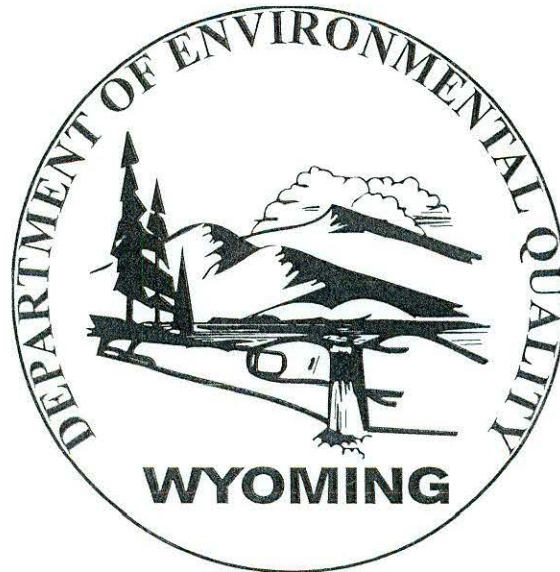


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JUL 08 2013

Wyoming
Surface Water Quality Standards

Jim Ruby, Executive Secretary
Environmental Quality Council



Implementation Policies
for

Antidegradation
Mixing Zones and Dilution Allowances
Turbidity
Use Attainability Analysis

~~February, 2007~~ July 8, 2013

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1 | **ANTIDegradation Implementation Policy**
2 | **(Chapter 1, Section 8)**

3 |
4 | **Section 1. Purpose.** Section 8 of the Wyoming Surface Water Quality Standards for
5 | ~~Wyoming Surface Waters~~ (Water Quality ~~Division~~ Rules and Regulations, Chapter 1) establishes
6 | a regulatory policy concerning antidegradation. Section 8 ~~That regulation~~ provides:--

7 |
8 | (a) *Water uses in existence on or after November 28, 1975 and the level of water*
9 | *quality necessary to protect those uses shall be maintained and protected. Those surface waters*
10 | *not designated as Class 1, but whose quality is better than the standards contained in these*
11 | *regulations, shall be maintained at that higher quality. However, after full intergovernmental*
12 | *coordination and public participation, the ~~Wyoming Department of Environmental Quality~~ may*
13 | *issue a permit for or allow any project or development which would constitute a new source of*
14 | *pollution, or an increased source of pollution, to these waters as long as the following conditions*
15 | *are met:*

16 | *(i) The quality is not lowered below these standards;*

17 | *(ii) All existing water uses are fully maintained and protected;*

18 | *(iii) The highest statutory and regulatory requirements for all new and existing*
19 | *point sources and all cost effective and reasonable best management practices for nonpoint*
20 | *sources have been achieved; and*

21 | *(iv) The lowered water quality is necessary to accommodate important*
22 | *economic or social development in the area in which the waters are located.*

23 | *(b) The Water Quality Administrator (administrator) may require an applicant to*
24 | *submit additional information, including, but not limited to, an analysis of alternatives to any*
25 | *proposed discharge and relevant economic information before making a determination under*
26 | *this section.*

27 | *(c) The procedures used to implement this section are described in the*
28 | *"Antidegradation Implementation Policy."*

29 | Antidegradation protection is one of the essential elements of the state surface water
30 | quality standards programs and is required under Section 303(d)(4)(B) of the ~~federal~~ Clean
31 | Water Act. The purpose of this implementation procedure is to disclose the decision-making and
32 | public participation processes that will be employed by the Water Quality Division in order to
33 | ensure compliance with ~~the requirements of~~ Section 8.

34 | A secondary purpose of this implementation ~~policy~~ is to ensure federal approval of the
35 | ~~State's Wyoming's~~ surface water quality standards. ~~Altho~~ugh ~~the State Wyoming~~ has the
36 | primary authority to establish standards, the U.S. EPA has a responsibility to ~~make a~~
37 | ~~determin~~ation of whether such standards ~~meet~~ will ~~achieve~~ the goals and requirements of the

46 | Clean Water federal Act. To a large extent, approval of the standards relies upon approval of an
47 | antidegradation implementation procedure.

48 |
49 | Section 2. Concepts~~H.~~— Water quality standards designate the uses which are
50 | protected on waters of the state and establish criteria that describe the maximum pollutant
51 | concentrations and other water quality conditions ~~that are~~ necessary to maintain those uses.
52 | Many waters in the state have an existing level of water quality that is better than the criteria
53 | established to support designated uses. The antidegradation requirements are designed to
54 | maintain water quality at the higher levels unless there are good reasons for lowering the water
55 | quality.

56 |
57 | The federal regulations (40 CFR 131.12) require state standards programs to address 3
58 | levels or “tiers” of antidegradation protection. “Tier 1” is the basic level of protection which
59 | applies to all waters. Waters which are afforded tier 1 protection ~~only~~ are waters not generally
60 | considered to be high quality, ~~or~~ are not currently supporting designated uses, or where
61 | assimilative capacity does not exist for parameters that would be affected by a proposed activity.

62 |
63 | “Tier 2” protections apply to high quality waters. These are waters which have an
64 | existing quality that is better than the established use-support criteria and where an assimilative
65 | capacity exists for parameters that would be affected by a proposed activity. Under tier 2, a
66 | lowering of water quality may be allowed if it is determined that the amount of degradation is
67 | insignificant or if the lowered water quality is necessary to accommodate important economic or
68 | social development in the area. Under no circumstances, however, may water quality be lowered
69 | below the criteria established in the standards or below a level that would impair an existing use.

70 |
71 | “Tier 3” protections apply to waters that constitute “outstanding national resource waters”
72 | (ONRWs)¹. Tier 3 requires maintenance of existing quality with no consideration of assimilative
73 | capacity or economic or social development. In certain circumstances, temporary lowering of
74 | water quality is allowable; however, the general rule is that no new point sources or increased
75 | pollutant loading from existing point sources is allowed~~able~~.

76 |
77 | The antidegradation implementation procedures that follow shall apply to the review of
78 | regulated activities involving new or increased discharges of pollution. Regulated activities
79 | include individual Wyoming Pollution Discharge Elimination System (WYPDES) effluent
80 | discharge permits, WYPDES storm water permits for industrial and construction activities and
81 | Section 401 water quality certifications. The procedure is organized starting with the highest
82 | level of protection applied to Class 1 waters to the basic minimum level applicable to all waters.

83 |

¹The Wyoming water quality protection program has no provision for designating waters that
have “national” significance; however, waters designated as Class 1 under the surface water standards are
considered to be outstanding resources. Though not designated as ONRWs, Class 1 waters are afforded a
level of antidegradation protection which is a functional equivalent of EPA’s tier 3 concept.

84 Section 3. Outstanding Aquatic Resources (Class 1 Waters) (Outstanding
85 Aquatic Resources). The qualification requirements for Class 1 waters are listed in Chapter 1,
86 Water Quality Rules and Regulations, Section 4(a). In addition, the general categories of waters
87 (e.g., waters in national parks, etc.) and specific waters designated as Class 1 are listed in
88 Chapter 1, Appendix A of Chapter 1.

89
90 Class 1 waters are designated by the Environmental Quality Council in rulemaking
91 hearings. Both the Wyoming Administrative Procedures Act and the Department's Continuing
92 Planning Process (CPP) provide for public input during regulatory and planning processes.
93 Any interested person may nominate a water for Class 1 designation through the procedures
94 outlined in those documents.

95
96 (a) Point Source Discharges. The Wyoming surface water quality standards prohibit
97 new or increased "end-of-the-pipe"; effluent discharges of pollution to Class 1 waters but allow
98 limited discharges associated with storm water runoff and temporary discharges associated with
99 construction activities. Permits issued by the Department of Environmental Quality (DEQ) for
100 storm water or construction-related discharges will contain the following safeguards: (1)
101 changes in water quality will be limited to temporary increases in turbidity; (2) turbidity
102 increases will be limited to those allowed in Section 23 of Chapter 1, Section 23, unless a
103 temporary turbidity waiver as been granted by the administrator; and (3) necessary controls and
104 monitoring will be required to ensure existing water quality and uses are maintained and
105 protected.

106
107 Furthermore, the Department will impose whatever controls are necessary on
108 regulated point source discharges to tributaries of Class 1 waters to the extent that the existing
109 quality and uses of the downstream Class 1 segment will be protected and maintained. It is the
110 Department's interpretation that "tributary" means any waters feeding the mainstem and any
111 upstream mainstem segments.

112
113 The following procedures and decision-making processes will be used for each of
114 the Water Quality Division's discharge permitting authorizations on Class 1 waters:

115
116 (i) WYPDES; "End-of-the-Pipe" Permits. Permits for new or
117 increased effluent discharges to Class 1 waters will not be issued. This prohibition is not
118 intended to include temporary construction-related discharges or industrial storm water permits
119 for which effluent limits have been established where there is no reasonable potential for a
120 discharge of the associated effluent limitations.

121
122 (ii) WYPDES Storm Water Permits (Industrial Activities).

123
124 (A) Storm water permits for industrial activities may be issued with
125 appropriate conditions and monitoring requirements on an individual case-by-case basis on Class
126 1 waters. An application for an industrial storm water permit must contain:

128 | _____ (I1) a list of all pollutants which can reasonably be expected
129 | to occur on-site and be exposed to runoff events;

130

131 | _____ (II2) a map showing the location of the industrial facility in
132 | relation to the Class 1 receiving water and/or tributaries;

133

134 | _____ (III3) Water quality data that characterizes the existing quality
135 | of the receiving Class 1 water and/or its tributaries in relation to the potential on-site pollutants;

136

137 | _____ (IV4) a storm water pollution prevention plan that provides:

138

139 | _____ (a1.) Runoff from the industrial site resulting from up to
140 | a 100-year storm event will not discharge to a Class 1 water; or

141

142 | _____ (b2.) Runoff which may discharge to a Class 1 water as
143 | the result of any storm event will be of equal or better quality than the receiving water; and

144

145 | _____ (V5) a monitoring plan designed to ensure compliance with
146 | item (4IV).

147

148 | _____ (B)b. Prior to issuing an industrial storm water permit, the Department
149 | will make a determination based upon the information submitted in the application that the
150 | potential effects on the Class 1 receiving stream, if any, will be temporary in nature and limited
151 | to discharges of clean sediment and turbidity. The Department may also include any additional
152 | construction practices, treatment processes, monitoring and reporting requirements or other
153 | special conditions as may be necessary to achieve and demonstrate that existing water quality
154 | and uses will be maintained.

155

156 | _____ (C)e. The Department will conduct a 30-day public notice and
157 | comment period prior to the issuance of any industrial storm water permit on Class 1 waters
158 | disclosing its intent to issue a permit for industrial storm water discharges. Information received
159 | as a result of the public notice will be considered by the department DEQ and may affect the final
160 | determination regarding permit approval.

161

162 | _____ (D)d. Existing general storm water permits for industrial activities will
163 | remain in effect for the remainder of their terms. The reauthorization of these permits, however,
164 | is not guaranteed and will be subject to the provisions of the revised rule and the implementation
165 | policy described above.

166

167 | _____ (iii)3. WYPDES Storm Water Permits (Construction Activities);

168

169 | _____ (A)a. General storm water permits for construction activities may be
170 | issued with appropriate conditions and monitoring requirements on Class 1 waters. Public
171 | comment is solicited prior to establishment of general permits and at each subsequent renewal (at
172 | least once every five years). Small construction general permits (SCGP) cover construction

173 projects that disturb between one and five acres (includes sum of disturbed acres that are part of
174 a common plan of development or sale) and large construction general permits (LCGP) cover
175 construction projects that disturb five acres or more (includes sum of disturbed acres that are part
176 of a common plan of development or sale). The SCGP is a “no application” permit, where a
177 project is automatically covered when the operator complies with the provisions of the SCGP.
178 An application for a LCGP must contain ~~An application for a construction stormwater permit~~
179 must contain a Nnotice of intent (NOI) to discharge storm water prepared according to the
180 provisions of ~~Appendix B~~ of the Wyoming General ~~Stormwater~~ Permit to Discharge Storm
181 Water Associated with Large ~~for~~ Construction Activities. The applicant must submit along with
182 the NOI, a detailed storm water pollution prevention plan (SWPPP) ~~which that~~ includes
183 sufficient controls on all potential sources of pollution. The SWPPP ~~pollution prevention plan~~
184 must demonstrate that the only types of pollution that could reasonably be expected to reach a
185 Class 1 water during a runoff event are ~~limited to~~ turbidity and sediment. Although the SCGP
186 does not require an application, the requirements are generally identical to those in the LCGP.
187

188 (B)~~b~~. Runoff from ancillary, construction-related facilities such as
189 borrow areas, gravel processing areas, asphalt processing plants, concrete mixing, fuel and
190 solvent storage areas, equipment staging and maintenance areas, and any area which may be a
191 source of pollutants other than turbidity and sediment must be controlled so as not to discharge to
192 any Class 1 water. This provision applies to runoff resulting from up to a 100-year storm event.
193

194 (C)~~e~~. The dDepartment shall conduct an in-house review of the NOI and
195 pollution control plan prior to approving coverage under the LCGP ~~general stormwater permit~~.
196 The Department may also include any additional construction practices, monitoring and
197 reporting requirements, or other special conditions that ~~as~~ may be necessary to achieve and
198 demonstrate that existing water quality and uses will be maintained. Upon issuance, ~~the~~
199 department ~~DEQ~~ accepts comments on all general permit authorizations for a period of 30 days
200 following the authorization. Any aggrieved party may appeal an authorization under a general
201 permit pursuant to W.S. 35-11-801(d). Parties considering an appeal should provide comments
202 to the department ~~will not normally conduct a public notice and comment period prior to~~
203 authorizing specific activities under the stormwater general permit. Public comment was
204 solicited prior to the establishment of the general permit and public notice will be provided at
205 each subsequent renewal (at least once every five years). Upon review of any application for a
206 construction storm water permit, the dDepartment may also choose to deny authorization under
207 the general permit and require an individual permit. - In such instances, a 30-day public notice
208 will be conducted.
209

210 (b)4. Clean Water Act Section 401 Water Quality Certifications. This section e
211 Department adopted a policy on October 11, 1996 outlines procedures used by the department
212 regarding the issuance of 401 certifications for activities on Class 1 waters. This policy was
213 specifically designed to implement tier 3 antidegradation protections that ensure the protection of
214 existing quality and uses of Class 1 waters will be maintained and serves as the antidegradation
215 implementation procedure for activities subject to 401 certifications on Class 1 waters.
216 Certifications are required for federal licenses or permits to discharge and -include Section 404

217 permits issued by the U.S. Army Corps of Engineers and hydropower licenses issued by the
218 Federal Energy Regulatory Commission (FERC).

219
220 a. ~~— The following classes of construction activities are examples of what may be authorized~~
221 ~~on Class I waters:~~

222 ~~————— (1) — Habitat Restoration and Enhancement;~~

223
224 ~~(2) — Repair and Maintenance of Existing Structures;~~

225
226 ~~(3) — Road Construction and Maintenance;~~

227
228 ~~(4) — Utility Construction and Maintenance;~~

229
230 ~~(5) — Streambank Stabilization and Flood Control;~~

231
232 ~~(6) — Minor Recreational Facilities (boat docks, fishing piers, hiking trails etc.);~~

233
234 ~~(7) — Environmental Cleanup Activities; and~~

235
236 ~~(8) — Miscellaneous Development on Isolated Wetlands~~

237
238
239 b. ~~— Pursuant to the regulations, Chapter 1, Section 7, Certification must be denied on Class I~~
240 ~~waters for the following types of activities if the construction or operation of any new facilities~~
241 ~~will involve a point source effluent discharge or if the expansion of any existing facility will~~
242 ~~result in an increase of pollution from an existing discharge. Examples of facilities and activities~~
243 ~~that commonly involve discharges include wastewater treatment plants, power plants, food~~
244 ~~processing facilities, gravel processing operations, mining, oil production and refining, fish~~
245 ~~hatcheries, aquaculture, feedlots, etc.~~

246
247 ~~————— (i) e. Federal licenses or permits ~~Construction activities~~ can be certified by the~~
248 ~~department DEQ if activities authorized by the license or permit ~~they are designed to~~ meet the~~
249 ~~following general and activity-specific requirements:~~

250
251 ~~————— (A1) Any resultant water quality degradation shall be temporary and all~~
252 ~~potential negative effects cease at the end of the construction period;~~

253
254 ~~————— (B2) Potential contaminants are limited to turbidity and sediment.~~
255 ~~Increases in downstream turbidity are limited to 10 NTUs above the upstream condition at all~~
256 ~~times on streams that support cold water game fisheries and/or drinking water supplies and 15~~
257 ~~NTUs on streams that support warm water fisheries, unless a temporary turbidity waiver has~~
258 ~~been granted by the administrator. Sediment cannot be discharged in amounts that will adversely~~
259 ~~affect existing or designated beneficial uses as described in Chapter 1, Sections 15 and 16;~~

261 ~~_____ (C3) Long term or permanent degradation of stream channel~~
262 ~~stability integrity and aquatic habitat will is not occur preserved and maintained. Written~~
263 ~~concurrence from the Wyoming Game & Fish Dept. that aquatic habitat will not be degraded will~~
264 ~~be solicited;~~

