shall provide to the Director an alternate financial responsibility  
5968 demonstration that meets the requirements of paragraphs (c), (d), (e), (f), and (g) of this Section;  
5969 and  
5970

5971 ~~(formerly Section 19(i)(i))(D)~~ If an alternate financial responsibility  
5972 demonstration is not acceptable (or possible), any funds from the instrument being cancelled  
5973 ~~must~~ shall be released within sixty (60) days of notification by the ~~Administrator~~ Director.  
5974

5975 ~~(formerly Section 19(i)(ii))(ii) Renewal—~~ Owners or operators ~~must~~ shall  
5976 renew all financial instruments, if an instrument expires, for the entire term of the geologic  
5977 sequestration project. The instrument may be automatically renewed as long as, at a minimum,  
5978 the owner or operator has the option of renewal at the face amount of the expiring instrument.  
5979

5980 ~~(formerly Section 19(i)(iii))(iii) Continuation—~~ Cancellation, termination, or  
5981 failure to renew may not occur and the financial instrument shall remain in full force and effect  
5982 in the event that on or before the date of expiration:  
5983

5984 ~~(formerly Section 19(i)(iii)(A))(A)~~ The Administrator deems the facility  
5985 abandoned.  
5986

5987 ~~(formerly Section 19(i)(iii)(B))~~(B) The permit is terminated, revoked, or  
5988 a new permit is denied.

5989  
5990 ~~(formerly Section 19(i)(iii)(C))~~(C) Closure is ordered by the  
5991 Administrator, a U.S. district court, or other court of competent jurisdiction.

5992  
5993 ~~(formerly Section 19(i)(iii)(D))~~(D) The owner or operator is named as  
5994 debtor in a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code.

5995  
5996 ~~(formerly Section 19(i)(iii)(E))~~(E) The amount due is paid.

5997  
5998 ~~(formerly Section 19(j))~~(f) The qualifying financial responsibility instrument~~(s)~~ must  
5999 be approved are subject to approval by the ~~Administrator~~ Director. The ~~Administrator~~ shall also  
6000 approve the use and length of pay-in-periods for trust funds and escrow accounts are also subject  
6001 to approval by the Director.

6002  
6003 ~~(formerly Section 19(j)(i))~~(i) No Class VI permit shall be issued until and unless  
6004 the Administrator Director shall has considered and approved the financial responsibility  
6005 demonstration for all ~~the~~ phases of the geologic sequestration project ~~prior to issuing a Class VI~~  
6006 permit.

6007  
6008 ~~(formerly Section 19(j)(ii))~~(ii) ~~The Administrator may find that the~~  
6009 ~~financial responsibility demonstration is unsatisfactory for any reason, as long as that reason is~~  
6010 ~~not arbitrary or capricious.~~ The ~~Administrator~~ Director may ~~exercise discretion in~~ negotiate  
6011 a satisfactory financial responsibility demonstration or ~~to~~ deny a demonstration.

6012  
6013 ~~(formerly Section 19(j)(iii))~~(iii) The owner or operator ~~must~~ shall provide  
6014 any updated information related to ~~their~~ financial responsibility instrument(s) on an annual basis,  
6015 and if there are any changes, the ~~Administrator~~ Director ~~must~~ shall evaluate the financial  
6016 responsibility demonstration ~~to confirm that~~ and determine whether the instrument(s) used  
6017 ~~remain~~ are adequate ~~for use~~. The owner or operator ~~must~~ shall maintain financial responsibility  
6018 requirements regardless of the status of the ~~Administrator's~~ Director's review of the financial  
6019 responsibility demonstration.

6020  
6021 ~~(formerly Section 19(j)(iv))~~(iv) The owner or operator ~~must~~ shall provide an  
6022 adjustment of the financial assurance cost estimate to the Administrator within sixty (60) days of  
6023 ~~notification by the Administrator receiving notice, if that~~ the Administrator has determined  
6024 ~~during the annual evaluation of the qualifying financial responsibility instrument(s) that the most~~  
6025 ~~recent a~~ demonstration of financial assurance is not ~~longer~~ adequate to cover the cost of  
6026 corrective action ~~(as required by Section 8 of this chapter)~~, injection well-plugging ~~(as required~~  
6027 ~~by Section 16 of this chapter)~~, post-injection site care and site closure ~~(as required by Section 17~~  
6028 ~~of this chapter)~~, and emergency and remedial response ~~(as required by Section 18 of this~~  
6029 ~~chapter)~~.

6030  
6031 ~~(formerly Section 19(j)(v))~~(v) During ~~the active life~~ all phases of the geologic  
6032 sequestration project, the owner or operator ~~must~~ shall adjust the financial assurance cost

6033 estimate for inflation within sixty (60) days prior to the anniversary date of the establishment of  
6034 the financial instrument(s) used to comply with ~~paragraph (g) of this s~~Section and provide this  
6035 adjustment to the Administrator. The owner or operator ~~must~~ shall also provide to the  
6036 Administrator written updates of adjustments to the cost estimate within sixty (60) days of any  
6037 amendments to the area of review and corrective action plan (~~Section 8 of this chapter~~), the  
6038 injection well-plugging plan (~~Section 16 of this chapter~~), the post-injection site care and site  
6039 closure plan (~~Section 17 of this chapter~~), the emergency and remedial response plan (~~Section 18~~  
6040 ~~of this chapter~~), and mitigation or reclamation costs that the State may incur as a result of any  
6041 default by the permit holder.