265 _____
266 ~~(D4) Long-term or permanent degradation of aesthetic properties will~~
267 ~~not occur All existing uses are fully protected and maintained; and~~

268 ~~(5) Existing ambient conditions i.e. dissolved oxygen, pH or temperature are not degraded;~~
269 ~~and~~

270 _____
271 _____
272 ~~(E6) Process water from All construction activities (e.g. hydrostatic~~
273 ~~testing, gravel washing, etc.) must be designed and operated in such a manner that water from~~
274 ~~dewatering activities, hydrostatic testing of pipelines, gravel washing etc. so as will not to allow~~
275 ~~a surface discharge to a Class 1 water.~~

276 _____
277 ~~(ii)d. 401 Certification shall be denied for federal licenses or permits~~
278 ~~authorizing discharge to on Class 1 waters if any of the following applyies:~~

279 _____
280 ~~(A4) The activity project may results in degradation of water chemistry,~~
281 ~~or long-term or permanent loss or reduction of: channel stability, aquatic habitat, or a reduction~~
282 ~~in existing or designated beneficial uses;~~

283 _____
284 ~~(B2) The application does not contain nor can the certification be~~
285 ~~conditioned to provide reasonable assurance that turbidity can be controlled within the 10 NTU~~
286 ~~limit. Sediment will be discharged in amounts that settle to form sludge, bank or bottom~~
287 ~~deposits;~~

288 _____
289 ~~(3) Project may result in channel instability or significant loss of aquatic habitat. Written~~
290 ~~concurrence from the Game & Fish Dept. is not obtained;~~

291 _____
292 ~~(4) Project may result in a loss or reduction of beneficial uses;~~

293 _____
294 ~~(C5) Existing ambient conditions will be degraded by the activity; or~~

295 _____
296 ~~(D6) Any surface discharge of process water to a Class 1 water~~
297 ~~will occur.~~

298 _____
299 ~~(iii) The applicant may be asked to consider multiple reasonable alternatives~~
300 ~~for accomplishing the project objectives and justify the chosen alternative with consideration of~~
301 ~~environmental, economic and social factors. The chosen alternative may not have significant~~
302 ~~adverse affects to existing or designated uses.~~

303 _____
304 ~~(iv) Wyoming Game and Fish Department (WGFD) must be consulted for~~
305 ~~comments prior to certification of the activity. If evidence of consultation with WGFD is not~~

306 | provided with the application materials, the department may consult with WGFD on behalf of
307 | the applicant. Results of the consultation will be considered in the decision to approve, approve
308 | with conditions or deny certification;

309 |
310 | (v)e- In addition to the general requirements above, the following measures
311 | apply on an activity-specific basis on Class 1 waters:

312 |
313 | (A+) Aquatic Habitat Improvement Activities,:

314 |
315 | ~~(a) All projects must be supported by the Wyoming Game & Fish Department;~~

316 |
317 | ~~(bI) Projects shall maintain existing and designated uses and~~
318 | ~~should generally not be designed to trade/convert one habitat type/beneficial use to/for another~~
319 | ~~unless all aquatic habitat functions are; but all uses must be fully maintained; (e.g. instream~~
320 | ~~habitat structures may not impede movement of resident fish species; existing wetlands~~
321 | ~~may/should not be excavated or inundated to create deep water habitat/areas for fish; spawning,~~
322 | ~~rearing or feeding habitat may/or stream segments that serve as nursery areas or food sources~~
323 | ~~should not be converted to holding areas for adult fish);~~

324 |
325 | ~~(eII) Project plans must be based on sound scientific principles,~~
326 | ~~data and analyses that are commensurate with project complexity and risk of degradation/Special~~
327 | ~~consideration can be given for projects that are part of an approved watershed restoration plan or~~
328 | ~~wetland conservation plan; and~~

329 |
330 | ~~(dIII) The department shall/must use discretion and professional~~
331 | ~~judgment in determining whether existing and designated/beneficial uses will be degrad/impaired~~
332 | ~~in light of the overall project purposes and desired effects by the activity.~~

333 |
334 | ~~(B2) Repair/Maintenance Activities,:~~ Currently serviceable structures
335 | ~~may be/The repaired, rehabilitated/ion or replaced,ment of currently serviceable structures~~
336 | provided that the proposed work does not deviate from the original plans, purpose, or use of the
337 | structure and is acceptable if the general requirements for certification on Class 1 waters are met.

338 |
339 | ~~(C3) Streambed and Streambank Stabilization and Flood Control~~
340 | ~~Activities,:~~ Riprap, revetments, jetties-Streambank stabilization and flood control/other similar
341 | structures can be approved if the objectives/purpose of the project are/is to reduce existing
342 | environmental degradation, is necessary to protect human health and safety, or to prevent
343 | substantial loss of private property and does not significantly and adversely affect beneficial
344 | uses.

345 |
346 | ~~(4)——Roads, Utilities and Minor Recreational Activities:Existing facilities may be maintained~~
347 | ~~and new facilities constructed either as part of a public project or private development as long as~~
348 | ~~the general requirements for construction on Class 1 waters are met.~~

350 (ivD)f. Public Notice. ~~Individual 404 certifications are issued on all section 404~~
351 ~~permits including the U.S. Army Corps of Engineers' nationwide and statewide general permits~~
352 ~~on Class 1 waters, and hydropower licenses issued by the Federal Energy Regulatory~~
353 ~~Commission (FERC).~~ A joint WDEQ/Corps of Engineers public notice is issued by the Corps
354 prior to the issuance of all individual Section 404 permits. ~~There is no public notice prior to the~~
355 ~~authorization of any activity under a Section 404 nationwide or statewide general permit on~~
356 ~~Class 1 waters. The DEQ does not have a joint permitting agreement with FERC, therefore, The~~
357 ~~department~~ DEQ shall conduct a separate public notice and comment period prior to ~~issuing 404~~
358 ~~certifying~~ ation for all FERC or other federal licenses. With the exception of minor projects
359 with minimal effects, the department shall conduct a separate public notice and comment period
360 and prior to certifying all nationwide or regional general Section 404 permits on Class 1 waters.

361
362 (c)B. ~~Nonpoint Sources.~~ Nonpoint sources of pollution are not regulated by permits
363 issued by the dDepartment, but are controlled by the voluntary application of cost effective and
364 reasonable best management practices. For Class 1 waters, best management practices will
365 maintain existing quality and water uses.

366
367 Section 4. High Quality Waters —(Classes 2AB, 2A, 2B, and 2C).IV
368 A. —The antidegradation procedure under this part applies to the issuance of WYPDES
369 Effluent Permits, Stormwater Permits (Industrial & Construction Activities) and Section 404
370 Certifications of Activities Regulated by the Federal Energy Regulatory Commission (FERC).

371
372 Waters classified as 2AB, 2A, 2B or 2C are known to support populations of fish and/or drinking
373 water supplies and are considered to be high quality waters. The Water Quality Division may
374 issue a permit or certification for new or increased discharges to these waters upon making a
375 finding that the amount of resultant degradation is insignificant or that the discharge is necessary
376 to accommodate important economic or social development in the area where the waters are
377 located. The Ddepartment must also ensure that the highest statutory and regulatory
378 requirements for all new and existing point sources and all cost effective and reasonable best
379 management practices for nonpoint sources have been achieved. For purposes of antidegradation
380 implementation these may be referred to as "reviewable waters".

381
382 Where there are existing regulated point or nonpoint sources located in the area, the
383 Water Quality Division will ensure that compliance with the required controls has been or will
384 be achieved prior to authorizing the proposed regulated activity. This requirement is primarily
385 intended to ensure that proposed activities that will result in water quality degradation for a
386 particular parameter will not be authorized where there are existing unresolved compliance
387 problems involving the same parameter in the zone of influence of the proposed activity. The
388 "zone of influence" is determined as appropriate for the parameter of concern, the characteristics
389 of the receiving water (e.g. lake versus river, etc.); and other relevant factors. Where available, a
390 Total Maximum Daily Load (TMDL) analysis or other watershed-scale plan will be the basis for
391 identifying the appropriate zone of influence. The Water Quality Division may conclude that
392 such compliance has not been assured where existing sources are violating their WYPDES
393 permit requirements. However, the existence of schedules of compliance for purposes of
394 WYPDES permit requirements may be taken into consideration in such cases. In other words,

395 required controls on existing regulated sources need not be finally achieved prior to authorizing a
396 proposed activity provided there is reasonable assurance of future compliance.

397
398 (a) WYPDES Effluent Permits and Storm Water Permits (Industrial and Construction
399 Activities). The antidegradation review under this part consists of three sequential evaluations: ~~1. D~~
400 ~~1. D~~determination of significance; ~~2. e~~2. Economic evaluation; and ~~3. E~~3. Examination of alternatives.

401
402 (i) ~~1.~~ Determination of Significance.

403
404 (A) ~~a.~~ Based upon information submitted in an application for a water
405 quality permit ~~or certification~~, the Administrator shall make a determination of whether the
406 proposed discharge will result in a significant lowering of water quality with respect to adopted
407 numeric water quality criteria. The significance determination will be based on the chronic
408 numeric standard and flow for the pollutant of concern except for those pollutants which have
409 only acute numeric standards in which case the acute standard and flow will be used. S~~T~~his
410 significance determination shall be made with respect to the net effect of the new or increased
411 water quality impacts of the proposed activity, taking into account any environmental benefits
412 resulting from the activity and any water quality-enhancing mitigation measures impacting the
413 segment or segments under review, if such measures are incorporated with the proposed activity.
414 The activity shall be considered not to result in significant degradation; if:

415
416 (~~I~~) The activity may be permitted under a general permit
417 established by the state for discharges regulated under section 402 ~~or by the Corps of Engineers~~
418 ~~for discharges regulated under Section 404 of the Clean Water Act~~; or

419
420 (~~II~~) The new or increased loading from the source under review
421 is less than 10 percent of the existing total load to that segment for critical constituents (e.g.
422 those for which there are stream standards ~~set~~ and which are present in the discharge); ~~provided,~~
423 that the cumulative impact of increased loadings from all sources does not exceed 10 percent of
424 the baseline total load established for the segment (the baseline total load shall be determined at
425 the time of the first proposed new or increased water quality impacts to the reviewable waters-);
426 or

427
428 (~~III~~) The new or increased loading from the source under review
429 will consume, after mixing, less than 20 percent of the available increment between low flow
430 pollutant concentrations and the relevant standards (assimilative capacity), for critical
431 constituents; or

432
433 (~~IV~~) The activity will result in only temporary or short term
434 changes in water quality.

435
436 (B) ~~b.~~ If an activity is considered not to result in significant degradation,
437 no further review will be conducted. General WYPDES permits ~~and 401 certifications of~~
438 ~~general 404 permits~~ will be issued at this point. In the case of individual WYPDES permits, the
439 Water Quality Division shall prepare a draft permit and provide opportunity for public comment

440 | before the ~~WYPDES~~ permit is issued. Such public notices shall contain a statement describing
441 | the rationale for the determination of non-significance. If the permit is issued, the determination
442 | may be appealed to the Environmental Quality Council under the provisions of the Wyoming
443 | Administrative Procedures Act.

444 |
445 | ~~_____ (C)e-~~ If a determination is made that a proposed activity is likely to
446 | result in significant degradation of reviewable waters, an evaluation shall be made as to whether
447 | the degradation is necessary to accommodate important economic or social development in the
448 | area in which the waters are located.

449 |
450 | ~~_____ (ii)2-~~ Economic Evaluation. ~~The following provisions shall apply to this~~
451 | ~~determination.~~

452 |
453 | ~~_____ (A)a-~~ The "area in which the waters are located" shall be determined
454 | from the facts on a case-by-case basis. The area shall include all areas directly impacted by the
455 | proposed activity.

456 |
457 | ~~_____ (B)b-~~ A determination shall be made on the facts on a case-by-case basis
458 | whether the proposed activity is important economic or social development. If the applicant
459 | submits evidence that the activity is an important development, it shall be presumed important
460 | unless information to the contrary is submitted in the public review process. The determination
461 | shall take into account information received during the public comment period and shall give
462 | substantial weight to any applicable determinations by local governments or land use planning
463 | authorities.

464 |
465 | ~~_____ (C)e-~~ If the proposed activity is determined not to be important for
466 | economic or social development, authorization for the associated discharge(s) will be denied.

467 |
468 | ~~_____ (D)d-~~ If the proposed activity is determined to be important economic or
469 | social development, a determination shall be made whether the degradation that would result
470 | from such activity is necessary to accommodate that development.

471 |
472 | ~~_____ (iii)3-~~ Examination of Alternatives. The degradation shall be considered
473 | acceptable if there are no other water quality control alternatives available that:

474 |
475 | ~~_____ (A)a-~~ ~~w~~Would result in no degradation or less degradation of ~~the~~-state
476 | waters; and

477 |
478 | ~~_____ (B)b-~~ ~~a~~Are determined to be economically, environmentally, and
479 | technologically reasonable.

480 |
481 | ~~_____ (C)e-~~ ~~This d~~Determination of whether such alternatives are available,
482 | shall be based upon a reasonable level of analysis by the project proponent, consistent with
483 | accepted engineering practices, and ~~any~~ information submitted by the public or ~~which is~~
484 | otherwise available to the aAdministrator. The assessment shall, at a minimum, address practical

485 water quality control technologies, the feasibility and availability of which has been
486 demonstrated under field conditions similar to those of the activity under review. The scope of
487 alternatives considered shall be limited to those that would accomplish the proposed activity's
488 purpose.

489 _____ (D)d. In determining the economic reasonableness of water quality
490 control alternatives, the Administrator may use some of the following factors to weigh the
491 reasonableness of the various alternatives.
492

493
494 _____ (H) Whether the costs of the alternative significantly exceed the
495 costs of the proposal;

496
497 _____ (2II) For publicly owned treatment works (POTWs), whether
498 user charges resulting from the alternative would significantly exceed user charges for similarly
499 situated POTWs or public water supply projects;

500
501 _____ (3III) For any discharger into waters of the state, whether the
502 treatment alternative represents costs that significantly exceed costs for other similar dischargers
503 to similar stream classes, or standard industry practices.

504
505 _____ (4IV) Any other environmental benefits, unrelated to water
506 quality which may result from each of the alternatives examined.

507
508 _____ (E)e. Upon conclusion of the alternatives analysis, the Administrator
509 shall select a preferred alternative and prepare a draft permit and public notice proposing to
510 authorize the selected alternative. The selected alternative shall be the least degrading,
511 reasonable alternative consistent with the social and economic benefits. The public notice shall
512 contain a statement describing the results of the antidegradation review. If the permit is issued,
513 all administrative decisions relating to the antidegradation review or permit issuance may be
514 appealed to the Environmental Quality Council under the provisions of the Wyoming
515 Administrative Procedures Act.

516
517 _____ (b)B. Clean Water Act Section 401 Certifications. This section outlines procedures
518 used by the department to implement tier 2 antidegradation protections on high quality waters for
519 activities subject to 401 certifications. Certifications are required for federal licenses or permits
520 to discharge and include Section 404 permits issued by the Army Corps of Engineers and
521 hydropower licenses issued by the Federal Regulatory Commission (FERC).

522
523 _____ (i) Individual Section 404 Permits Issued by the U.S. Army Corps of
524 Engineers. Activities involving a discharge of dredged or fill materials that are considered to
525 have more than minor adverse affects on the aquatic environment are regulated by individual
526 Section 404 Permits. The decision making process relative to the 404 permitting program are
527 contained in the 404(b)(1) guidelines (40 CFR Part 230). Prior to issuing a permit under the
528 404(b)(1) guidelines, the Corps of Engineers must: (1) make a determination that the proposed
529 discharges are unavoidable (*i.e. necessary*); (2) examine alternatives to the proposed activity and

530 authorize only the least damaging practicable alternative; and (3) require mitigation for all
531 impacts associated with the activity. A 404(b)(1) findings document is produced as a result of
532 this procedure and is the basis for the permit decision. Public participation is also provided for in
533 this process.

534
535 ~~Because the 404(b)(1) guidelines contain all of the required elements of an antidegradation~~
536 ~~review, the department will not conduct a separate review for the same activity.~~ Section 401
537 certifications of individual 404 permits will rely upon the information contained in the 404(b)(1)
538 findings document. The department may add permit-specific conditions to a certification to
539 ensure tier 2 antidegradation protections are met. If all narrative and numeric water quality
540 criteria are likely to be met (with or without permit-specific conditions), certification will be
541 granted. If any narrative or numeric criterion will not be met, certification will be denied.

542
543 (ii) Certification of Nationwide and Regional General 404 Permits Issued by
544 the U.S. Army Corps of Engineers. Section 404 nationwide general permits are reissued by the
545 Corps every five years. At the time of reissuance, the department will review the permit to
546 determine if certification can be categorically granted or whether project-specific certification
547 review is necessary. The department may add conditions to the certifications that apply broadly
548 to all nationwide permits or add conditions that are permit-specific. When categorical
549 certification is granted for a specific permit (with or without permit-specific conditions), the
550 department considers the terms and conditions of the permit to fulfill the tier 2 antidegradation
551 provisions of Wyoming's Surface Water Quality Standards. If categorical certification is not
552 granted, a project-specific tier 2 antidegradation review will be conducted.

553
554 (iii) FERC and other federal licenses or permits. Certification is required for
555 any FERC or other federal license or permit that involves a discharge to a water of the US.
556 FERC or the applicable federal agency will submit a request for certification to the department.
557 The department shall conduct a separate public notice and comment period prior to certifying all
558 FERC or other federal licenses. The department may also add permit-specific conditions to the
559 certification to ensure tier 2 antidegradation protections are met.

560
561 (iv) For certification of FERC and other federal licenses or permits and
562 nationwide or regional general 404 permits (categorical or individual), the following
563 requirements must be met:

564
565 (A) Any significant water quality degradation and potential negative
566 effects shall be temporary and cease at the end of the project or following reclamation, if
567 applicable;

568
569 (B) Significant long-term or permanent degradation of stream channel
570 stability and aquatic habitat will not occur; and

571
572 (C) Significant long-term or permanent degradation of aesthetic
573 properties will not occur.

574

575 (v) 401 Certification Shall Be Denied on Class 2 waters if any of the
576 following apply:

577
578 (A) The project results in significant long term or permanent
579 degradation of water chemistry;

580
581 (B) Sediment will be discharged in amounts that settle to form sludge,
582 bank or bottom deposits;

583
584 (C) The project may result in significant long-term or permanent loss
585 of channel stability or aquatic habitat; or

586
587 (D) The project may result in degradation of existing or designated
588 uses. The department shall use discretion and professional judgment to determine whether
589 existing or designated uses will be degraded by the activity.

590
591 (vi) For activities that require an individual certification review by the
592 department, evidence of consultation with WGFD should be included with preconstruction
593 notification documents. If evidence of the consultation is not included, the department may
594 consult with WGFD on behalf of the applicant. Results of the consultation will be considered in
595 the decision to approve, approve with conditions or deny certification.

596 Section 5. Use Protected Waters (Classes 2D, 3, and 4)~~V. (all) (all)~~In general,
597 Class 2D, 3 and 4 waters do not warrant the special protection provided ~~to~~ on high quality waters
598 and shall be afforded a basic level of antidegradation protection (EPA tier 1 equivalent). This
599 level of protection is focused on maintaining existing uses and may allow lowering water quality
600 ~~as~~ so long as the established ~~criteria~~ criteria for any parameter ~~is~~ are not exceeded. The issuance of
601 water quality permits and certifications shall not normally involve an examination of economic
602 necessity or alternatives to the proposed activity; ~~however,~~ the administrator may determine on
603 a case-by-case basis that special circumstances exist ~~in relation to a proposed discharge~~ and
604 ~~conduct~~ a High Quality Water (See Section 4, above) ~~tier 2-type~~ review ~~of the proposed~~
605 discharge may be conducted prior to authorizing the activity. Special circumstances may
606 include, but are not limited to, exceptional recreational or ecological significance (e.g. location in
607 a park or urban greenway, presence of rare or sensitive plant and animal species, contains unique
608 aquatic features such as wetland fens or geothermal springs, etc.).
609

610
611 Section 6. Existing Use Protection for ~~(a) All Wyoming Surface Waters~~ VI
612 Except for the special considerations provided in Chapter 1 ~~of the Wyoming Water Quality Rules~~
613 and regulations regarding Class 2D, 3D and 4C waters, existing in-stream water uses shall be
614 maintained and protected in all Wyoming surface waters. For Class 1 waters, existing uses will
615 be protected by implementing the requirements described in Section ~~3~~ III of this implementation
616 policy. For ~~h~~ High ~~q~~ Quality and ~~u~~ Use ~~p~~ Protected ~~w~~ Waters, this implementation policy assumes
617 that attainment of the criteria assigned to protect the current water body classification will serve
618 to maintain and protect all existing uses. In some cases, however, water quality may have
619 improved in the segment since the classifications were assigned, resulting in an existing use that

620 is higher than the current classification. In other cases, the classifications may have been
621 assigned based on inadequate information, resulting in classifications that do not fully
622 encompass the existing uses of the segment. Where the antidegradation review results in the
623 identification of an existing use that has protection requirements that are clearly defined, but are
624 not addressed in the current classification and criteria, the ~~d~~Division will ensure that such
625 existing uses are fully protected, based on implementation of appropriate numeric or narrative
626 water quality criteria or criteria guidance. For example, where a proposed activity will result in
627 the discharge of a substance for which sufficient data to derive appropriate criteria are available
628 (e.g. [§Clean Water Act Section 304\(a\)](#) -criteria), but numeric criteria have not been adopted in
629 the Chapter 1-regulations, the ~~D~~ivision will develop effluent limitations that will protect the
630 existing use. In cases where there is a proposed discharge where federally-listed threatened or
631 endangered species are present (i.e. aquatic species), the ~~d~~Division will work with the U.S. Fish
632 and Wildlife Service and EPA to gather available information and evaluate whether special
633 existing use protection requirements are necessary to protect the listed species. Where there is a
634 question regarding the appropriate classification of a segment, the applicant may be required to
635 provide information regarding existing uses.
636

637 | MIXING ZONES AND DILUTION ALLOWANCES IMPLEMENTATION POLICY
638 | (Chapter 1, Section 9)
639 |

640 | Section 1H.- Purpose. Section 9 of the Wyoming Surface Water Quality Standards for
641 | Wyoming Surface Waters (Water Quality ~~Division~~ Rules and Regulations, Chapter 1) provides
642 | for the establishment of a zone of dilution in the vicinity of point source discharges where acute
643 | and chronic aquatic life criteria and human health criteria may be exceeded. Section 9
644 | provides:---

645 |
646 | *Except for acute whole effluent toxicity (WET) values and Sections -14, 15, 16, 17, -28*
647 | *and 29-(b) of these regulations, compliance with water quality standards shall be determined*
648 | *after allowing reasonable time for mixing. Except for the zone of initial dilution, which is the*
649 | *initial 10% of the mixing zone, the mixing zone shall not contain pollutant concentrations that*
650 | *exceed the ~~acute~~-aquatic life acute values (see Appendix B). In addition, there shall be a zone of*
651 | *passage around the mixing zone which shall not contain pollutant concentrations that exceed the*
652 | *~~chronic~~-aquatic life chronic values (see Appendix B). Under no circumstance may a mixing zone*
653 | *be established which would allow human health criteria (see Appendix B) to be exceeded within*
654 | *500 yards of a drinking water supply intake or result in acute lethality to aquatic life. The*
655 | *procedures used to implement this section are described in the "Mixing Zones and Dilution*
656 | *Allowances Implementation Policy."*

657 |
658 | This policy addresses how mixing and dilution of point source discharges in receiving
659 | waters will be addressed in developing chemical-specific and whole effluent toxicity discharge
660 | limitations for point sources. In all cases, mixing zone and dilution allowances shall be limited
661 | as necessary to protect the integrity and designated uses of the receiving water.
662 |

663 | Section 2H.- Concepts. A mixing zone is a limited area within the receiving water
664 | body where initial dilution of a point source discharge of pollution takes place. The
665 | establishment of a mixing zone is not appropriate in all circumstances. For example, in non-
666 | perennial or low flow streams, there may not be any dilution available to mix with the discharge.
667 | Also, there may be instances where background concentrations of specific pollutants in the
668 | receiving stream provide no assimilative capacity. In circumstances like these, acute and chronic
669 | criteria would have to be met in the discharge itself.
670 |

671 | Where the establishment of a mixing zone is appropriate and possible, the design needs to
672 | be based on the following 3 concepts:
673 |

674 | (a)1. The size and configuration of the mixing zone shall not impair the integrity of the
675 | water body as a whole;

676 |
677 | (b)2. There shall be no lethality to aquatic organisms through the mixing zone; and-
678 |

679 | (c)3. There shall be no significant health risks to human populations associated with the
680 | mixing zone (e.g. proximity to recreation areas or drinking water intakes).
681 |

682 | _____ The size, configuration and other relevant design considerations shall be based on critical
683 | flow conditions for both the receiving water stream flow and the effluent flow. Effluent critical
684 | conditions include effluent flow and pollutant concentrations; receiving water critical conditions
685 | include receiving water flow, background pollutant concentrations and other characteristics of
686 | the receiving water that affect pollutant concentrations (e.g. temperature, pH, reaction rates, etc.)
687 | This policy addresses mixing zones and dilution allowances where (1) mixing is complete and
688 | near instantaneous at the point of discharge; (Section 3) and (2) mixing is incomplete at the point
689 | of discharge (Section 4).

690 | _____
691 | Section 3III. Complete Mixing Dilution Allowances.

692 | _____
693 | (a)A. Where the discharge is to a river or stream, ~~dilution is available at critical~~
694 | ~~conditions~~, and available information is sufficient to conclude that there is near instantaneous
695 | and complete mixing of the discharge with the receiving water at critical conditions, an
696 | appropriate dilution allowance may be provided in calculating chemical-specific discharge
697 | limitations. An assumption of complete mixing may be based on any of the following:

698 | _____
699 | (i)1. ~~The m~~Mean daily flow of the discharge exceeds the critical in-stream
700 | flow;

701 | _____
702 | (ii)2. ~~The presence of a~~An effluent diffuser ~~that~~ covers the entire stream width
703 | at critical flow;

704 | _____
705 | (iii)3. ~~A d~~Demonstration by the permittee, based on in-stream studies, that shows
706 | no more than a 10% difference in bank to bank concentrations within a longitudinal distance not
707 | greater than 2 stream/river widths; or

708 | _____
709 | (iv)4. Other defensible discharge outlet designs and configurations provided by
710 | the permittee.

711 | _____
712 | (b)B. The basis for concluding that complete mixing occurs will be documented in the
713 | rationale for the discharge permit.

714 | _____
715 | (c)C. The dilution allowance for continuous discharges shall be based on the critical
716 | low flow of the receiving stream. Critical low flow can be determined using the methods
717 | provided in Chapter 1, Section 11.

718 | _____
719 | (d)D. For controlled discharges, such as lagoon facilities that discharge only during high
720 | ambient flows, the stream flow to be used in determining a dilution allowance shall be the lowest
721 | flow expected to occur during the period of discharge.

722 | _____
723 | (e)E. Where a discharger has installed a diffuser in the receiving stream, that portion of
724 | the stream flow affected by the diffuser may be used to calculate a dilution allowance. For
725 | example, 50% of the 7Q10 low flow may be used for a diffuser extending halfway across the
726 | stream bottom.

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771

Section 4IV. Incomplete Mixing.

(a)A. Where dilution is available at critical conditions and the discharge does not mix at a near instantaneous and complete rate, an appropriate mixing zone may be designated for purposes of implementing aquatic life and human health criteria in the receiving stream. Where a mixing zone is allowed, its size and shape will be determined on a case-by-case basis as follows:

(i)1. ~~m~~Mixing zones for streams and rivers shall not exceed one-half of the cross-sectional area or a length 10 times the stream width at critical low flow, whichever is more limiting; and

(ii)2. ~~m~~Mixing zones in lakes shall not exceed 5% of the lake surface area or 200 feet in radius, whichever is more limiting.

(b)B. The above limits are intended to establish the maximum allowable size of mixing zones; ~~however~~, individual mixing zones may be further limited or denied ~~in due to concerns about consideration of~~ designated and existing uses or ~~presence of~~ the following ~~concerns~~ in the area affected by the discharge:

(i)1. ~~b~~Bioaccumulation in fish tissues or wildlife;

(ii)2. ~~b~~Biologically important areas such as fish spawning or nursery areas;

(iii)3. ~~H~~ow acute to chronic ratio;

(iv)4. ~~p~~Potential human exposure to pollutants resulting from drinking water or recreational activities;

(v)5. ~~a~~Attraction of aquatic life to the effluent plume;

(vi)6. ~~t~~Toxicity/persistence of the substance discharged;

(vii)7. ~~z~~Zone of passage for migrating fish or other species, including access to tributaries; and

(viii)8. ~~e~~Cumulative effects of multiple discharges and mixing zones.

(c)C. Within the mixing zone designated for a particular substance, the numeric water quality criteria contained in Chapter I, Appendix B ~~of the Water Quality Rules and Regulations~~ may not apply. However, all mixing zones shall be free from materials that:

(i)1. ~~S~~ettle to form objectionable deposits; (Chapter 1, Sections 14 & 15);

772 | ~~(ii)2. Float as debris, scum, oil, or other matter; (Chapter 1, Section 16);~~
773 |
774 | ~~(iii)3. Produce objectionable color, odor, or taste; (Chapter 1, Section 17);~~
775 |
776 | ~~(iv)4. Are acutely lethal; (Chapter 1, Section 9); and~~
777 |
778 | ~~(v)5. Produce undesirable aquatic life (Chapter 1, Section 28); and~~
779 |
780 | ~~(vi) Form visible sheens or deposits or damage or impair the normal growth,~~
781 | ~~function or reproduction of human, animal, plant or aquatic life (Chapter 1, Section 29(b)).~~
782 |
783 | ~~(d)D.~~ In incomplete mixing situations, permit limitations to implement acute whole
784 | effluent toxicity (WET) criteria shall be based on meeting such criteria at the end-of-pipe (i.e.
785 | without an allowance for dilution). For chemical-specific acute aquatic life criteria, discharge
786 | limitations will be based upon meeting such criteria at the edge of the zone of initial dilution
787 | (~~Chapter 1, Section 9~~).
788 |
789 | ~~(e)E.~~ The dilution allowance for continuous discharges shall be based on the critical
790 | low flow of the receiving stream. Critical low flow can be determined using the methods
791 | provided in Chapter 1, Section 11.
792 |
793 | ~~(f)F.~~ For controlled discharges, such as lagoon facilities that discharge only during high
794 | ambient flows, the stream flow to be used in determining a dilution allowance shall be the lowest
795 | flow expected to occur during the period of discharge.
796 |
797 | ~~(g)G.~~ The requirements and concerns identified in ~~Sections paragraphs 4(b)B. and~~
798 | ~~4(c), C.~~ above, may be considered in deciding the portion, if any, of the critical low flow to
799 | provide as dilution. The environmental concerns listed in ~~Section 4(b) paragraph B.~~ are not
800 | intended to establish any bright line tests in which to make risk determinations. Rather, such
801 | decisions should be made in consideration of designated and existing uses and relevant site-
802 | specific conditions. Each of the concerns is further explained as follows:
803 |
804 | ~~(i)I.~~ Bioaccumulation in fish tissues or wildlife. Both potential and existing
805 | bioaccumulation concerns should be evaluated. As a general guideline, pollutants with
806 | bioconcentration factors (BCF) greater than 300 indicates a potential risk of downstream
807 | bioaccumulation;
808 |
809 | ~~(ii)2.~~ Biologically important areas such as fish spawning or nursery areas. Information on either the existence of spawning areas within the proposed zone of influence or a
810 | "shore hugging" effluent plume in an aquatic life segment could support a conclusion that
811 | allowing dilution or a mixing zone would pose significant risk to a biologically important area.
812 | Presence of a threatened or endangered species downstream should also be considered in light of
813 | the duration and magnitude of potential exposure of the particular species;
814 |
815 |

816 | ~~(iii)3.~~ Low acute to chronic ratio~~;~~. For substances with low acute to chronic
817 ratios, indicating that acute effects may occur at concentrations "close" to those that have been
818 demonstrated to result in chronic effects, restricting or denying a mixing zone or dilution
819 allowance may be appropriate in order to avoid acutely toxic concentrations outside of the zone
820 of initial dilution;

821 |

822 | ~~(iv)4.~~ Potential human exposure to pollutants resulting from drinking water or
823 recreational activities~~;~~. Existence of a drinking water intake or a recreational area within or near
824 the proposed zone of influence would strongly suggest that an allowance for dilution is not
825 appropriate for substances with established human health criteria;

826 |

827 | ~~(v)5.~~ Attraction of aquatic life to the effluent plume~~;~~. Where available data
828 support a conclusion that fish or other aquatic life are attracted to the effluent plume, it may be
829 appropriate to set discharge limitations at the end-of-pipe;

830 |

831 | ~~(vi)6.~~ Toxicity/persistence of the substance discharged~~;~~. It may be appropriate
832 to deny dilution or a mixing zone for particularly toxic or persistent substances. This factor
833 should be given added weight where the discharge is to an isolated aquatic system where the
834 substance is expected to remain biologically available;

835 |

836 | ~~(vii)7.~~ Zone of passage for migrating fish or other species, including access to
837 tributaries~~;~~. Where available data suggest that allowing dilution or a mixing zone would inhibit
838 migration of fish or other species, it may be appropriate to set discharge limitations at the end-of-
839 pipe. This factor includes consideration of whether the effluent plume will block migration into
840 tributary segments;

841 |

842 | ~~(viii)8.~~ Cumulative effects of multiple discharges and mixing zones~~;~~. In some
843 cases, existence of overlapping effluent plumes may necessitate denying dilution or mixing
844 zones for discharging facilities. Any allowances for dilution should be restricted as necessary to
845 protect the integrity of the receiving water ecosystem and designated water uses.

846 |

847 | ~~(h)H.~~ The mixing zone size limits shall be implemented by calculating allowable
848 dilution consistent with one of the following methods:

849 |

850 | ~~(i)I.~~ Default Method~~;~~. In general, the default method provides a conservative
851 level of allowable dilution and can be used where available data on potential environmental
852 impacts suggests that a full mixing zone should not be allowed, or available data on the receiving
853 stream or downstream uses ~~are~~~~is~~ insufficient to determine the appropriate mixing zone
854 dimensions.