6042  
6043 ~~(formerly Section 19(j)(vi))(vi)~~ The Administrator must approve  
6044 aAny decrease or increase to the initial financial assurance cost estimate shall be subject to  
6045 approval by the Administrator. During ~~the active life~~ all phases of the geologic sequestration  
6046 project, the owner or operator ~~must~~ shall revise the cost estimate no later than sixty (60) days  
6047 after the Administrator has approved ~~the a~~ request to modify the area of review and corrective  
6048 action plan (~~Section 8 of this chapter~~), the injection well-plugging plan (~~Section 16 of this~~  
6049 ~~chapter~~), the post-injection site care and site closure plan (~~Section 17 of this chapter~~), ~~and or~~  
6050 the emergency and response plan (~~Section 18 of this chapter~~), if the change in the plan increases the  
6051 cost. If the change to the plans decreases the cost, any withdrawal of funds ~~must be~~ is subject to  
6052 approval by the Administrator. Any decrease to the value of the financial assurance instrument  
6053 ~~must first be~~ is subject to approval by the Administrator. ~~The revised cost estimate must be~~  
6054 ~~adjusted for inflation as specified in paragraph (j)(v) of this section.~~

6055  
6056 ~~(formerly Section 19(j)(vii))(vii)~~ Whenever the current financial assurance  
6057 cost estimate increases to an amount greater than the face amount of a financial instrument  
6058 currently in use, the owner or operator, within sixty (60) days after the increase, ~~must~~ shall either  
6059 cause the face amount to be increased to an amount at least equal to the current financial  
6060 assurance cost estimate and submit evidence of such increase to the Administrator, or the owner  
6061 or operator shall obtain other financial responsibility instruments to cover the increase.  
6062 Whenever the current financial assurance cost estimate decreases, the face amount of the  
6063 financial assurance instrument may be reduced to the amount of the current financial assurance  
6064 cost estimate only after the owner or operator has received written approval from the  
6065 Administrator.

6066  
6067 ~~(formerly Section 19(k))(g)~~ The owner or operator may demonstrate financial  
6068 responsibility by using one (1) or multiple qualifying financial instruments ~~for specific phases of~~  
6069 ~~the geologic sequestration project~~ subject to the following requirements:

6070  
6071 (i) Owners or operators that propose to demonstrate financial assurance with  
6072 surety bonds shall meet the following requirements:

6073  
6074 (A) A corporate surety shall not be considered good and sufficient  
6075 unless:

6076  
6077 (I) It is licensed to do business in the State;  
6078

6079 (II) The estimated bond amount does not exceed the limit of  
6080 risk as provided for in W.S. § 26-5-110, nor raise the total of all bonds held by the applicant  
6081 under that surety above three (3) times the limit of risk; and

6082  
6083 (III) The surety agrees:

6084  
6085 (1.) Not to cancel bond unless the Department gives  
6086 prior written approval of a good and sufficient replacement surety with transfer of the liability  
6087 that has accrued against the operator on the permit area, site, or facility;

6088  
6089 (2.) To be jointly and severally liable with the permittee,  
6090 owner, or operator.

6091  
6092 (3.) To provide immediate written notice to the  
6093 Department and operator once it becomes unable or may become unable due to any action filed  
6094 against it to fulfill its obligations under the bond.

6095  
6096 (B) If for any reason the surety becomes unable to fulfill its obligations  
6097 under the bond, the operator shall provide the required notice. Failure to comply with this  
6098 provision shall result in suspension of the permit.

6099  
6100 (C) The surety bond shall be submitted on a Wyoming Department of  
6101 Environmental Quality form.

6102  
6103 (ii) Owners or operators that propose to demonstrate financial assurance with  
6104 cash, or government securities, or a combination of both, shall meet the following requirements:

6105  
6106 (A) Securities that are unencumbered shall only include those that are  
6107 United States government securities or state government securities that are acceptable to the  
6108 Director. Government securities shall be endorsed to the order of the Department and placed in  
6109 possession of the Department. Possession shall be in the form of the cash value of the irrevocable  
6110 trust for the full amount of the reclamation obligation and payable to the Department and  
6111 federally insured.

6112  
6113 (B) An owner or operator shall satisfy the requirements of this  
6114 subsection by establishing an irrevocable trust that conforms to the requirements below and  
6115 submitting an originally signed duplicate of the trust agreement to the Director for consideration.

6116  
6117 (I) The irrevocable trust shall be submitted to the Director on  
6118 the Wyoming Department of Environmental Quality Irrevocable Trust Form and be signed by  
6119 the owner, operator, or guarantor as principal and the financial institution as Trustee, and made  
6120 payable to the Department;

6121  
6122 (II) The Trustee shall be a bank organized to do business in the  
6123 United States that has the authority to act as a trustee and whose trust operations is regulated and  
6124 examined by a federal agency;

6125  
6126 (III) The irrevocable trust shall be cash funded for the full  
6127 amount of the financial assurance obligation to be provided in the irrevocable trust before it may  
6128 be approved to satisfy the requirements of financial assurance in lieu of a bond. For purposes of  
6129 this subsection, “the full amount of the financial assurance obligation to be provided” means the  
6130 amount of coverage required to be provided by paragraphs (b) and (i) of this Section, less the  
6131 amount of financial assurance obligation that is being provided by other financial assurance  
6132 mechanisms being used to demonstrate financial assurance by the owner, operator, or guarantor;

6133  
6134 (IV) Any bond may be canceled by the surety only after ninety  
6135 (90) days written notice to the Director, and upon receipt of the Director's written consent, which  
6136 may be granted only when the requirements of the irrevocable trust have been fulfilled; and

6137  
6138 (V) Irrevocable trust forfeiture proceedings shall occur only  
6139 after the Department provides notice to the owner or operator and trustee pursuant to W.S. 35-  
6140 11-701 that a violation exists and the Environmental Quality Council has approved the request of  
6141 the Director to begin forfeiture proceedings.