855 |

856 | ~~(A)a.~~ Stream/River Discharges~~;~~. As a general guideline, dilution
857 calculations which use up 10% of the critical low flow may be used ~~to for~~ developing effluent
858 limitat~~s~~ions for ~~chronic~~-aquatic life ~~chronic~~ criteria and human health ~~consumption~~ criteria. For
859 ~~acute~~-numeric aquatic life ~~acute~~ criteria, 1% of the critical low flow may be used.

860 |

861 | ~~(B)b.~~ Lake/Reservoir Discharges. As a general guideline, dilution up to
862 | 4:1 (20% effluent) may be provided for developing effluent limitations for ~~chronic~~-aquatic life
863 | ~~chronic~~ criteria and human health ~~consumption~~ criteria. For ~~acute~~-numeric aquatic life ~~acute~~
864 | criteria, a 0.4:1 dilution ratio may be used.

865 |
866 | ~~(ii)2.~~ Modeling Method. Mixing zones should not exceed one-half the cross-
867 | sectional area of the receiving stream or a length 10 times the stream width, whichever is less.
868 | These restrictions apply to the stream at critical low flow.

869 |
870 | A calculation must first be performed to determine if the discharge mixes within
871 | one-half area before or after the length limit. This calculation as well as other mixing zone
872 | calculations can be performed using any number of appropriate models including, but not limited
873 | to, STREAMIX I, CORMIX, PLUMES, etc.

874 |
875 | ~~(iii)3.~~ Field Study Method. Field studies which document the actual field
876 | characteristics in the receiving water can be used to determine the dilution allowance at critical
877 | low flows.

878 |
879 | Section 5. I. Other Considerations.

880 |
881 | ~~(a)1.~~ Where dilution flow is not available at critical flow conditions, neither a mixing
882 | zone or an allowance for dilution will be provided.

883 |
884 | ~~(b)2.~~ All mixing zone and dilution assumptions are subject to review and revision as
885 | information on the nature and impacts of the discharge becomes available. Mixing zone and
886 | dilution decisions are subject to review and revision along with all other aspects of the discharge
887 | permit upon expiration of the permit.

888 |
889 | ~~(c)3.~~ For certain pollutants (e.g. ammonia, dissolved oxygen, metals) that may exhibit
890 | increased toxicity after dilution and complete mixing within the receiving water, the wasteload
891 | allocation shall address such toxicity as necessary to fully protect designated and existing uses.
892 |
893 |

894 | **TURBIDITY IMPLEMENTATION POLICY**

895 | **(Chapter 1, Section 23)**

896 |
897 | **Section 11. Purpose.** Section 23 of the Wyoming Surface Water Quality Standards
898 | ~~for Wyoming Surface Waters~~ (Water Quality ~~Division~~ Rules and Regulations, Chapter 1) places
899 | the following limits on increases of turbidity in waters of the state:

900 | ~~Section 23. Turbidity:~~

901 |
902 |
903 | (a) ~~—~~ *In all cold water fisheries and/or drinking water supplies (eClasses 1, 2AB, 2A,*
904 | *and 2B and 2D), the discharge of substances attributable to or influenced by the activities of*
905 | *man shall not be present in quantities which would result in a turbidity increase of more than ten*
906 | *(10) nephelometric turbidity units (NTUs).*

907 |
908 | (b) *In all warm water or nongame fisheries (eClasses 1, 2AB, 2B and 2C), the*
909 | *discharge of substances attributable to or influenced by the activities of man shall not be present*
910 | *in quantities which would result in a turbidity increase of more than 15 NTUs.*

911 |
912 | (c) *An exception to paragraphs (a) and (b) of this section shall apply to:*

913 |
914 | (i) *The North Platte River from Guernsey Dam to the Nebraska line during*
915 | *the annual "silt run" from Guernsey Dam; and*

916 |
917 | (ii) *Short-term increases of turbidity that have been determined by the*
918 | *administrator to have only a minimal effect on water uses. Such determinations shall be made*
919 | *on a case-by-case basis and shall be subject to whatever controls, monitoring, and best*
920 | *management practices are necessary to fully maintain and protect all water uses. The*
921 | *procedures used to implement this section are described in the "Turbidity Implementation*
922 | *Policy."*

923 |
924 | ~~When the department is considering the regulation of any point source (through the~~
925 | ~~WYPDES or 401 certification processes), compliance with the numeric turbidity criteria for the~~
926 | ~~various classes of waters has always been required and will continue to be required. The~~
927 | ~~department~~ ~~It is~~ also recognizes ~~d~~ that short-term, construction-related exceedances of these
928 | standards are often unavoidable and do not necessarily result in any-significant degradation of
929 | water quality or loss of ~~existing or designated~~ ~~beneficial~~ uses. In fact, there are many
930 | construction activities in streams and rivers ~~that~~ ~~which~~ have long-term beneficial effects or
931 | provide important economic or social benefits ~~that~~ ~~but~~ ~~may~~ temporarily increase turbidity during
932 | the ~~actual~~ construction period. ~~Though the department recognizes that these circumstances exist,~~
933 | ~~there has not been a formal process for allowing temporary elevated levels of turbidity on~~
934 | ~~projects which are otherwise in the public interest.~~

935 |
936 | ~~The 1999 revision of the surface water quality standards included a provision to allow~~
937 | ~~temporary, elevated levels of turbidity in certain limited circumstances. The purpose of this~~

938 | document is to provide a process and procedure that the department will follow to implement
939 | Section 23 (e)(2) of the Chapter 1 Surface Water Standards.

940 |
941 | Section 2H. Policy. In accordance with Section 23(c)(ii2), the administrator ~~of the~~
942 | ~~Water Quality Division~~ may authorize temporary increases in turbidity above the numeric
943 | criteria in Section 23-(a) and 23(b) ~~of the Chapter 1 Surface Water Quality Standards~~ in response
944 | to an individual application for a specific activity. It is intended that temporary increases in
945 | turbidity will be limited to construction-related activities rather than effluent or storm water
946 | discharges. Such authorization may be issued independently or included in an WYPDES permit
947 | or 401 water quality certification, provided that the applicant can demonstrate and accept the
948 | following conditions:

949 |
950 | (a)A. The activities causing the increased turbidity will be limited in time and duration;

951 |
952 | (b)B. All existing and designated water uses will be fully maintained and protected
953 | throughout the duration of the activity;

954 |
955 | (c)C. Best available technology and/or best management practices will be employed to
956 | maintain turbidity and sedimentation at the lowest practical level;

957 |
958 | (d)D. The authorization for increased turbidity will specify the limits of the
959 | authorization and may include a monitoring and reporting schedule to demonstrate compliance
960 | with those limits;

961 |
962 | (e)E. Mitigation or stream restoration requirements may be included as conditions in
963 | conjunction with any authorization for a temporary increase in turbidity;

964 |
965 | (f)F. An authorization issued under this section does not relieve the applicant of any
966 | liability for damages to aquatic life, habitat, or other existing or designated beneficial uses that
967 | may result from an increase in turbidity;

968 |
969 | (g)G. An authorization issued under this section does not exempt the applicant from any
970 | other -federal, state or local laws or regulations, nor does it provide exemption from legal action
971 | by private citizens for damage to property that the activity may cause.

972 |
973 | (h)H. The administrator shall publish a notice of intent to authorize a temporary n
974 | increase of turbidity -in a paper of local circulation for a minimum of fourteen days prior to
975 | authorizing the increase. Interested persons may request a public hearing on the proposed
976 | authorization. In circumstances where the activity is necessary to address unforeseen acts of
977 | nature and cannot be delayed, the administrator may authorize a temporary increase without
978 | publishing a notice of intent.

979 |
980 |

981 USE ATTAINABILITY ANALYSIS (UAA) IMPLEMENTATION POLICY
982 (Chapter 1, Sections 33 and 34)
983

984 Section 1I. Purpose. The purpose of this document is to describe the process and
985 provide guidance relative to the development of uUse Aattainability Aanalyses (UAA) where
986 they are required under various sections of the Wyoming Surface Water Quality Standards (the
987 Water Quality Rules and Regulations, Chapter 1) ~~surface water quality standards~~. A uUse
988 Aattainability Aanalysis is defined in Chapter 1, the regulations Section 2(b)(li) as:

989 Section 2 (xlix)
990

991 *"Use attainability analysis (UAA)" means a structured scientific assessment of the factors*
992 *affecting the attainment of the use-. The factors may include physical, chemical, biological,*
993 *and economic factors as described in Section 33 of these regulations.*
994

995
996 A Uuse Aattainability Aanalysis is generally required prior to ~~changing a water~~
997 ~~classification or designated use;~~ or ~~establishing site-specific criteria~~ ~~that is different than the~~
998 ~~adopted statewide criteria for any pollutant.~~
999

1000 Section 2H. Concepts, Chapter 1 ~~of the Wyoming Water Quality Rules and~~
1001 ~~Regulations – Surface Water Quality Standards~~ establishes use designations on all waters of the
1002 state and the criteria necessary to achieve and maintain those uses. Use designations are the
1003 goals set for each water and criteria are elements of the standards, expressed as constituent
1004 concentrations, levels; or narrative statements, representing a quality of water that supports a
1005 particular use. When criteria are met, water quality will generally protect the designated use.
1006 The use designations and criteria adopted in the-state standards are intended to comply with the
1007 requirements of the federal-Clean Water Act and related federal regulations.
1008

1009 At a minimum, uses must be designated in a manner which serves the purposes of the
1010 federal-Clean Water Act, -as defined in Sections 101(a)(2); and 303-(c)-of that Act. These
1011 sections provide that water quality standards should: provide wherever attainable, water quality
1012 for the protection and propagation of fish, shellfish and wildlife and recreation in and on the
1013 water (fishable/swimmable uses, Section § 101(a)(2)); and consider the use and value of state
1014 waters for public water supplies, propagation of fish and wildlife, recreation, agriculture and
1015 industrial purposes, and navigation (Section § 303(c)).
1016

1017 Every use is not protected on every water; however, the Clean Water Act requires that
1018 each water be designated for those uses actually supported on the water as of November 28, 1975
1019 (existing uses) or would be achieved by the imposition of when the effluent limits under Sections
1020 301(b) and 306 of the Clean Water Act and best management practices for nonpoint source
1021 control. -Sections 301 (b) and 306 are imposed on point source discharges and when cost-
1022 effective and reasonable best management practices are applied to nonpoint source discharges
1023 (attainable uses). Furthermore, the federal regulations at 40 Code of Federal Regulations (CFR)
1024 Part-131 require that all waters be protected for the fishable/swimmable uses contained in

1025 | Section§ 101-(a)(2) of the Clean Water Act unless it is specifically demonstrated that those uses
 1026 | are not attainable.

1027

1028 | _____ The uses that are protected on Wyoming waters are listed and described in Section 3 of
 1029 | Chapter 1, Section 3 ~~the Surface Water Quality Standards~~ and include drinking water, game fish,
 1030 | non-game fish, fish consumption, aquatic life other than fish, recreation, wildlife, agriculture,
 1031 | industry and scenic value ~~Agriculture, Fisheries, Aquatic Life other than Fish, Industry, Drinking~~
 1032 | ~~Water, Fish Consumption, Recreation, Seenic Value and Wildlife~~. There are also numerous
 1033 | classifications for surface waters of the state. Except for Class 1, waters are classified according
 1034 | to their designated uses. Class 1 waters are specially designated waters on which the existing
 1035 | water quality is protected regardless of the uses supported by the water. The table below ~~that~~
 1036 | ~~follows~~ shows the uses designated for ~~on~~ each ~~of the use-based water~~ classifications.

1037

	<u>Drinking Water</u>	<u>Game Fish</u>	<u>Non-Game Fish</u>	<u>Fish Consumption</u>	<u>Other Aquatic Life</u>	<u>Recreation</u>	<u>Wildlife</u>	<u>Agriculture</u>	<u>Industry</u>	<u>Scenic Value</u>
<u>1*</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>
2AB	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2A	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
2B	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2C	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2D	No	When Present	When Present	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3A	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
3B	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
3C	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
3D	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
4A	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
4B	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
4C	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes

1038 | *Class 1 waters are not protected for all uses in all circumstances. For example, all waters in National Parks and
 1039 | Wilderness are Class 1; however, all do not support fisheries or other aquatic life uses (e.g. hot springs, ephemeral
 1040 | waters, wet meadows, etc.). For storm water permitting, 401 certification and water quality assessment purposes,
 1041 | the actual uses on each particular water must be determined independently.

1042

1043 | Use Attainability Analyses are required under the following circumstances:

1044

1045 | (a)A- Use Attainability Analyses are required prior to designating any water as Class
 1046 | 4 since these waters are not protected for all the uses specified in Section 101-(a)(2) of the

1047 ~~federal~~-Clean Water Act.

1048
1049 ~~_____ (b)B:~~ A ~~U~~Use ~~A~~Attainability ~~A~~Analysis is required prior to reclassifying ~~any~~ water ~~to a~~
1050 ~~new classification by involving~~ the addition, removal or modification of a use designation.
1051 Most classification changes generally result in a corresponding change in use designations, but
1052 not necessarily. For example, a reclassification from 2B to 2A would involve the removal of the
1053 fisheries use and ~~would~~; therefore, ~~require~~ a UAA. Changes completely within the Class 3 or
1054 Class 4 subcategories, however, do not always involve a ~~change~~ in use protection and ~~may~~ not
1055 require ~~a~~ UAAs. For example, a change in classification from Class 3A to 3B does not involve a
1056 change in use designations, applicable criteria or antidegradation protections; ~~it is instead~~
1057 simply a correction based on information that the water is part of a surface tributary system
1058 rather than ~~not an isolated water and is part of a surface tributary system.~~

1059
1060 ~~_____ (c)C:~~ A ~~U~~Use ~~A~~Attainability ~~A~~Analysis is required prior to ~~modifying~~ use designations
1061 even ~~if~~ ~~when~~ the action does not result in a change in classification. For example, the removal of
1062 an agricultural, ~~or~~ wildlife or recreation use from any water would not involve a classification
1063 change but does need to be based on a UAA. Also, a UAA is required when changing from a
1064 primary contact recreation designation to secondary contact.

1065
1066 ~~_____ (d)D:~~ A ~~U~~Use ~~A~~Attainability ~~A~~Analysis is required prior to establishing a site-specific
1067 criterion or water body condition that is ~~different~~ than the established statewide standards
1068 associated with the water's classification. For example, background concentrations of particular
1069 pollutants may exceed the established aquatic life criteria, however, aquatic life may still exist in
1070 the water. In these circumstances it would be appropriate to adjust the criteria to be at or near the
1071 background conditions rather ~~not be appropriate to than~~ remove all aquatic life protections ~~but~~
1072 may be sensible to adjust the criteria to be at or near the background conditions. Because criteria
1073 are generally established under laboratory conditions, these situations may ~~be found to~~ occur for
1074 any designated use in natural settings. This circumstance occurs on all Class 2D and 3D
1075 designations. A UAA is required to demonstrate that a water body is effluent dependant,
1076 whether or not ~~if~~ it supports a resident fish population and whether there are potential
1077 bioconcentrating or bio-accumulating hazards associated with the ~~quality of the~~ discharge.
1078 Ambient-based criteria may then be established for those waters that are shown to be effluent
1079 dependant with no associated hazard.

1080
1081 ~~_____ (e)~~ Use attainability analyses are not required when assigning or removing a Class 1
1082 designation.

1083
1084 Section 3.HI. Process. Each ~~U~~Use ~~A~~Attainability ~~A~~Analysis involves a site-specific ~~or~~
1085 categorical evaluation with varying information requirements. Depending upon individual
1086 circumstances and public interest ~~issues~~, one may involve an exhaustive study while another may
1087 only require simple and cursory information. For example, Class 4A waters are ~~applies to~~ man-
1088 made canals and ditches, yet a UAA is required prior to classification because these waters are
1089 not protected for aquatic life uses. This type of classification change would normally involve a
1090 minimal amount of information, often as little as ~~All that may be required in this instance is a~~
1091 demonstration that a waterway is an artificially constructed conveyance for ~~an~~ agricultural or

1092 | industrial uses ~~and would normally involve only a minimal amount of information~~. On the other
1093 | hand, a use may be removed because natural levels of pollution or human caused pollution that
1094 | cannot be remedied prevent the attainment of the use. ~~In either of those cases, making a showing~~
1095 | that pollutant levels are ~~indeed~~ natural or cannot be remedied may involve a detailed
1096 | assessment and evaluation of watershed conditions and an economic analysis. In all
1097 | circumstances the following general administrative procedures will apply:

1098 |
1099 | (a)A: A petition is made for ~~a~~ change in classification, designated use, or criteria.
1100 | ~~This~~ petition may be made by any person, ~~or~~ entity or may originate with Water Quality
1101 | Division ~~DEQ/WQD~~ based on information available to the administrator. If the proposal would
1102 | result in a removal of a designated use, ~~The~~ petition must address one or more of the factors
1103 | listed in Chapter 1, Section 33-(b)-(i) through Section 33(b)(vi), ~~if the proposal would result in a~~
1104 | ~~removal of a designated use or the establishment of less stringent criteria.~~

1105 |
1106 | (b)B: The Water Quality Division reviews the petition for completeness and provides
1107 | feedback to the petitioner on the status of the petition and may make requests for additional
1108 | information or studies if necessary. Petitioners are encouraged to contact the Water Quality
1109 | Division early in the process to ensure the UAA, study design, data collection, etc. are
1110 | appropriate and consistent with Chapter 1 and this policy.

1111 |
1112 | (c)C: Once a petition has been accepted as complete, the Water Quality Division
1113 | evaluates the petition and approves or disapproves the proposed ~~change in use designation,~~
1114 | classification ~~or~~ site-specific criteria. In instances where a petition is disapproved, the decision
1115 | may be appealed to the Wyoming Environmental Quality Council pursuant to the provisions of
1116 | the Wyoming Administrative Procedures Act, Wyoming Statutes (-W.S.) 16-3-101 through 16-
1117 | 3-115).

1118 |
1119 | (d)D: In instances where a petition for a revised classification or use is approved, the
1120 | administrator shall prepare a public notice proposing to authorize and implement the proposed
1121 | change. The public notice shall provide a 45-day public review period, contain the rationale
1122 | supporting the decision and ~~will also~~ be submitted to EPA ~~for a 30-day review period~~
1123 | for requesting comment and recommendations. The Water Quality Division ~~WQD~~ may modify its
1124 | initial ~~approval~~ determination based on public comments and EPA recommendations and issue a
1125 | final administrative decision ~~relative to the petition.~~

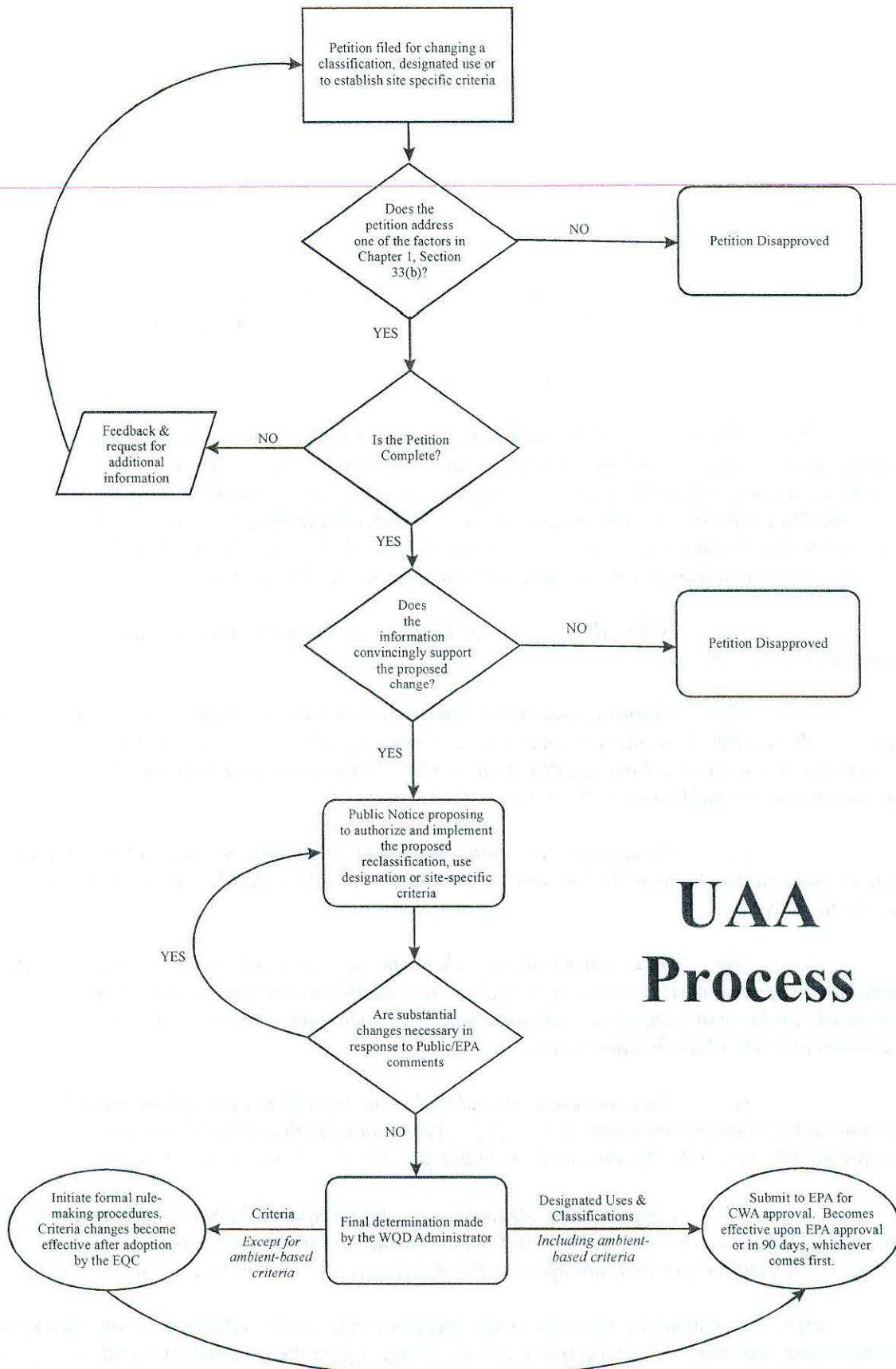
1126 |
1127 | (e)E: If the final administrative decision is substantially changed from that which was
1128 | proposed, the administrator shall prepare a second ~~30~~45-day public notice. Otherwise, the
1129 | administrative decision shall be considered ~~final~~ and submitted to EPA for approval as a revised
1130 | standard for Clean Water Act purposes as provided in Chapter 1, Section 34. This decision may
1131 | be appealed to the Wyoming Environmental Quality Council pursuant to the provisions of the
1132 | Wyoming Administrative Procedures Act, (-W.S., 16-3-101 through 16-3-115) and Rules of
1133 | Practice and Procedure, Chapter 1, Section 16.

1134 |
1135 | F: (f) In instances where a petition for revised water quality criteria is approved,
1136 | the ~~d~~Department shall ~~may~~ initiate formal rule making procedures to amend the appropriate

1137 | section(s) of ~~the~~ Chapter 1, include the revised criteria in an ongoing rule revision~~Water Quality~~
1138 | ~~Rules and Regulations~~ or include the revised criteria in a subsequent rule revision. Changes in
1139 | criteria shall not become effective until adopted by the Environmental Quality Council and filed
1140 | with the Secretary of State. This administrative process does not apply to the establishment of
1141 | site-specific criteria on Class 2D and 3D waters.

1142 |
1143 | ~~(g)~~G. Site-specific criteria may be established by the ~~Water Quality Division~~
1144 | ~~A~~administrator on Class 2D and 3D waters without additional rule making procedures, as
1145 | provided in Chapter 1, Section 36.

1146 |
1147 |



UAA Process

1149 | Section 4IV. Petitions. Except for Class -1 designations, all petitions for water
1150 | reclassifications must be made in accordance with the provisions of ~~Section 33 of the~~ Chapter 1,
1151 | Section 33-Surface Water Standards.

1152 |
1153 | (a)A. Lowering Protections. Those petitions that involve lowering a classification,
1154 | removing a use designation or establishing site-specific criteria that are less stringent than the
1155 | adopted statewide standards must contain a Use attainability Aalysis (UAA) addressing one
1156 | or more of the factors listed in Section 33-(b), ~~paragraphs~~ (i) through (vi), which states:

1157 |
1158 | ~~(Section 33-Reclassifications)...~~

1159 |
1160 | ~~—(b) The Water Quality AAdministrator may lower a classification, remove a~~
1161 | ~~designated use which is not an existing use nor ~~an~~ attainable use, establish ambient-based~~
1162 | ~~criteria on effluent dependent waters, or make a recommendation to the Environmental Quality~~
1163 | ~~Council to establish sub-categories of a use; or establish site-specific criteria if it can be~~
1164 | ~~demonstrated through a use attainability aalysis (UAA) that the original classification,~~
1165 | ~~and/or designated use or water quality criteria are not feasible because:~~

1166 |
1167 | (i) Naturally occurring pollutant concentrations prevent the attainment of the
1168 | classification or use; or

1169 |
1170 | (ii) Natural, ephemeral, intermittent or low flow conditions or water levels
1171 | prevent the attainment of the use, unless these conditions may be compensated for by the
1172 | discharge of sufficient volume of effluent discharges without violating state water conservation
1173 | requirements to enable uses to be met; or

1174 |
1175 | (iii) Human caused conditions or sources of pollution prevent the attainment of
1176 | the use and cannot be remedied or would cause more environmental damage to correct than to
1177 | leave in place; or

1178 |
1179 | (iv) Dams, diversions, or other types of hydrologic modifications preclude the
1180 | attainment of the classification or use, and it is not feasible to restore the water body to its
1181 | original condition or to operate such modification in such a way that would result in the
1182 | attainment of the classification or use; or

1183 |
1184 | (v) Physical conditions related to the natural features of the water body, such
1185 | as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to
1186 | water quality, preclude attainment of ~~the~~ an aquatic life ~~classification or~~ use; or

1187 |
1188 | (vi) Controls more stringent than those required by Sections 301(b) and 306 of
1189 | the Clean Water ~~Federal~~ Act would result in substantial and widespread economic and social
1190 | impact. This subsection shall not apply to the derivation of site-specific criteria.

1191 |
1192 | (b)B. Increasing Protections. Those petitions that involve adding a use designation or
1193 | establishing -site-specific criteria that are more stringent than the established standards are not

1194 | subject to the Section 33-(b) factors listed above. Instead, the UAA must demonstrate that the
1195 | proposed new designated uses are ~~either~~ existing uses or may be attained with the imposition of
1196 | more stringent controls or management practices. ~~In order to establish more stringent site-~~
1197 | specific criteria, a petition should demonstrate that the approved statewide criteria are not
1198 | sufficiently protective of the currently designated uses.

1199 |
1200 | Section 5V. Completeness. Prior to evaluating a petition on its merits, the Water
1201 | Quality Division must conclude that a petition is complete and contains the necessary water
1202 | quality data and other information to make a valid determination. As mentioned in Section ~~3H~~,
1203 | above, the degree of information necessary will depend upon the nature of the petition and if
1204 | necessary, the associated Section 33-(b) factor. In most cases, petitions should contain the
1205 | following general information to be considered complete.

1206 |
1207 | (a)A. ~~Petition Contents~~ – General Requirements.

1208 |
1209 | (i)1. A narrative explaining the nature and purpose of the petition. As
1210 | mentioned in Section ~~4IV~~ above, if the proposal would result in the lowering of protections, the
1211 | narrative must address one of the factors listed in Chapter 1, Section 33-(b). The petition
1212 | should explain the reasons for the requested use removal, classification change, or site-specific
1213 | criteria and -including any adverse effects that would occur if the petition is denied. Adverse
1214 | effects could include any harm to business operations, commerce, private property rights,
1215 | development opportunities, the environment, or any other public or private interest. Adverse
1216 | effects should be tangible rather than speculative. For example, an unattainable water quality
1217 | criterion that obstructs a proposed private or public action or causes unnecessary delay or
1218 | expense is a tangible adverse effect. Speculative adverse effects would be ~~associated with~~
1219 | activities that are neither proposed nor have a reasonable potential to be proposed in the
1220 | foreseeable future.

1221 |
1222 | This step is necessary to help prioritize the department's actions and resources.
1223 | Wyoming's ~~The approach taken in the~~ water quality standards ~~is to~~ designate aquatic life uses
1224 | and recreation uses on all waters by default. It is possible to modify or ~~These uses would be~~
1225 | removed ~~these uses~~ as appropriate following ~~upon the~~ completion of the required use
1226 | attainability analyses. Though it is not necessary to have a "tangible adverse effect" in order to
1227 | make an appropriate designation, those with tangible effects will ~~need to~~ be addressed with more
1228 | urgency.

1229 |
1230 | (ii)2. The name and general description of the ~~subject~~ water body(s). This may
1231 | be a single stream segment or a collection of stream segments making up a watershed or sub-
1232 | watershed, lake, pond, or other still water body, or isolated water.

1233 |
1234 | (iii)3. The specific location of the subject water body(s). Legal descriptions
1235 | should be provided for the beginning and end of stream segments. Stream segments may also be
1236 | described from tributary confluence to tributary confluence. Generally, the Water Quality
1237 | Division will not approve criteria or use designation changes on small segments of main stem
1238 | streams.

1239
1240 | (iv)4. Maps of the subject water body containing the necessary features and
1241 | adequate detail to support the proposal. For example, if the intent of the petition is to show that
1242 | normal stream flows are not sufficient to support aquatic life, National Wetlands Inventory, 7.5
1243 | minute quad maps depicting wetland occurrences along the entire water body should be used.
1244 | However, if the intent of the petition is to remove a fisheries use, a more general map depicting
1245 | the stream reach and its tributaries may be adequate. The maps should also indicate sample
1246 | locations, photo points and any other features relevant~~that are germane~~ to the petition.

1247
1248 | (v)5. Photographs that adequately characterize the water body for the purposes
1249 | of the petition. These should be taken at points along the water body where there are changes in
1250 | flow volumes or pattern, springs, wetlands, tributaries, diversions, etc. in a sufficient number to
1251 | clearly illustrate the resource. Each photo point should also be indicated on the maps submitted
1252 | under Section (a)(iv)(4) above. Each photograph should be accompanied by information
1253 | including a photo ID number, name of photographer, date and time taken, location and direction
1254 | from which the photo was taken and a narrative describing what the photo is intended to depict.

1255
1256 | (b)B. ~~Petition Contents~~—Specific Requirements. In addition to the General
1257 | Requirements outlined in Section 5(a) of this policy, each UAA must contain information and or
1258 | data that are~~is~~ specific to the petition being made, including ~~and to~~ the associated Section 33-(b)
1259 | factor, when necessary ~~where relevant~~. The required detail and quality of this information will
1260 | vary on a case-by-case basis; therefore, and it is not the purpose of this section to provide
1261 | guidance on every possible situation. The basic requirement is that the UAA contains defensible
1262 | information that convincingly supports the purposes of the petition.

1263
1264 | Except when increasing protections, a uUse aAttainability aAnalysis must ~~make a~~
1265 | demonstration that ~~a~~ certain condition(s) exists and that the reason the condition(s) it exists is
1266 | due to one of the factors in Chapter 1, Section 33-(b). Most commonly, UAAs will ~~be developed~~
1267 | ~~to support a petition to~~ lower a water classification by involving the removing of a use
1268 | designation and/or establish a site-specific adjustment to ~~the applicable~~ water quality criteria.
1269 | The list that follows shows examples of classification changes involving the removal of a use
1270 | and the general demonstration that must be made. The list presents common examples and ~~it~~ is
1271 | not intended ~~meant~~ to be exhaustive ~~since there may be other situations, but these are the most~~
1272 | ~~common~~.

1273
1274 | (i) Common Classification and Use Designation Changes:

1275
1276 | (A) 2AB to 2A:—Demonstration that the source water for an
1277 | existing drinking water supply does not and cannot support fish for one or more of the reasons
1278 | provided in Chapter 1, Section 33(b).

1279
1280 | (B) 2AB to 2B:—Demonstration that a known game fishery or
1281 | perennial water that is tributary to a known game fishery does ~~cannot~~ reasonably support a
1282 | drinking water supply for one or more of the reasons provided in Chapter 1, Section 33(b).

1283

1284 | (C) 2AB to 2C. ~~;~~ Demonstration that the water is known to support
1285 | only non-game fish species or is a perennial tributary to a water known only to support non-game
1286 | species; and cannot reasonably support a drinking water supply for one or more of the reasons
1287 | provided in Chapter 1, Section 33(b).

1288 |
1289 | (D) 2B to 2C. ~~;~~ Demonstration that the overwhelming composition
1290 | of fish species is non-game for one or more of the reasons provided in Chapter 1, Section 33(b).
1291 | Incidental or occasional use of the water by game species does not require the 2B classification.

1292 |
1293 | (E) Class 2 (all) to Class 3A or Class 3B. ~~;~~ Demonstration that
1294 | the water is either isolated or is an intermittent or ephemeral tributary; and is not capable of
1295 | supporting fish for one or more of the reasons provided in Chapter 1, Section 33(b).

1296 |
1297 | (F) Class 2 (all) to Class 3C. ~~;~~ Demonstration that the water is a
1298 | perennial tributary stream that cannot support fish or drinking water supplies for one or more of
1299 | the reasons provided in Chapter 1, Section 33(b).

1300 |
1301 | (G) Class 2D & 3D dDesignations. More detailed guidance is
1302 | provided in Section 6, Effluent Dependent Waters (Classes 2D and 3D).

- 1303 | ;
1304 |
1305 | 1. (I) Demonstration that there is insufficient natural flow to
1306 | support aquatic life and aquatic life that is present is 100% of the flow or standing
1307 | water is attributable to permitted effluent discharge(s) ~~except for occasional snow~~
1308 | ~~melt and storm events~~-(Chapter 1, Section 33-(b)(iii));
1309 |
1310 | 2. (II) There is a “~~N~~et ~~E~~nvironmental ~~b~~enefit” (NEB)
1311 | associated with the created water body;
1312 |
1313 | 3. (III) The quality of the water does not pose a hazard to
1314 | humans, wildlife or livestock that may be exposed to it; and
1315 |
1316 | 4. (IV) There is a credible threat to remove the discharge.
1317 |
1318 | ~~More detailed guidance is provided in Section VI “Effluent Dependat Waters” (Classes 2D and~~
1319 | ~~3-D).~~

1320 |
1321 |
1322 | (H) All Class 4 dDesignations. ~~;~~

1323 |
1324 | (I) 4A. ~~;~~ Demonstration that the water body is an artificially
1325 | constructed conveyance for an agricultural or industrial water supply.