6142  
6143 (iii) Owners or operators that propose to demonstrate financial assurance with  
6144 irrevocable letters of credit shall meet the following conditions:

6145  
6146 (A) The irrevocable letter of credit shall be payable to the Department  
6147 in part or in full upon demand and receipt from the Director of a notice of forfeiture issued in  
6148 accordance with paragraph (t) of this Section;

6149  
6150 (B) The irrevocable letter of credit shall not be in excess of ten percent  
6151 of the issuing or supporting bank’s capital surplus account as shown on a balance sheet liabilities  
6152 certified by a certified public accountant;

6153  
6154 (C) The Director shall not accept standby letters of credit;

6155  
6156 (D) The Director shall not accept letters of credit from a bank for any  
6157 person, on all permits held by that person, in excess of the limitations imposed by W.S. §13-3-  
6158 402; and

6159  
6160 (E) The irrevocable letter of credit shall provide that:

6161  
6162 (I) The bank will give prompt notice to the owner or operator  
6163 and the Director of any notice received or action filed alleging the insolvency or bankruptcy of  
6164 the bank or alleging any violations of regulatory requirements that could result in suspension or  
6165 revocation of the bank's charter or license to do business;

6166  
6167 (II) In the event the bank becomes unable to fulfill its  
6168 obligations under the letter of credit for any reason, notice shall be given immediately to the  
6169 owner or operator and the Director; and

6170

6171 (III) Upon the incapacity of a bank by reason of bankruptcy,  
6172 insolvency, or suspension or revocation of its charter or license, the owner or operator shall be  
6173 deemed to be without performance bond coverage in violation of the Act. The Director shall  
6174 issue a notice of violation against any owner or operator who is without bond coverage,  
6175 specifying a reasonable period to replace bond coverage, not to exceed ninety (90) days. During  
6176 this period the Director or the Director's designated representative shall conduct weekly  
6177 inspections to ensure continuing compliance with other permit requirements, the regulations and  
6178 the Act. If the notice is not abated in accordance with the schedule, a cessation order shall be  
6179 issued.

6180  
6181 (IV) The irrevocable letter of credit may be cancelled by the  
6182 surety only after ninety (90) days notice to the Director, and upon receipt of the Director's  
6183 written consent, which may be granted only when the requirements of the bond have been  
6184 fulfilled.

6185  
6186 (F) The irrevocable letter may only be issued by a bank organized to  
6187 do business in the U.S. that identifies by name, address, and telephone number an agent upon  
6188 whom any process, notice or demand required or permitted by law to be served upon the bank  
6189 may be served.

6190  
6191 (I) If the bank fails to appoint or maintain an agent in this  
6192 State, or whenever any such agent cannot be reasonably found, then the Director shall be an  
6193 agent for such bank upon whom any process, notice or demand may be served for the purpose of  
6194 this Chapter. In the event of any such process, the Director shall immediately cause one copy of  
6195 such process, notice or demand to be forwarded by registered mail to the bank at its principal  
6196 place of business. The Director shall keep a record of all processes, notices, or demands served  
6197 upon him under this paragraph, and shall record therein the time of such service and his action  
6198 with reference thereto.

6199  
6200 (II) Nothing herein contained shall limit or affect the right to  
6201 serve any process, notice or demand required or permitted by law to be served upon the bank in  
6202 any other manner now or hereafter permitted by law.

6203  
6204 ~~(formerly Section 19(1))(h)~~ The owner or operator must shall maintain financial  
6205 responsibility and resources until; the administrator receives and approves the completed post-  
6206 injection site care and site closure plan and the administrator approves site closure.

6207  
6208 (i) The Administrator receives the site closure report and certifies site  
6209 closure.

6210  
6211 (A) When the conditions of W.S. § 35-11-313(f)(vi)(F) have been met,  
6212 the owner or operator may submit a written request to the Administrator to release the retained  
6213 financial assurance instruments; and

6214  
6215 (B) The Administrator shall evaluate the request within sixty (60) days  
6216 of the receipt of the financial assurance release request.

6217  
6218 (I) If the Administrator finds the owner or operator has  
6219 demonstrated the requirements of W.S. § 35-11-313(f)(vi)(F) have been met, the Administrator  
6220 shall prepare a draft recommendation to the Director to approve the request and provide public  
6221 notice pursuant to Section 27 of this Chapter.

6222  
6223 (II) Re-submittal of information by an operator for an  
6224 incomplete demonstration of the requirements of W.S. § 35-11-313(f)(vi)(F) will restart the  
6225 process described in this subsection.

6226  
6227 (III) If the Administrator finds the owner or operator has not  
6228 demonstrated the requirements of W.S. § 35-11-313(f)(vi)(F) have been met, the Administrator  
6229 shall prepare a draft recommendation to the Director to deny the request.

6230  
6231 (C) After receiving public comment and holding a hearing (if a hearing  
6232 is held) pursuant to Section 27 of this Chapter, the Director shall determine whether the operator  
6233 has demonstrated the requirements of W.S. § 35-11-313(f)(vi)(F) have been met.

6234  
6235 (I) If the Director finds the owner or operator has  
6236 demonstrated the requirements of W.S. § 35-11-313(f)(vi)(F) have been met, the Director shall  
6237 notify the owner or operator and request the State Treasurer to release that portion of the final  
6238 financial assurance instruments. The State Treasurer shall then return the financial assurance  
6239 instruments constituting that portion of the financial assurance so retained.