1326 |
1327 | (II) 4B. ~~;~~ Demonstration that the water is not capable of
1328 | supporting aquatic life because natural, ephemeral, intermittent or low flow conditions or water

1329 | levels prevent the attainment of the use (*Chapter 1, Section 33-(b)(ii)*).

1330 |
1331 | (III) 4C:— Demonstration that the water is an isolated water
1332 | and 100% of the flow or standing water is attributable to permitted effluent discharges except for
1333 | occasional snow melt and storm events (*Chapter 1, Section 33-(b)(iii)*).

1334 |
1335 | (I) Recreation Use Classes. The Chapter 1 regulations establishes
1336 | two categories of recreational use protection applicable to all waters in the state: “primary”
1337 | and “secondary” contact. Chapter 1, Section 27 outlines that during the recreation season, May 1
1338 | through September 30, waters may be designated for primary or secondary contact recreation and
1339 | during the non-recreation season, October 1 through April 30, all waters are protected for
1340 | secondary contact recreation. Section 27(b) establishes that waters are designated for secondary
1341 | contact recreation through the reclassification and use attainability analysis process outlined in
1342 | Chapter 1, Sections 33 and 34 and are identified in the *Wyoming Surface Water Classification*
1343 | List. All waters in Table A of the Wyoming Surface Classification List are designated for
1344 | primary contact recreation unless identified as a secondary contact water by an “(s)” notation.
1345 | Waters not listed on Table A are assigned a secondary contact use designation by default. A Use
1346 | Attainability Analysis is required in order to change any of the default designations. Because
1347 | changing waters to secondary contact recreation this may be a very common practice, a Section 7
1348 | of this policy separate policy (Section VII) describes regarding the implementation of Chapter 1,
1349 | Section 27 has been developed.

1350 |
1351 | (J) Site-Specific Criteria. A Use aAttainability Aanalysis is also
1352 | required prior to establishing site-specific criteria that are less stringent than the adopted
1353 | statewide criteria for any particular use designation or classification without removing the use or
1354 | changing the classification. Demonstrations relative to this action must show that the adopted
1355 | criteria cannot be attained for one or more of the reasons provided in Chapter 1, Section 33-(b).
1356 | Additionally, each specific criterion must be evaluated separately. In order to establish more
1357 | stringent site-specific criteria, the UAA must demonstrate that the approved statewide criteria are
1358 | not sufficiently protective of the currently designated uses.

1359 |
1360 |
1361 | (K) Increasing Protections. Use Attainability Analyses intended to add
1362 | a designated use must contain sufficient information to conclude that a use is an existing use or
1363 | otherwise attainable by the imposition of more stringent controls on pollutant sources.

1364 |
1365 | ~~In order to establish more stringent site-specific criteria, the UAA must demonstrate that the~~
1366 | ~~approved statewide criteria are not sufficiently protective of the currently designated uses.~~

1367 |
1368 | (ii) Section 33(b) Factors. Chapter 1, Section 33-(b), paragraphs (i) through
1369 | (vi) provide the allowable rationale for removing a use designation or establishing less stringent
1370 | water quality criteria on a site-specific basis. Except when related to a Class 4A designation, all
1371 | UAAs must address one or more of these factors. A 4A classification is based solely on the fact
1372 | that the water body is an artificial canal or ditch that is not known to support fish populations and
1373 | it is not necessary to establish the 33(b) factor beyond that finding. Each factor is discussed

1419
1420 | _____ Most commonly, this is the factor relied on to classify waters as 4B. As
1421 provided in Chapter 1, Section 4, the occurrence of wetlands in or adjacent to stream channels
1422 will be used as an indicator of whether or not normal flow conditions are sufficient to support
1423 aquatic life. In general, areas that are inundated or saturated to the surface for as little as 7 days
1424 during the growing season will develop wetland characteristics. Stream channels that lack a
1425 significant wetland component may be considered to have insufficient hydrology to support
1426 aquatic life.

1427
1428 | _____ In order to establish this factor, the UAA should address entire stream
1429 reaches, not just isolated segments. The objective is to show that wetlands are either non-
1430 existent or occur so infrequently that the hydrologic potential of the stream to support aquatic life
1431 is insignificant. Significance is not precisely defined and will be determined on a case-by-case
1432 basis after consideration of the ratio of wetland acres to stream length in addition to wetland
1433 functions and values.

1434
1435 | _____ National Wetland Inventory (NWI) maps produced by the U.S. Fish and
1436 Wildlife Service may be used to identify wetland occurrences and to calculate acreages.
1437 Wetlands are defined in Wyoming statute as areas having all 3 essential characteristics including
1438 hydrophytic vegetation, hydric soils and wetland hydrology. The NWI maps depict and classify
1439 both wetlands and deep water habitats and all of the features shown on the maps do not
1440 necessarily delineate as wetlands under the Wyoming definition or the delineation methods used
1441 by the U.S. Army Corps of Engineers for Clean Water Act purposes. When identifying wetlands
1442 using the NWI maps, unvegetated systems need to be separated from the vegetated ones since
1443 unvegetated systems are not wetlands. Unvegetated sub-classes may be found in both the
1444 lacustrine and riverine systems classified on the NWI maps. All sub-classes of the palustrine
1445 system should be considered wetlands. Interpretation of the Cowardin classification system,
1446 photographs and/or on site-delineations may all be used to differentiate between riverine and
1447 lacustrine subclasses that are wetlands and those that are not.

1448
1449 | _____ After the amount of wetlands has been identified, the significance of that
1450 amount needs to be determined. If no wetlands have been identified, the UAA may conclude
1451 that aquatic life uses are not attainable. In all other cases, the UAA must present the rationale for
1452 determining that the amount of wetlands that are present are of such minor consequence that the
1453 stream system as a whole cannot be considered to sustain aquatic life.

1454
1455 | _____ When using wetland occurrence to establish this factor, it must be
1456 remembered that wetlands are used as a surrogate ~~measurement~~ to determine actual hydrologic
1457 conditions over an extended period of time. ~~Wetland occurrence is~~ its best used ~~is to~~
1458 ~~identify~~ ~~separate~~ ~~truly~~ dry stream channels ~~from those that are not~~ without ~~having to~~ directly
1459 ~~measuring~~ ing flows through all seasons of the year. ~~This method~~ ~~The extent of wetland occurrence~~
1460 cannot be used to remove aquatic life protections from water bodies that are known to normally
1461 contain water for extended periods even though they do not exhibit a significant amount of
1462 wetlands. Examples of these water bodies would be bedrock stream channels and steep-sided
1463 rivers, lakes and ponds that have the hydrology to support aquatic life, but not the substrate

1509 | _____ This factor applies to dams, diversions, or other hydrologic modifications
1510 | that were constructed prior to November 28, 1975 and resulted in the loss of a fisheries, aquatic
1511 | life or recreational use in the waters on which they were constructed. Uses that existed on the
1512 | waters after that date would be considered "existing uses" and would still have to be designated.
1513 | It is not necessary to protect waters for the applicable uses that were lost if it can be shown that
1514 | restoration is not feasible. The information required to establish this factor is similar to what is
1515 | required for human caused sources of pollution that cannot be remedied. An analysis of
1516 | economic and technological factors must be conducted in order to make a determination. Other
1517 | legal, social and cultural factors can also be considered and used as supporting information. The
1518 | level of analysis and information required may vary from one situation to another depending
1519 | upon the nature of the hydrologic modification and the overall environmental benefit of restoring
1520 | the use.

1521 |
1522 | _____ (E) Physical conditions related to the natural features of the water
1523 | body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like,
1524 | unrelated to water quality, preclude attainment of anthe aquatic life classification or use;

1525 |
1526 | _____ This factor applies -mainly to the removal of fisheries, ~~and~~ aquatic life ~~and~~
1527 | ~~primary-contact recreation~~-uses since these are normally the only uses where the expressed
1528 | physical habitat parameters are relevant. The critical point that must be established by the
1529 | information in the UAA is that the lack of habitat ~~or recreational opportunity~~ is a natural
1530 | condition and not caused by hydrologic modifications, land uses, or other human activities. In
1531 | this respect the requirements are similar to those used to establish that naturally occurring
1532 | pollution prevents the attainment of the use. The basic difference is that one refers primarily to
1533 | chemical parameters and the other to physical parameters.

1534 |
1535 | _____ (F) Controls more stringent than those required by Sections 301(b) and
1536 | 306 of the federal Clean Water Act would result in substantial and widespread economic and
1537 | social impact.

1538 |
1539 | _____ -This is probably the most difficult factor to establish and has the most
1540 | limited application. The referenced controls required by Sections 301 and 306 of the Clean
1541 | Water Act are industry-specific effluent limitations and treatment technologies. They establish
1542 | basic levels of required water quality treatment that are is based on ~~more related to~~ best available
1543 | technology rather than ~~to~~ water quality and water uses. This factor is intended to be applied in
1544 | circumstances where it is known that the application of the technology-based requirements will
1545 | not achieve the water quality standards applicable to the receiving water and additional
1546 | requirements to meet the water quality standards will result in unacceptable social or economic
1547 | impacts.

1548 |
1549 | _____ The essence of a determination under this factor is that the activity causing
1550 | the impact is of such great economic or social importance that it supersedes the goal of
1551 | maintaining the water use. The UAA must establish that the imposition of the water quality
1552 | standards would result in "widespread" social and economic impacts. This is an extremely
1553 | subjective term and can only be defined on a case-by-case basis after full public participation.

1554 | An economic impact analysis must be completed that includes an examination of alternatives
1555 | that would ~~lessen or~~ mitigate both economic and environmental impacts. The level of analysis
1556 | and information required must be comprehensive since the object is to quantify "widespread"
1557 | economic or social impact in relation to the value of the water use that would be removed.

1558 |
1559 | Section 6. UAA Procedures for Effluent Dependent Waters (Classes 2D and
1560 | 3D). The justification for classifying a water as either 2D or 3D and assigning ambient-based
1561 | criteria is based on the Section 33(b)(iii) factor described above in Section 5(b)(ii)(C). The
1562 | specific rationale is that effluent dependent waters create environmental benefits that would be
1563 | lost if the discharge is discontinued. Since there is no natural source of water, there would be no
1564 | pre-existing aquatic life that could be damaged by the quality of the discharge. As a result, Any
1565 | aquatic life that develops because of the effluent discharge is ~~necessarily~~ tolerant of the ambient
1566 | conditions.

1567 |
1568 | Though the habitats that are created in effluent dependent circumstances pose no real
1569 | threat to the species of aquatic life that colonize them, there is a potential that they may pose a
1570 | hazard to terrestrial and semi-aquatic wildlife species that may be attracted to them. The greatest
1571 | concern is the possibility of bioconcentrating or bioaccumulating chemicals moving through the
1572 | food chain at levels that create a risk to livestock, wildlife or humans. Therefore, part of the
1573 | process of classifying a water body as 2D or 3D involves assessing a discharge for the presence
1574 | of those types of pollutants and establishing appropriate criteria.

1575 |
1576 | Therefore, the complete process for designating a water as either class-2D or 3D contains
1577 | three parts. The first is completing a Use a Attainability a Analysis (UAA) that demonstrates
1578 | that the subject-water body is in fact effluent dependent and eligible for site-specific, ambient-
1579 | based criteria. This part includes a demonstration that there is an environmental benefit
1580 | associated with the discharge and a credible threat to remove the discharge. The second part is a
1581 | hazard analysis that includes a specific screening of the discharge for the presence of
1582 | bioaccumulating and bioconcentrating pollutants and a more general analysis to identify the
1583 | pollutants for which ambient-based criteria will be established. The final part is to calculate and
1584 | establish site-specific ambient-based criteria for those parameters that exceed the otherwise
1585 | adopted statewide criteria (Chapter 1, Appendix B).

1586 |
1587 | (a) Part 1—Effluent Dependency. The basic point is to show convincingly, through a
1588 | weight of evidence approach, that a water body is comprised of essentially 100% permitted
1589 | effluent and that without the effluent there would be no significant aquatic resource. There is no
1590 | one best way to make this demonstration, ~~although~~ but the determination will be most
1591 | convincing if multiple factors are assessed. These can include direct flow measurements,
1592 | vegetation and wetland analysis upstream and downstream of the discharge, precipitation
1593 | information, paired watershed analysis, historic information, & testimony, etc.

1594 |
1595 | This part also involves demonstrating an environmental benefit. —It shall be presumed
1596 | that water on the surface does have an environmental benefit for the aquatic life that colonizes it
1597 | and for the habitat and food sources that surface water bodies provide to semi-aquatic and
1598 | terrestrial wildlife species. Other consumptive uses such as livestock watering, irrigation and

1599 industrial uses are also important benefits along with non-consumptive recreational and scenic
1600 values. Because these benefits are presumed, it is not mandatory that the UAA exhaustively
1601 identifies and measures each actual benefit that occurs associated with the water_body but should
1602 make an effort to generally characterize the natural and human uses of the water.

1603
1604 _____ This presumption of environmental benefits, however, is not absolute and may be
1605 overridden where the quality or condition of the effluent-dependant water_body poses a threat
1606 or hazard to non-aquatic wildlife, livestock or industrial uses, or human health.

1607
1608 _____ There is also a requirement to show a credible threat to remove the discharge. The basis
1609 for this requirement is in the concept of “~~N~~et ~~E~~nvironmental ~~B~~enefit” (NEB) that weighs the
1610 potential for loss of a permitted effluent against the benefits of instream flow. ~~NEB~~ infers ~~that~~
1611 there is some possibility that the discharge could be discontinued.

1612
1613 _____ The demonstration of a credible threat to remove the discharge from oil and gas
1614 production operations is presumed to be satisfied based on ~~1~~) consideration that alternatives to
1615 surface discharge is the norm for the industry with an exemption applicable only west of the 98th
1616 meridian; and ~~2~~) an economic analysis done by EPA Headquarters showing that available
1617 treatment options for this industry are, as a general matter, more expensive than available non-
1618 discharge options.

1619
1620 _____ For other types of discharges, the credible threat demonstration would have to be made
1621 either on a case-by-case basis or on a categorical basis as with the oil and gas industry.

1622
1623 ~~(b) Part 2~~ Hazard Analysis and Chemical Screening. In order to be certain that there
1624 are in fact “net environmental benefits” associated with the creation or continued existence of an
1625 effluent-dependant water_body, the UAA must evaluate actual or probable hazards to wildlife,
1626 livestock and human health. This evaluation shall address the potential that the pollutants
1627 contained in the effluent may for accumulation of pollutants contained in the effluent discharge
1628 to levels considered ~~to be~~ hazardous in the environment or hazardous to wildlife, livestock or
1629 humans by means of bio-accumulation through the food chain.

1630
1631 _____ The evaluation of hazards should focus on the level of pollutant (actual or modeled),
1632 ~~R~~ risk of exposure to the target-user (e.g. wildlife, livestock, and humans);
1633 e.g. mercury in 2D waters may be a greater hazard than in 3D waters because of potential
1634 exposure to humans through fish consumption). and ~~B~~ background concentration of the
1635 contaminant.

1636
1637 _____ The first step in the hazard evaluation shall consist of an initial screening of the permitted
1638 effluent for pollutants of concern. The screening parameters may be different from one type of
1639 discharge to another because of differences in the relative probability of the occurrence of bio-
1640 accumulating ~~ve~~ materials associated with the industry or activity. For example, the vast majority
1641 of waters in Wyoming that would be candidates for an effluent-dependant classification are
1642 created by the discharge of groundwater to the surface as a result of oil and gas production or
1643 mining activities. The types of pollutants that could reasonably be expected to occur are

1644 inorganic metals and salts. Of these, only selenium and mercury need to be investigated to
1645 determine the hazard potential to wildlife, livestock or humans.

1646

1647 | _____ A relatively small number of 2D and 3D candidate waters may be created from municipal
1648 wastewater treatment plants, industrial facilities such as oil refineries or power generating
1649 facilities, and various types of manufacturing operations. Depending upon the circumstances of
1650 the discharge, effluents from these facilities may have a higher probability of containing
1651 synthetic and organic bio-accumulating materials. In these situations, initial screening
1652 parameters will be determined on a case-by-case basis. Because effluent-dependent waters
1653 created by these types of discharges will be relatively uncommon and addressed on a case-by-
1654 case basis, the remainder of this guidance will focus on those circumstances involving the
1655 discharge of groundwater to the surface.

1656

1657 | _____ (i) _____ Selenium. — The hazards associated with selenium bio-
1658 accumulation are related to mortality and impaired reproduction in waterfowl, shorebirds and
1659 piscivorous birds and selenium poisoning in livestock and terrestrial wildlife. Exposure to
1660 humans is not a consideration because Class 2D and 3D waters are not designated and protected
1661 as drinking water supplies.