6240  
6241 (II) If the Director finds the owner or operator has not  
6242 demonstrated the requirements of W.S. § 35-11-313(f)(vi)(F) have been met, the Director shall  
6243 notify the owner or operator by registered mail within a reasonable time after the request is filed.  
6244 The notice shall state the reasons for denial and shall recommend corrective actions.

6245  
6246 ~~formerly Section 19(n)(ii)~~ The owner or operator ~~may be~~ meets the requirements for  
6247 ~~released~~ release from a financial instrument in the following circumstances:

6248  
6249 ~~formerly Section 19(n)(i)(A)~~ The owner or operator has completed the  
6250 phase of the geologic sequestration project for which the financial instrument was required and  
6251 has fulfilled all its financial obligations as determined by the ~~Administrator~~ Director, including  
6252 obtaining financial responsibility for the next phase of the geologic sequestration project, if  
6253 required~~;~~;

6254  
6255 ~~formerly Section 19(n)(ii)(B)~~ The owner or operator has submitted a  
6256 replacement financial instrument and received written approval from the ~~Administrator~~ Director  
6257 accepting the new financial instrument and releasing the owner or operator from the previous  
6258 financial instrument~~;~~; or

6259  
6260 ~~formerly Section 19(n)(iii)(C)~~ The owner or operator has submitted a  
6261 revised financial assurance cost estimate for the remaining phases of the geologic sequestration  
6262 project. The revised financial assurance cost estimate may demonstrate that a partial release of

6263 the financial instrument is warranted and ~~can~~ will still provide adequate financial assurance for  
6264 the remainder of the geologic sequestration project. Partial release of the financial instrument is  
6265 at the discretion of the ~~Administrator~~ Director.

6266  
6267 ~~formerly Section 19(e)(i)~~ Within a reasonable time following certification of site  
6268 closure by the Administrator, plume stabilization, the completion of all remediation work, and  
6269 release of all other financial assurance instruments, the owner or operator shall submit a  
6270 proposed cost estimate for measurement, monitoring, and verification of plume stabilization.  
6271 ~~Following the release of all financial assurance and receipt of a site closure certificate, t~~The  
6272 ~~Administrator must~~ shall ~~approve~~ evaluate and determine whether the proposed cost estimate  
6273 ~~prepared for the post-closure measurement, monitoring and verification of a geologic~~  
6274 ~~sequestration site is adequate.~~ The cost estimate shall only be provided after plume stabilization  
6275 ~~and all remediation work has been completed.~~

6276  
6277 ~~formerly Section 19(m)(j)~~ The owner or operator ~~must~~ shall notify the ~~Administrator~~  
6278 Director by certified mail of adverse financial conditions, such as bankruptcy, that may affect ~~the~~  
6279 its ability to ~~carry out~~ complete injection well-plugging and post-injection site care and site  
6280 closure.

6281  
6282 ~~formerly Section 19(m)(i)(i)~~ In the event that the owner or operator or the third  
6283 ~~party provider of a financial responsibility instrument is going through a bankruptcy, t~~The owner  
6284 or operator ~~must~~ shall notify the ~~Administrator~~ Director by certified mail of the commencement  
6285 of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming the  
6286 owner or operator or the third-party provider of a financial responsibility instrument as debtor,  
6287 within ten (10) days after commencement of the proceeding.

6288  
6289 ~~formerly Section 19(m)(iii)(ii)~~ An owner or operator who fulfills the  
6290 requirements of ~~paragraph (g) of this s~~Section by obtaining ~~a~~ an irrevocable trust fund, surety  
6291 bond, or irrevocable letter of credit, ~~escrow account, or insurance policy will~~ shall be deemed to  
6292 be without the required financial assurance in the event of: ~~bankruptcy of the trustee or issuing~~  
6293 ~~institution, or a suspension or revocation of the authority of the trustee institution to act as trustee~~  
6294 ~~of the institution issuing the trust fund, surety bond, letter of credit, escrow account, or insurance~~  
6295 ~~policy, The owner or operator must establish other financial assurance within sixty (60) days~~  
6296 ~~after such an event.~~

6297  
6298 ~~formerly Section 19(m)(iii)(A)~~ bBankruptcy of the trustee or issuing  
6299 institution;

6300  
6301 ~~formerly Section 19(m)(iii)(B)~~ or a A suspension or revocation of  
6302 the authority of the trustee institution to act as trustee of the institution issuing the irrevocable  
6303 trust fund, surety bond, or irrevocable letter of credit; ~~escrow account, or insurance policy, or~~

6304  
6305 ~~formerly Section 19(m)(iii)(C)~~ If the license to do business in  
6306 Wyoming of the surety issuing financial assurance is suspended or revoked.

6307  
6308 ~~formerly Section 19(m)(iii)(iii)~~ Within sixty (60) days after such an event

6309 ~~The~~ owner or operator ~~must~~ shall establish other financial assurance ~~within sixty (60) days after~~  
6310 ~~such an event~~ that meets the requirements of paragraphs (c), (d), (e), (f), and (g) of this Section.

6311  
6312 (k) The Department shall conduct bond forfeiture proceedings pursuant to W.S. § 35-  
6313 11-421. If the forfeited financial assurance instrument is inadequate to cover the costs of the  
6314 closure, mitigation, reclamation, measurement, monitoring, verification, and pollution control,  
6315 the Department may request that the Attorney General bring suit to recover costs against the  
6316 owner, operator, or permittee.

6317  
6318 ~~(formerly Section 5(g))(l) An applicant applying for a Class VI well permit must~~ The  
6319 owner or operator shall obtain and maintain public liability insurance to cover the for a geologic  
6320 sequestration activities for which a permit is sought project.

6321  
6322 ~~(formerly Section 5(g)(i))(i) The public liability insurance policy shall be in~~  
6323 ~~addition to the financial assurance required in Section 19 of this chapter.;~~

6324  
6325 ~~(formerly Section 5(g)(ii))(A) The insurance policy shall provide for~~  
6326 ~~personal injury and property damage protection and shall be in place until a completion and~~  
6327 ~~release certificate has been obtained from the Administrator certifying that plume stabilization~~  
6328 ~~has been achieved. Include coverage for the major risks identified in Appendix A to this Chapter;~~

6329  
6330 (B) Provide minimum coverage that:

6331  
6332 (I) Accounts for site-specific risk factor and bond adjustment  
6333 factor calculations, based on the previous year's information; and

6334  
6335 ~~(formerly Section 5(g)(iii))(II) The minimum insurance~~  
6336 ~~coverage for public liability insurance as required by W.S. § 35-11-313(f)(ii)(O) shall be five~~  
6337 ~~hundred thousand dollars (\$500,000) for each occurrence of bodily injury or property damage,~~  
6338 ~~and one million dollars (\$1,000,000) aggregate. Is at least \$15 million per occurrence with an~~  
6339 ~~annual aggregate of at least \$45 million, exclusive of legal defense costs; and~~

6340  
6341 ~~(formerly Section 5(g)(iv))(C) The public liability insurance shall~~  
6342 ~~include a rider that requires that the insurer to notify the Administrator whenever substantive~~  
6343 ~~changes are made to the policy, including any termination or failure to renew.~~

6344  
6345 (ii) The owner or operator shall recalculate the minimum coverage amount of  
6346 the public liability insurance policy annually and at the same time that the owner or operator  
6347 updates the financial assurance cost estimate pursuant to paragraph (b) of this Section. The  
6348 owner or operator shall submit a copy of the current public liability insurance policy annually  
6349 and at the same time that the owner or operator submits an updated financial assurance cost  
6350 estimate pursuant to subparagraph (b)(viii) of this Section.

6351  
6352 ~~(formerly Section 5(g)(ii))(iii) The owner or operator shall maintain the~~  
6353 ~~public liability insurance policy shall provide for personal injury and property damage protection~~

6354 ~~and shall be in place until a completion and release certificate has been obtained from~~ until the  
6355 Administrator ~~certifying~~ certifies that plume stabilization has been achieved.

6356

6357 **Section 27. Public Participation, Public Notice and Public Hearing Requirements.**

6358

6359 ~~(formerly Section 20(a))(a)~~ (a) The Administrator shall give public notice if a draft permit  
6360 has been prepared, after receiving a financial assurance release request pursuant to Section  
6361 26(h)(i)(A) of this Chapter and finding the operator has met the requirements of W.S. 35-11-  
6362 313(f)(vi)(F), or if a hearing has been scheduled.

6363

6364 ~~(formerly Section 20(b))(i)~~ (i) Public notice of the preparation of a draft permit  
6365 shall allow at least sixty (60) days for public comment.

6366

6367 ~~(formerly Section 20(b))(ii)~~ (ii) Public notice of a ~~public~~ hearing or  
6368 recommendation to release financial assurance after certifying site closure shall be given at least  
6369 thirty (30) days before the hearing.

6370

6371 ~~(formerly Section 20(b))(iii)~~ (iii) Public notice of ~~the~~ a hearing may be given at the  
6372 same time as public notice of the draft permit or of a draft recommendation to release financial  
6373 assurance after certifying site closure, and the two notices may be combined.

6374

6375 ~~(formerly Section 20(e))(b)~~ (b) Public notice shall be given by:

6376

6377 ~~(formerly Section 20(e)(i))(i)~~ (i) Mailing-Providing a copy of the notice, a copy of  
6378 the fact sheet, the permit application (if any), and the draft permit (if any) to the following  
6379 persons:

6380

6381 ~~(formerly Section 20(e)(i)(A))(A)~~ (A) The applicant, by certified or  
6382 registered mail;

6383

6384 ~~(formerly Section 20(e)(i)(B))(B)~~ (B) The U.S. Environmental Protection  
6385 Agency, Region 8 Drinking Water Program, by mail;

6386

6387 ~~(formerly Section 20(e)(i)(C))(C)~~ (C) The U.S. Environmental Protection  
6388 Agency, Underground Injection Control Program, by mail;

6389

6390 ~~(formerly Section 20(e)(i)(D))(D)~~ (D) Wyoming Game and Fish  
6391 Department;

6392

6393 ~~(formerly Section 20(e)(i)(E))(E)~~ (E) Wyoming State Engineer;

6394

6395 ~~(formerly Section 20(e)(i)(F))(F)~~ (F) State Historical Preservation Officer;

6396

6397 ~~(formerly Section 20(e)(i)(G))(G)~~ (G) Wyoming Oil and Gas Conservation  
6398 Commission;