1662

1663 | _____ (A) _____ Birds. — Where the initial screening indicates that the effluent
1664 concentration of selenium exceeds the Appendix B aquatic life chronic value, whole body fish
1665 and/or macroinvertebrate tissue analysis will be required. If whole body tissue concentrations
1666 are less than or equal to 7.9 µg/g dry weight, the water shall not be considered a hazard to
1667 waterfowl, shorebirds and piscivorous birds. A whole body tissue criterion of 7.9 µg/g dry
1668 weight selenium will be established for the stream segment along with an ambient-based water
1669 column value calculated as provided in [Section 6\(c\) Part 3](#) of this procedure.

1670

1671 | _____ Where the effluent water column concentration exceeds the Appendix B
1672 chronic aquatic life criterion and whole body tissue concentrations are greater than 7.9 µg/g dry
1673 weight, the water shall be considered a hazard to waterfowl, shorebirds and piscivorous birds. A
1674 whole body tissue criterion of 7.9 µg/g dry weight selenium will be established for the stream
1675 segment and site-specific ambient-based criteria for selenium shall not be established. The
1676 stream segment shall be listed as impaired on the state 303(d) list and a TMDL developed to
1677 address the tissue based criterion.

1678

1679 | _____ (B) _____ Livestock and Wildlife. — The hazard of selenium poisoning
1680 shall be considered to be the same for livestock and wildlife and one group is not considered to
1681 be more tolerant or susceptible than the other. This hazard analysis is intended to address the use
1682 of the water by mammals.

1683

1684 | _____ Selenium poisoning can occur in livestock raised on vegetation grown in
1685 selenium bearing soils which are common in Wyoming and in some areas contain up to 30
1686 mg/kg of selenium. "In water, 400 to 500 µg/L of selenium is believed to be non-toxic to cattle.
1687 Such water may contribute to selenium poisoning, but the selenium content of the feed is a more

1688 | critical factor.” (McKee ~~and~~ Wolf, 1963)¹.

1689

1690 | _____ Water used for irrigation may contain -up to 10,000 µg/L of selenium with
1691 | no anticipated toxicity to plants.

1692

1693 | _____ Clearly, the identification of environmental hazards associated with
1694 | selenium in effluent-~~dependa~~ent water_bodies can be focused on an evaluation of impacts to
1695 | birds. It can be assumed that where there is little or no hazard to birds, the water is safe for all
1696 | other designated uses.

1697

1698 | _____ (ii) Mercury. ~~1.~~—Mercury in trace amounts is acutely toxic to aquatic life
1699 | and also presents a significant health hazard to human populations. The primary exposure
1700 | pathway to humans is through the consumption of mercury contaminated fish. Most other
1701 | human exposure pathways such as through drinking water or general environmental exposure are
1702 | considered negligible, ~~al~~though a safe drinking Water Act Maximum Contaminant Level (MCL)
1703 | of 2 µg/L has been established for the protection of drinking water supplies. The identification of
1704 | mercury-related hazards in effluent -~~dependa~~ent waters needs to consider the following:

1705

1706 | _____ (A) ~~1.~~—The likelihood of bio-accumulation in fish tissue in the
1707 | immediate Class 2D receiving waters and downstream eClass 2 waters;

1708

1709 | _____ (B) ~~2.~~—The contamination of groundwater aquifers to levels above
1710 | 2 µg/L; ~~and~~

1711

1712 | _____ ~~3.~~(C) The accumulation of mercury in sediments to levels above the
1713 | State’s guidelines for remediation of contaminated soils.

1714

1715 | _____ Where the initial screening indicates that the effluent concentration of mercury
1716 | exceeds the Appendix B aquatic life chronic value and the discharge can be expected to reach a
1717 | fish bearing water, whole body fish tissue analysis will be required. If whole body tissue
1718 | concentrations are less than or equal to 0.3 mg methylmercury/kg fish, the water shall not be
1719 | considered a hazard to fish or fish consumption. A whole body tissue criterion of ~~to~~ 0.3 mg
1720 | methylmercury/kg fish will be established for the stream segment along with an ambient-based
1721 | water column value calculated as provided in Section 6(c)Part 3 of this procedure.

1722

1723 | _____ Where the effluent water column concentration exceeds the Appendix B chronic
1724 | aquatic life criterion and whole body tissue concentrations are greater than 0.3 mg
1725 | methylmercury/kg fish, the water shall be considered a hazard to fish, wildlife and fish
1726 | consumption. A whole body tissue criterion of 0.3 mg methylmercury/kg fish will be established
1727 | for the stream segment and site-specific ambient-based criteria for mercury shall not be
1728 | established. The stream segment shall be listed as impaired on the state 303(d) list and a TMDL
1729 | developed to address the tissue based criterion.

1730

¹ McKee, J.E. and H.W. Wolf. 1963. Water quality criteria (second edition). State Water Quality Control Board, Sacramento, CA. Pub. No. 3-
A.

1731 | _____ Where the initial screening indicates that the effluent concentration of mercury
1732 exceeds the Appendix B aquatic life chronic value and the discharge is not expected to reach a
1733 fish bearing water, sediment analysis may be required. Ambient-based water quality criteria may
1734 be established where sediment concentrations are less than or equal to 23 mg/kg inorganic
1735 mercury and 26 mg/kg methylmercury. In no circumstance shall an ambient-based water column
1736 criterion exceed 2 µg/L total recoverable mercury.

1737
1738 | _____ In addition to hazard screening for bioaccumulative constituents, a more general
1739 screening of all parameters that could reasonably be expected to be found in the discharge should
1740 also be conducted. This information will be used in the subsequent procedure for establishing
1741 ~~the~~ ambient criteria. Site-specific ambient criteria will only be established for those parameters
1742 that exceed the statewide criteria listed in Chapter 1, Appendix B. This screening is important to
1743 identify which pollutants require a site-specific modification. The exact list of screening
1744 parameters will depend upon the type of discharge. For oil ~~and~~ gas produced water discharges,
1745 the following list should be used:

1746

- Arsenic
 - Cadmium
 - Chromium (III)
 - Copper
 - Lead
 - Mercury*
 - Nickel
 - Selenium*
 - Silver
 - Zinc
 - Aluminum (pH 6.5-9.0 only)*
 - Chloride
 - Iron
 - Manganese
 - ~~Sulfide~~-Undissociated Hydrogen Sulfide
(~~S²⁻~~, H₂S-)
 - Hardness (CaCO₃) ~~m~~Mg/L
- _____ * Required for hazard analysis

1747

1748

1749

1750 | (c) ~~Part 3~~—Establishing Ambient-~~B~~based Criteria. Chapter 1, Section 36 provides a
1751 procedure by which the adopted statewide numeric criteria may be modified to reflect ambient
1752 conditions on effluent dependaent waters. Ambient-based criteria can be established only for
1753 those parameters where the discharge effluent quality exceeds the values in Chapter 1, Appendix
1754 B.

1755

1756 | (i) Criteria modification based on a finding of net environmental benefit is
1757 authorized where a UAA described in parts 1 and 2 above satisfactorily demonstrates that: :

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1802

~~_____ (A)1. The water body is effluent dependent;~~

~~_____ (B)2. The discharge has been shown to create an environmental benefit and removal of the discharge would cause more environmental harm than leaving it in place;~~

~~_____ (C)3. There is a credible threat to remove the discharge; and~~

~~_____ (D)4. Appropriate safeguards are in place, ensuring that downstream uses will be protected and the discharge will pose no health risk or hazard to humans, livestock or wildlife.~~

~~_____ (ii) Pursuant to an approved UAA and reclassification to either Class 2D or 3D, site-specific criteria for eligible constituents shall be calculated to be equal to the background concentration for each constituent plus a margin of error.~~

~~_____ (A) 1.—The background concentration shall be the highest concentration recorded over the course of a one year period where samples have been taken at least once in each month. In circumstances where water is not present 12 months out of the year, additional samples must be collected in the months when water is present to obtain a minimum data set of at least 12 samples.~~

~~_____ (B)2.—The margin of error shall be one standard deviation calculated from the same data set used to establish background.~~

~~_____ (C)3.—Depending upon the circumstances, samples may be collected either at the discharge outfall or from a representative point in the stream channel downstream from the permitted outfall. For example, where the effluent dependent water is created by a single discharge, it is acceptable to sample the outfall for this analysis. Where an effluent dependent water is created from multiple outfalls, samples should be collected in-stream at a representative point after mixing of the various outfalls has occurred.~~

~~_____ (D)4.—End-of-pipe sampling and analysis shall ~~comply~~**be done in conformance** with WYPDES analytical requirements for the particular constituents and in-stream sampling and analysis shall ~~be comply~~**conducted in conformance** with the "*Wyoming Manual of Standard Operating Procedures for Sample Collection and Analysis*".~~

~~_____ (E) The WYPDES permittee responsible for the discharge shall be required to collect and submit the water quality data necessary to make the above calculations.~~

~~Section 7**VII. UAA Procedures for Recreation Designations,**~~

~~(a) Purpose, Chapter 1, Section 27 ~~of Chapter 1 of the Wyoming Water Quality Rules and Regulations (Surface Water Standards)~~ ~~identifies~~**creates** two recreational use~~

1803 | categories for all bodies of surface water in the state. A ~~“Primary Contact Recreation”~~
1804 | ~~designation~~ is intended to apply to those waters where there is a reasonable potential for people
1805 | to engage in full body contact with the water and/or a potential to ingest small quantities. ~~The~~
1806 | ~~“Secondary Contact Recreation” designation~~ is intended to apply to all other waters where
1807 | those circumstances do not occur.

1808 |
1809 | The purpose of this policy is to provide guidance on how to appropriately designate
1810 | specific waters as either primary or secondary contact waters.

1811 |
1812 | (b) Concepts. The basic concept of recreational use protection is to ensure that
1813 | surface waters of the state are maintained at a quality that does not pose a significant risk of
1814 | disease to human populations that may be exposed to them. The factors contributing to human
1815 | health risk include the concentration of disease causing organisms in the water and the relative
1816 | level of human exposure to that water.

1817 |
1818 | Along with the use classification categories, Section 27 also provides the criteria that
1819 | apply to each. The criteria are based on concentrations of *E.coli* bacteria which serve as an
1820 | indicator of the probability that the water may also contain populations of other waterborne
1821 | disease causing bacteria and viruses. These criteria are used as the basis for effluent limits on
1822 | permitted discharges (WYPDES permits) and Section 303(d) listings and subsequent TMDL or
1823 | watershed planning targets.

1824 |
1825 | All surface waters are designated for primary contact recreation during the summer
1826 | recreation season (May 1 through September 30) unless the water has been designated for
1827 | secondary contact recreation through a use attainability analysis. Recreational use designations
1828 | are identified in the *Wyoming Surface Water Classification List*, assigned either a primary or
1829 | secondary contact recreation designation. By default, waters that appear on Table A of the
1830 | “Wyoming Surface Water Classification List” are primary contact waters and those that do not
1831 | appear on Table A are secondary contact waters.— In general, Table A is a listing of waters that
1832 | are named on the USGS 1:500,000 hydrologic map of Wyoming. These are the larger mainstem
1833 | streams, lakes and reservoirs that have a higher probability of having persistent flows and some
1834 | attraction for recreational use. Most of the waterbodies not listed on Table A exhibit intermittent
1835 | or ephemeral flows and are less likely to provide primary contact recreational opportunity. This
1836 | is not a perfect system for classification but it is a manageable one. Its usefulness is contingent
1837 | upon having clear and simple procedures for making appropriate adjustments to the default
1838 | designations.

1839 |
1840 | Though primary contact is the default designation for Table A waters, some listed waters will be
1841 | specifically designated as secondary contact waters. All of these, however, must be supported by
1842 | a Use Attainability Analysis that provides the rationale for the lower designation. Similarly,
1843 | waters not currently listed on Table A will be added based on UAAs demonstrating that primary
1844 | contact is the appropriate designation for the previously unlisted water.

1845 |
1846 | The decision as to whether a water body is most appropriately designated for primary or
1847 | secondary recreation protection is not intended to be a difficult one. ~~It is based solely on the~~

1848 | ~~relative potential of exposure to human populations.~~—There are only a few factors relating to
1849 | water availability, access and recreational opportunity that need to be considered. The entire
1850 | UAA process will in most cases be very simple and will not require any special expertise to
1851 | complete.

1852 |
1853 | _____ It is ~~also~~ important to note that a recreational use designation is not intended to imply that
1854 | the owner of property adjacent to any water body would allow access for any kind of recreational
1855 | use. The application of recreation classifications does not create any rights of access on or
1856 | across private property for purposes of recreation on such waters. The classification is intended
1857 | only to affect ~~the~~which water quality criteria ~~that~~ will be used in the implementation of the
1858 | pollution control programs required under the ~~federal~~Clean Water Act and the Wyoming
1859 | Environmental Quality Act.

1860 |
1861 | _____ (c) _____ Factors Affecting Recreational Use Designations.

1862 |
1863 | _____ (i) _____ All waters, regardless of flow regime, located within federal, state or local
1864 | parks and recreation areas will be designated for primary contact recreation. Federal, state or
1865 | local parks should not be construed to mean all public lands, but rather specifically developed
1866 | and/or designated recreational use areas such as campgrounds, picnic grounds, trailheads,
1867 | greenways, etc.

1868 |
1869 | _____ (ii) _____ Waters known to be used for primary contact activities such as swimming,
1870 | rafting, floating, canoeing ~~or~~ kayaking shall be designated as primary contact waters.

1871 |
1872 | _____ (iii) _____ All lakes and reservoirs located in the state ~~are~~already used or have the
1873 | potential to be used for primary recreation ~~and~~will be designated as such.

1874 |
1875 | _____ (iv) _____ Waters located within or flow through municipalities or high density
1876 | housing areas will generally be designated as primary contact waters.

1877 |
1878 | _____ (v) _____ Larger perennial streams and game fisheries will generally be designated
1879 | for primary contact because of their potential to attract sportsmen and other recreationists.

1880 |
1881 | _____ (vi) _____ Except for waters located in or flowing through parks, recreation areas or
1882 | urban areas, intermittent and ephemeral waters will generally be designated for secondary
1883 | contact uses.

1884 |
1885 | _____ (vii) _____ Segmentation of streams into multiple primary and secondary designations
1886 | is possible but will only be approved where the benefits of more specific segmentation outweigh
1887 | the drawbacks of an increasingly segmented system.

1888 |
1889 | ~~Variances~~

1890 |
1891 | ~~Section 27(d) provides an ability to grant variances to the numeric criteria in instances where the~~
1892 | ~~source of bacterial contamination is found to be natural in origin (wildlife), unavoidable (off-~~

1893 | channel stock watering pits) or when less stringent criteria is shown to be in the public interest.
1894 | An approval of a variance does not change the use designation of the affected water. It may
1895 | change the limits and conditions of an WYPDES permit, TMDL or watershed plan. The process
1896 | for granting a variance is a site-specific action and does not require a Use Attainability Analysis.
1897 | The rationale for a variance will be documented in either the statement of basis on an associated
1898 | WYPDES permit action or in an associated TMDL or watershed plan document.
1899 |

**Recreational Use Designations
Use Attainability Analysis (UAA) Worksheet**

A recreational Use Attainability Aalysis (UAA) is required to support any change in the recreational use designation of a surface water of the state, either to a more stringent or less stringent classification. Completion of a UAA is recommended in cases where there is significant uncertainty about whether or not the current classification is appropriate. ~~As a procedural matter, the Water Quality Division will compile all completed UAAs and make the appropriate classification determination and required submittal to EPA on a semi-annual basis.~~

~~There are three circumstances where it makes sense to complete a UAA and revise the recreation use classification. The first is whenever a stream is currently listed or proposed to be listed as impaired or threatened on the state's 303(d) list. This is to ensure that the proposed listing is based on an assessment using the appropriate pathogen criteria. The Water Quality Division will routinely complete a UAA as part of the listing documentation.~~

~~The second reason is to raise the classification from secondary contact to primary contact on waters that are not currently listed on Table A of the Wyoming Surface Water Classification List but are currently being used or have a high potential to be used for recreational purposes.~~

~~The third reason is to ensure that pathogen limits on new or revised WYPDES permits are based upon the appropriate criteria for the receiving water.~~

I. I. **Name & Location.** Identify where the stream segment starts and ends.

Water body name: _____ Watershed (HUC): _____

_____ Upstream Location: ¼, ¼ Section _____; SEC _____; TWP _____; RNG _____

II. _____ Downstream Location: ¼, ¼ Section _____; SEC _____; TWP _____;
RNG _____

II.

III. **Maps & Photographs.**

_____ Attach a map of adequate scale and detail to accurately depict the water body that is the subject of the reclassification proposal. Also attach photographs that adequately characterize the water body for the purposes of the petition. These should be taken at points that are typical of the stream channel or lake in a sufficient number to clearly illustrate the resource. Each photo point location should also be indicated on the UAA map. The photographs should be accompanied by information including a photo ID number, name of photographer, date and time taken, location and direction from which the photo was taken, and a narrative describing what the photo is intended to depict.

IV.

V. III. Primary Use Factors. If any of the following factors apply, the water should be designated for primary contact recreation. If none of the factors apply, the water is a candidate for a secondary use designation.