6399

6400 ~~(formerly Section 20(e)(i)(H))~~(H) Wyoming Department of  
6401 Environmental Quality, Land Quality Division;  
6402  
6403 ~~(formerly Section 20(e)(i)(I))~~(I) Wyoming State Geological Survey;  
6404  
6405 ~~(formerly Section 20(e)(i)(J))~~(J) Wyoming Water Development  
6406 Office;  
6407  
6408 ~~(formerly Section 20(e)(i)(K))~~(K) Wyoming Department of  
6409 Environmental Quality, Air Quality Division;  
6410  
6411 ~~(formerly Section 20(e)(i)(L))~~(L) Wyoming Department of  
6412 Environmental Quality, Solid and Hazardous Waste Division; and  
6413  
6414 ~~(formerly Section 20(e)(i)(M))~~(M) U.S. Army Corps of Engineers;  
6415  
6416 (N) Federal agencies with jurisdiction over fish, shellfish, and wildlife  
6417 resources and over coastal zone management plans;  
6418  
6419 (O) The Advisory Council on Historic Preservation;  
6420  
6421 (P) Any Tribes with Indian reservations and Indian lands identified  
6422 pursuant to Sections 10(b)(v) and 10(b)(ix)(A)(VII) of this Chapter;  
6423  
6424 ~~(formerly Section 20(e)(i)(N))~~(Q) Persons on the mailing list developed  
6425 by the Department, including those who request in writing to be on the list and ~~by soliciting~~  
6426 participants in ~~public~~ hearings in that area ~~for their interest in being included~~ who request to be  
6427 on “area” mailing lists; and  
6428  
6429 ~~(formerly Section 20(e)(i)(O))~~(R) Any unit of local government having  
6430 jurisdiction over the area where the facility is proposed to be located.  
6431  
6432 ~~(formerly Section 20(e)(ii))~~(ii) ~~Publication of~~ Publishing the notice in a  
6433 newspaper of general circulation in the location of the facility or operation; and  
6434  
6435 ~~(formerly Section 20(e)(iii))~~(iii) At the discretion of the Administrator, any  
6436 other method reasonably expected to give actual notice of the proposed action ~~in question~~ to the  
6437 persons potentially affected by it, including press releases or any other forum or medium to elicit  
6438 public participation.  
6439  
6440 ~~(formerly Section 20(d))~~(c) All public notices issued under this chapter shall contain  
6441 the following minimum information:  
6442  
6443 ~~(formerly Section 20(d)(i))~~(i) Name and address of the Department;  
6444

6445 ~~(formerly Section 20(d)(ii))~~(ii) Name and address of the owner, operator,  
6446 permittee, or permit applicant, and, if different, of the facility or activity regulated by the permit;

6447  
6448 ~~(formerly Section 20(d)(iii))~~(iii) A brief description of the business  
6449 conducted at the facility or activity described in the permit application, ~~or described in~~ the draft  
6450 permit, or subject to regulation under this Chapter;

6451  
6452 ~~(formerly Section 20(d)(iv))~~(iv) The type and quantity of wastes, fluids, or  
6453 pollutants that are proposed to be or are being treated, stored, disposed of, injected, emitted, or  
6454 discharged;

6455  
6456 ~~(formerly Section 20(d)(v))~~(v) A brief summary of the basis for the draft  
6457 permit conditions, including references to applicable statutory or regulatory provisions;

6458  
6459 ~~(formerly Section 20(d)(vi))~~(vi) Reasons why any requested variances or  
6460 alternatives to required standards do or do not appear justified;

6461  
6462 ~~(formerly Section 20(d)(vii))~~(vii) Name, address and telephone number of a  
6463 person from whom interested persons may obtain further information, including copies of the  
6464 draft permit, ~~as the case may be,~~ statement of basis, ~~or~~ fact sheet, and the application; and

6465  
6466 ~~(formerly Section 20(d)(viii))~~(viii) A brief description of comment procedures,  
6467 including;

6468  
6469 ~~(formerly Section 20(d)(viii)(A))~~(A) Procedures to request a hearing;

6470  
6471 ~~(formerly Section 20(d)(viii)(B))~~(B) The beginning and ending dates of  
6472 the comment period;

6473  
6474 ~~(formerly Section 20(d)(viii)(C))~~(C) The address where comments ~~will be~~  
6475 ~~received~~ may be submitted; and

6476  
6477 ~~(formerly Section 20(d)(viii)(D))~~(D) Other procedures that the public may  
6478 use to participate in the final permit decision; ~~and~~

6479  
6480 ~~(formerly Section 20(e))~~(d) In addition to the information required in paragraph ~~(d))~~(c)  
6481 of this ~~s~~Section, any notice for ~~public~~ a hearing shall contain the following:

6482  
6483 ~~(formerly Section 20(e)(i))~~(i) Reference to the date of previous public notices  
6484 relating to the permit;

6485  
6486 ~~(formerly Section 20(e)(ii))~~(ii) Date, time, and place of hearing; and

6487  
6488 ~~(formerly Section 20(e)(iii))~~(iii) A brief description of the nature and purpose  
6489 of the hearing, including applicable rules and procedures.

6490

6491 ~~(formerly Section 20(f))(e)~~ The Department shall provide an opportunity for the  
6492 applicant, permittee, owner, operator, or any interested person to submit written comments  
6493 regarding any aspect of a permit or to request a ~~public~~ hearing.

6494  
6495 ~~(formerly Section 20(g))(i)~~ During the public comment period, any interested  
6496 person may submit written comments on the draft permit and may request a ~~public~~ hearing.  
6497 Requests for ~~public~~ hearings ~~must~~ shall be made in writing to the Administrator and shall state  
6498 the reasons for the request.

6499  
6500 ~~(formerly Section 20(h))(ii)~~ The Administrator shall hold a hearing whenever  
6501 the Administrator finds, on the basis of requests, a significant degree of public interest in a draft  
6502 permit.

6503  
6504 ~~(formerly Section 20(h))(iii)~~ The Administrator ~~has the discretion to~~ may hold a  
6505 hearing whenever ~~such~~ a hearing may clarify issues involved in a permit decision.

6506  
6507 ~~(formerly Section 20(i))(iv)~~ The public comment period shall automatically  
6508 extend to the close of any ~~public~~ hearing. The Administrator may also extend the comment  
6509 period by so stating at the ~~public~~ hearing.

6510  
6511 ~~(formerly Section 20(j))(f)~~ The Administrator shall render a decision on the draft  
6512 permit within sixty (60) days after ~~the~~ completion of the public comment period if no hearing is  
6513 ~~requested held~~. If a hearing is held, the Administrator shall make a decision on any Department  
6514 hearing as soon as practicable after receipt of the transcript or after the expiration of the time set  
6515 to receive written comments.

6516  
6517 ~~(formerly Section 20(k))(g)~~ At the time a final decision is issued, the Department shall  
6518 respond; in writing; to ~~those~~ comments received during the public comment period or ~~comments~~  
6519 ~~received~~ during the ~~allotted time for a~~ hearing held by the Department. This response shall:

6520  
6521 ~~(formerly Section 20(k)(i))(i)~~ Specify any changes that have been made to the  
6522 permit and the reasons for the changes; and

6523  
6524 ~~(formerly Section 20(k)(i))(ii)~~ Briefly describe and respond to all  
6525 comments ~~voicing~~ stating a technical or regulatory concern that is within the authority of the  
6526 Department to regulate.

6527  
6528 **Section 28. Incorporation by Reference.**

6529  
6530 (a) These rules incorporate by reference the following statutes, rules, and regulations  
6531 in effect as of July 1, 2020:

6532  
6533 (i) 10 C.F.R. Part 20, Appendix B, Table II, Column 2, available at  
6534 <http://www.ecfr.gov>;

6535  
6536 (ii) 40 C.F.R. §§ 98.440 to 98.449, , available at <http://www.ecfr.gov>;

- 6537  
6538 (iii) 40 C.F.R. § 141, Subparts E, F, and G, available at: <http://www.ecfr.gov>;  
6539  
6540 (iv) 40 C.F.R. § 261.3-available at: <http://www.ecfr.gov>;  
6541  
6542 (v) American Petroleum Institute Recommended Practice, API RP 14C,  
6543 Recommended Practice for Analysis, Design, Installation and Testing of Safety Systems for  
6544 Offshore Production Facilities, Recommended Practice 14C, (2018), referred to as “API RP  
6545 14C”, available at [https://www.apiwebstore.org/publications/item.cgi?af9eaacd-f8b0-4d7c-bfa7-](https://www.apiwebstore.org/publications/item.cgi?af9eaacd-f8b0-4d7c-bfa7-2c39a409f892)  
6546 [2c39a409f892](https://www.apiwebstore.org/publications/item.cgi?af9eaacd-f8b0-4d7c-bfa7-2c39a409f892);  
6547  
6548 (vi) American Petroleum Institute Specification, API Spec 10A, Specification  
6549 for Cements and Materials for Well Cementing, 25th Edition, (2019), referred to as “API  
6550 Specification 10A”, available at [https://www.apiwebstore.org/publications/item.cgi?82493435-](https://www.apiwebstore.org/publications/item.cgi?82493435-f281-45d8-af82-07ad8131cb56)  
6551 [f281-45d8-af82-07ad8131cb56](https://www.apiwebstore.org/publications/item.cgi?82493435-f281-45d8-af82-07ad8131cb56);  
6552  
6553 (vii) American Petroleum Institute Recommended Practice, API RP 10D-2,  
6554 Centralizer Placement and Stop-collar Testing, (2020), referred to as “API RP 10D-2”, available  
6555 at <https://www.apiwebstore.org/publications/item.cgi?7ad6705a-954e-476c-b520-47cbbdce9f06>;  
6556  
6557 (viii) American Petroleum Institute Recommended Practice, API RP 10B-2,  
6558 Recommended Practice for Testing Well Cements, (2019), referred to as “API RP 10B-2”,  
6559 available at [https://www.apiwebstore.org/publications/item.cgi?3c1808c7-6312-4b8d-b3de-](https://www.apiwebstore.org/publications/item.cgi?3c1808c7-6312-4b8d-b3de-291ef79704c5)  
6560 [291ef79704c5](https://www.apiwebstore.org/publications/item.cgi?3c1808c7-6312-4b8d-b3de-291ef79704c5);  
6561  
6562 (ix) American Petroleum Institute Recommended Practice, API RP 14B,  
6563 Design, Installation, Repair, and Operation of Subsurface Safety Valve Systems, (2012), referred  
6564 to as “API RP 14 B”, available at [https://www.apiwebstore.org/publications/item.cgi?a1711f10-](https://www.apiwebstore.org/publications/item.cgi?a1711f10-0121-4c12-936c-471c97a19f93)  
6565 [0121-4c12-936c-471c97a19f93](https://www.apiwebstore.org/publications/item.cgi?a1711f10-0121-4c12-936c-471c97a19f93);  
6566  
6567 (x) American Petroleum Institute Specification, API Spec 5CT, Specification  
6568 for Casing and Tubing, (2019), referred to as “API Specification 5CT”, available at  
6569 <https://www.apiwebstore.org/publications/item.cgi?5b345884-5a3a-4889-8066-60f93e467f29>;  
6570  
6571 (xi) American Petroleum Institute Recommended Practice, API RP 5C1,  
6572 Recommended Practices for Care and Use of Casing and Tubing, (2020), referred to as “API RP  
6573 5C1”, available at [https://www.apiwebstore.org/publications/item.cgi?010058af-29b1-412c-](https://www.apiwebstore.org/publications/item.cgi?010058af-29b1-412c-b892-ec3e5583c534)  
6574 [b892-ec3e5583c534](https://www.apiwebstore.org/publications/item.cgi?010058af-29b1-412c-b892-ec3e5583c534); and  
6575  
6576 (xii) American Petroleum Institute Specification, API Spec 11D1, Packers and  
6577 Bridge Plugs, (2015), referred to as “API Specification 11D1”, available at  
6578 <https://www.apiwebstore.org/publications/item.cgi?4828a454-0fea-451b-a61b-18304836ea91>.  
6579  
6580 (b) For these rules incorporated by reference:  
6581  
6582 (i) The Environmental Quality Council has determined that incorporation of

6583 the full text in these rules would be cumbersome or inefficient given the length or nature of the  
6584 rules;

6585  
6586 (ii) This Chapter does not incorporate later amendments or editions of  
6587 incorporated codes, standards, rules, and regulations; and

6588  
6589 (iii) All incorporated codes, standards, rules, and regulations are available for  
6590 public inspection at the Department's Cheyenne office. Contact information for the Cheyenne  
6591 office may be obtained at <http://deq.wyoming.gov> or from (307) 777-7937.

6592  
6593

## Appendix A. Risk Activity Table

	<b>Major Risk (Feature, Event, or Process)</b>
<b>1</b>	<b>Mineral Rights Infringement (Trespass)</b>
1.1	Leakage migrates into mineral zone or hydraulic front impacts recoverable mineral zone; causes may include plume migration different than modeled.
1.2	Post injection discovery of recoverable minerals.
1.3	New technology (or economic conditions) enables recovery of previously un-economically recoverable minerals.
1.4	Act of God (e.g. seismic event).
1.5	Formation fluid impact due to CO <sub>2</sub> injection.
1.6	Address also contributing causes 3.1, 3.2, 3.3, 3.5, 4.3, and 4.4
<b>2</b>	<b>Water Quality Contamination</b>
2.1	Leakage of CO <sub>2</sub> outside permitted area.
2.2	Leakage of drilling fluid contaminates potable water aquifer.
2.3	Rock/acid water (i.e. geochemistry) interaction contaminates potable water by carryover of dissolved contaminants.
2.4	Act of God (e.g. seismic event).
2.5	Formation fluid impact due to CO <sub>2</sub> injection.
2.6	See also contributing causes 3.1, 3.2, 3.3, 3.5, 4.3, and 4.4
<b>3</b>	<b>Single Large Volume CO<sub>2</sub> Release to the Surface – Asphyxiation/Health/Ecological</b>
3.1	Overpressurization (i.e. induced).
3.2	Caprock/reservoir failure.
3.3	Well blowout (e.g. at surface or bore failure below ground), includes monitoring wells – Causes could include seal failure (e.g. well, drilling or injection equipment).
3.4	Major mechanical failure of distribution system or storage facilities above ground or below ground (i.e. near the surface).
3.5	Orphan well failure (e.g. well not identified prior to injection).
3.6	Sabotage/Terrorist attack (e.g. on surface infrastructure).
3.7	Act of God (e.g. major seismic event)
<b>4</b>	<b>Low Level CO<sub>2</sub> Release to Surface – Ecological damage due to low-level releases; potential asphyxiation of human or ecological receptors</b>
4.1	Overpressurization (i.e. induced).
4.2	Caprock/reservoir failure (e.g. Plume migrates along fault line/fissure to surface).
4.3	Incomplete geological seal (e.g. inaccurate characterization of sub-surface geology).
4.4	Well seal failure (e.g. well, drilling or injection equipment) including monitor wells
4.5	Mechanical failure of distribution system or storage facilities above or below ground (e.g. near surface).
4.6	Orphan wells (e.g. well not identified prior to injection).
4.7	Induced seismicity leading to leakage.
4.8	Act of God (e.g. seismic event).

**Risk Activity Table (continued)**

	<b>Major Risk (Feature, Event, or Process)</b>
<b>5</b>	<b>Storage Rights Infringement (CO<sub>2</sub> or other entrained contaminant gases) – Form of Mineral Rights Infringement</b>
5.1	Leakage migrates into adjacent pore space; causes may include plume migrates faster than modeled.
5.2	Post injection decision (e.g. due to new technology or changed economic conditions) to store gas in adjacent pore space.
5.3	Acts of God affecting storage capacity of pore space.
5.4	Formation fluid impact due to CO <sub>2</sub> injection.
5.5	Will also require primary contributing causes 3.1, 3.2, 3.3, 3.5, 4.3, and 4.4
<b>6</b>	<b>Modified Surface Topography (subsidence or uplift) Resulting in Property/Infrastructure Damage</b>
6.1	Induced Seismicity – Pressure from geochemistry induced reactivation of historic fault or dissolution of material caused by subsidence.
6.2	Formation fluid impact due to CO <sub>2</sub> injection.
<b>7</b>	<b>Entrained Contaminant (Non-CO<sub>2</sub>) Releases</b>
7.1	Change in CO <sub>2</sub> composition/properties (e.g. concentration of contaminate in CO <sub>2</sub> supply increases).
7.2	Microbial activity initiated by injection process or composition.
	Will also require primary contributing causes 3.1, 3.2, 3.3, 3.5, 4.3, and 4.4
<b>8</b>	<b>Accidents/Unplanned Events (Typical Insurable Events)</b>
8.1	Surface infrastructure damage
8.2	Saline water releases from surface storage impoundment.