Check all that apply:

- Water is located within or flows through a federal, state, or local park or recreation area. Federal, state or local parks should not be construed to mean all public lands, but rather specifically developed and/or designated recreational use areas such as campgrounds, picnic grounds, trailheads, greenways, etc.
- Water is a lake, reservoir or other still body of water. (*Exclude small stock watering ponds*).
- Water is within or flows through a municipality or unincorporated high density housing area.
- Water is a larger perennial stream or game fishery known to be used by sportsmen or other recreationists.
- Water is used or can be used for primary contact activities such as swimming, floating, rafting, canoeing or kayaking.

IV. Use Removal Factors (*only necessary when downgrading from a primary to a secondary use designation*).

Chapter 1, Section 33(b) requires that all petitions to lower a classification or criteria must be based on one or more of the use removal factors listed in Section 33(b)(i) through (vi). Most commonly, the factors that apply to reclassifying a water from a primary to a secondary contact designation is 33(b)(ii), ~~or (v)~~ though there may be unique circumstances where one of the other factors is most appropriate.

Those petitions intending to raise a classification from secondary to primary contact are not subject to the Section 33-(b) factors. Instead, the UAA should demonstrate that primary contact recreation is either an existing use or may be attained with the imposition of more stringent controls or management practices.

Check one or more of the following use removal factors and attach a brief narrative and/or additional information explaining why each checked factor applies to the subject water. If the purpose of the UAA is to raise a classification from secondary to primary, do not check any factor but still provide a narrative explanation of the justification for the increased level of protection.

- (i) Naturally occurring pollutant concentrations prevent the attainment of the classification or use; or

——(ii) Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating state water conservation requirements to enable uses to be met; or

——(iii) Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; or

——(iv) Dams, diversions, or other types of hydrologic modifications preclude the attainment of the classification or use, and it is not feasible to restore the water body to its original condition or to operate such modification in such a way that would result in the attainment of the classification or use; or

~~——(v) Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of the classification or use; or~~

——(vi) Controls more stringent than those required by Sections 301(b) and 306 of the Clean Water Federal Act would result in substantial and widespread economic and social impact. This subsection shall not apply to the derivation of site-specific criteria.

Explanation *(attach additional sheets if necessary)*:

V. Additional Information. Include additional information such as a description of the existing recreational use of the water body, description of or data representative of the flow regime, landowner surveys, etc. that may be useful to the petition.

Petitioner

Date

Section 8VIII. **Implementation.**

(a)A. Classifications and Use Designations.

Upon a final approval by the Administrator for changes in classifications or use designations, the results of a Use Attainability Analysis will be submitted to EPA for approval as a revised water quality standard for Clean Water Act purposes. The revised standard will become effective upon EPA approval or 90 days after submittal, whichever comes first. The final determination by the Administrator is an action that may be appealed to the Environmental Quality Council pursuant to Chapter 1, Section 16 of the Rules of Practice and Procedure.

(b)B. Criteria.

Site-specific changes in water quality criteria can only be implemented administratively by the Water Quality Division on effluent dependent waters. On all other waters where an approved Use Attainability Analysis which would result in the establishment of site-specific criteria for any pollutant has been approved, the department DEQ shall recommend such revised criteria to the Wyoming Environmental Quality Council for adoption pursuant to formal rule-making procedures. The revised criteria shall not become effective until adopted by the Council and filed with the Secretary of State as revised rules.

LP/rm/13-0617

AGRICULTURAL USE PROTECTION POLICY
(Chapter 1, Section 20)

Purpose All surface waters in Wyoming are protected to some extent for agricultural uses. "Agricultural uses" are described in Chapter 1, Section 3 as being either stock watering or irrigation. The standard that applies to the protection of these uses is contained in Chapter 1, Section 20 which states:

Section 20. — Agricultural Water Supply. All Wyoming surface waters which have the natural water quality potential for use as an agricultural water supply shall be maintained at a quality which allows continued use of such waters for agricultural purposes:

Degradation of such waters shall not be of such an extent to cause a measurable decrease in crop or livestock production:

Unless otherwise demonstrated, all Wyoming surface waters have the natural water quality potential for use as an agricultural water supply.

All water quality standards are established for two reasons. The first is to provide a benchmark against which a determination can be made as to whether a waterbody is impaired and requires some kind of corrective action. The second is to provide a basis for establishing permit limits on regulated activities (WYPDES & Section 404 permits). The purpose of this policy is to provide guidelines to be used by the Water Quality Division when translating the narrative goals expressed in the Section 20 standard into appropriate WYPDES permit limits where maintaining agricultural use of the receiving waters is an issue.

Agricultural use of surface water is an opportunistic endeavor. The varying uses as well as the different qualities of the water found in the state are many and the farming and ranching industries have always had to make do with what water is available. The goal expressed in the Section 20 standard is simply to maintain surface water quality at a level that will continue to support the local agricultural uses that have developed around it.

Though the goal is simple, achieving it is not. For the most part, managing water quality for continued agricultural support requires managing the concentration and chemical makeup of dissolved solids. Because of local differences in crop types, soil types and natural water quality and availability, it isn't possible to establish simple numeric criteria for pollutants such as TDS and SAR that will allow an efficient use of surface water for irrigation purposes. The determination of what is acceptable water quality for irrigation must necessarily involve an evaluation of local agricultural practices and background water quality conditions. For livestock watering uses, it is somewhat less complicated because there are fewer variables to consider.

"Measurable Decrease." The first part of translating the standard is defining what is meant by "measurable decrease in crop or livestock production". The phrase implies that there is a pre-existing agricultural use of a stream or drainage prior to an application for a WYPDES discharge permit. For livestock watering purposes, a pre-existing use will always be assumed. For

irrigation purposes, there needs to be either a current irrigation structure or mechanism in place for diverting water from the stream channel, or a substantial acreage of naturally sub-irrigated pasture within a stream floodplain. Where neither of these conditions exist, there can be no irrigation use, nor loss in crop production attributable to water quality.

Where there are pre-existing agricultural uses, it may often be impossible to measure a loss in crops or livestock that can be attributed to water quality because of the many other factors that will affect actual production. It is also important to be able to predict the probability of a measurable decrease in production rather than relying solely on after-the-fact measurements. Therefore, the implementation of the narrative criteria through WYPDES permits will always involve making reasonable judgments and assumptions.

Effluent limits on historic discharges of produced water will not be affected by this policy in relation to the protection of agricultural uses. Where discharges have been occurring for many years, the permitted quality of those discharges shall be considered to be "background" conditions and be fully protective of the agricultural uses that have developed around them.

Therefore, it is not necessary to modify those discharges in order to achieve the goal of "no measurable decrease" in crop or livestock production. It would only be necessary to maintain the existing quality of the discharge. It is important to note, however, that effluent limits on historic discharges may be made where the quality of the discharge is shown to constitute a hazard to humans, livestock or wildlife.

II. — Livestock Watering

(a) — The basic concept in protecting a livestock watering use is to ensure that water quality is not acutely toxic to livestock or does not contain pollutants in concentrations that would affect growth or reproduction. There are basic effluent limitations provided in the WYPDES permit regulations (Chapter 2 of the Water Quality Rules and Regulations) that are intended to ensure that the water is safe for livestock to drink. These limits are:

_____ 5000 mg/L TDS;
_____ 3000 mg/L Sulfate;
_____ 2000 mg/L Chloride;

and each must be achieved at the end of pipe prior to mixing with the receiving stream. In addition to the basic effluent limitations the following limits for livestock protection may be incorporated into WYPDES permits when there is reason to believe they may be associated with a discharge:

Selenium	50 µg/L	Total Recoverable
Fluoride	4000 µg/L	Dissolved
Arsenic	20 µg/L	Total Recoverable
Copper	500 µg/L	Dissolved
Cadmium	50 µg/L	Dissolved
Boron	5000 µg/L	Dissolved

Chromium	1000 µg/L	Dissolved
Lead	100 µg/L	Dissolved
Mercury	10 µg/L	Dissolved
Zinc	2500 µg/L	Dissolved

Livestock watering waiver—An exception to the limits above may be made whenever the background water quality of the receiving water is worse than the value listed for the associated pollutant or when the livestock producer requests use of the water and thereby accepts any potential risk to his livestock.

III. Irrigation—The interpretation of the Section 20 standard for irrigation is more complex than for livestock watering because there are more variables than just the quality of the water to consider. However, after considering the local circumstances relative to irrigation and crop production, effluent limits can be established on WYPDES permits that will be protective of the pre-existing irrigation uses. The goal is to ensure that pre-existing irrigated crop production will not be diminished as a result of the lowering of water quality.

The basic water quality parameters of concern in regard to irrigation are electrical conductivity (EC) and sodium adsorption ratio (SAR). Protection of irrigation uses where WYPDES permits are involved amounts to deriving appropriate effluent limits for EC and SAR in each instance.

Identification and Protection of Irrigation Uses. Implementation of the Section 20 standard through the WYPDES permitting program involves a sequence of decisions based upon the amount and quality of data that is available to the permit writer. The most basic question is whether a proposed discharge will reach irrigated lands. If the discharge will not reach an irrigated field, either because of natural conditions or water management techniques, it could not affect crop production on that field. For the purposes of this policy, irrigated lands include the following:

1. **Artificially Irrigated Lands:** Artificially irrigated lands are those where water is intentionally applied for agricultural purposes. Artificially irrigated lands will be identified by the presence of canals, ditches, spreader dikes, spray irrigation systems or any other constructed mechanism intended to divert water from a stream channel for application on adjacent lands.
2. **Naturally Irrigated Lands:** Naturally irrigated lands are areas of land along stream channels that have enhanced vegetative production due to periodic natural flooding or sub-irrigation. Naturally irrigated lands are those lands where a stream channel is underlain by unconsolidated material and on which the combination of stream flow and channel geometry provides for enhanced productivity of agriculturally significant plants. Naturally irrigated lands may be identified by an evaluation of infra-red aerial photography, surficial geologic maps, wetland mapping, landowner testimony or any combination of that information.

Appropriate effluent limits for EC and SAR will be calculated and applied to WYPDES discharge permits in all instances where the produced water discharge may reach any artificially irrigated lands.

EC and SAR limits will also be applied to WYPDES permits where the produced water discharge may reach stream segments containing sufficient acreage of naturally irrigated land to be considered agriculturally significant. In general, stream segments containing single parcels of naturally irrigated land greater than 20 acres in size or multiple parcels in near proximity that total more than 20 acres shall be considered agriculturally significant. In making this estimation, small drainage bottoms may be excluded from consideration. Two specific criteria which may be used to exclude lands include lack of a persistent active channel and unconsolidated floodplain deposits which are generally less than 50 feet in width.

If there are no pre-existing diversions within reach of a discharge or if the water will be impounded or managed so as not to reach a diversion during the irrigation season, there would be no potential to adversely affect crop production. Likewise, if there are no agriculturally significant, naturally irrigated lands within reach of a discharge there would be no potential to adversely affect crop production. In these circumstances, permit limits would be established to protect other relevant water uses (e.g. livestock watering, wildlife, aquatic life etc.):

~~Data and Information~~ There is a minimum amount of data that must be collected in every circumstance in order to identify existing irrigation uses and to appropriately set effluent limits on discharges that may affect those uses. Additional information that is beyond the minimum requirements can also be considered to fine tune the permitting decisions in a way that best addresses the various interests for the water:

At a minimum the following information must be obtained:

- Location(s) of irrigation diversions and/or naturally irrigated acreage;
 - Crops grown under irrigation;
- Published tolerance values for the most sensitive crop;
 - Season of use
- Description of Irrigation Practices

C. — Establishing Effluent Limits — A 3-tiered decision making process will be used to establish appropriate effluent limits for EC and SAR whenever a proposed discharge will likely reach irrigated lands. Tier 1 refers to a procedure for setting default EC and SAR limits and is useful in situations where the irrigated crops are salt-tolerant and/or the discharge water quality is relatively good. Tier 2 refers to a process whereby the default limits may be refined to equal background water quality conditions and is intended to be used in situations where the background EC and SAR is worse than the effluent quality. As a final measure, Tier 3 applies where background EC and SAR is better than the effluent quality. The purpose of a Tier 3 analysis is to provide sufficient justification to establish effluent limits that are of a lower quality than the pre-discharge background conditions. Under Tier 3, effluent limits may be established based upon local site conditions and irrigation practices to a level that can be demonstrated to cause no harm to the existing irrigation uses.

1. Tier 1—Default EC and SAR limits—Default limits for EC and SAR may be used where the quality of the discharge water is relatively good or the irrigated crops are salt-tolerant. The default values shall be based upon the published soil EC tolerance values for the most sensitive crop and shall be calculated as follows:

a.——Default EC limits will be based upon 100 percent yield threshold values for soil EC reported by the USDA Agricultural Research Service (ARS) Salt Tolerance Database. In the event that the species of interest is not included in the ARS Salt Tolerance Database, then the following alternative references can be consulted:

- (1) Hanson et al. 1999. Agricultural Salinity and Drainage. DANR Pub. 3375, Univ. of Calif. Davis;
- (2) Ayers and Westcot. 1985. Water Quality for Agriculture. UN-FAO Irrigation and Drainage Paper 29 (revised); and
- (3) CPHA. 2002. Western Fertilizer Handbook. 9th Edition. Interstate Pub., Inc., Danville, IL.

The relationship between soil EC values and irrigation water EC values will be: $EC(\text{soil}) = 1.5 EC(\text{water})$, i.e., the published soil EC threshold obtained from the appropriate reference will be divided by the soil concentration factor of 1.5 to establish the discharge EC limit.

However, in circumstances where the background water quality of the receiving water(s) is known to be significantly better than would otherwise be required based on a theoretical 100% yield, effluent limits may be set to maintain that higher quality.

—————(B)——Default SAR values will be extrapolated from the Hanson et al. (1999) Chart (see Figure 1 attached) based upon the default EC value in each circumstance up to a maximum default value of 10. The effluent limit for SAR will be determined in conjunction with EC so that the relationship of SAR to EC remains within the “no reduction in rate of infiltration” zone of Figure 1. The maximum SAR limit is, therefore, set below the line separating the “no reduction in rate of infiltration” zone from the “slight to moderate reduction in infiltration” zone in the Hanson et al. diagram, which is represented by the following equation: $SAR < (7.10 \times EC) - 2.48$. It must be noted that SAR values are tied to the EC concentration and might need to be adjusted to correlate to the actual EC concentration rather than the theoretical maximum.

Use of the Hanson diagram to extrapolate default effluent limits for SAR is capped at a maximum SAR of 10 to minimize the potential for sodium build-up in poorly drained soils. This 10 SAR cap is only intended to apply when utilizing the default procedure and may be modified according to the provisions of section C.2 “Refining EC and SAR Limits”, described below.

b.——At a minimum, the EC and SAR limits will apply during the irrigation season and when flows are sufficient to support the use. On sub-irrigated lands and passively irrigated lands such as those under spreader dike systems, the irrigation season shall generally be considered to be

year-round.

2. Refining EC and SAR limits (Tiers 2&3) Establishing EC and SAR limits based simply on the most sensitive crop is the most stringent approach and would be protective of the irrigation use in all circumstances. It may be possible to refine those values if additional information is available showing that less stringent effluent limits would be adequately protective. This type of showing can be made by demonstrating that background water quality conditions are of a lower quality than the default values or by demonstrating that because of local soil conditions and irrigation practices there would be no harm to crop production from less stringent EC and SAR limits.

a. Tier 2 – Background Water Quality If sufficient data is available to demonstrate or calculate that the pre-existing background water quality at the point(s) of diversion is worse than the effluent quality, EC and SAR effluent limits may be based upon those background conditions rather than tolerance values for the most sensitive crop.

(1). Measured Data: Background water quality may be established based upon published pre-discharge historic data. Generally, this data only exists on larger, perennial, mainstem stream channels where historic gauging has taken place. Actual measured data is the most reliable means of establishing background and must be considered on those waters where it is available.

(2). Calculated Background: On intermittent and ephemeral stream channels, pre-discharge water quality data is usually scarce or non-existent and very difficult to collect. In these circumstances, background water quality can be estimated by conducting soil surveys on land that has been historically irrigated from the subject stream.

In the event that soil studies are used as a means to estimate baseline water quality for a given drainage, the following requirements apply:

(i) Sample Site Selection: Soil samples shall be taken at semi-random sites within each contiguous irrigated segment downstream of the proposed discharge. "Semi-random" in this case is intended to mean that the applicant will identify the various major distinguishing terrain zones within each irrigated segment and select sample sites randomly within each terrain zone. For example, the channel bottom may constitute one terrain zone, the first small terrace above the channel bottom may be another terrain zone, and the adjacent meadow or field may be a single remaining terrain zone, or that meadow / field may actually be comprised of several other known zones such as discharge-affected soils vs. non-affected soils, sub-irrigated reaches vs. non-sub-irrigated reaches, etc.

(ii) Number of Sample Sites: Listed below are the minimum number of soil sample sites required for each of the identified terrain zones (based on zone area) within a contiguous irrigated segment:

Zone Area	Minimum Number of Sample Sites
-----------	--------------------------------

0—5 acres	3
5—10 acres	5
10+ acres	7

(iii) Sample Collection:—Sample sites must be located a minimum of 50 feet apart from one another. Each sample site shall be sampled at a minimum of four depths (0-12", 13-24", 25-36", 37-48"). If alfalfa is present within the terrain zone, each sample site within that terrain zone must be sampled at a total of 6 depths (at the above-noted depths, plus 49-60" and 61-72"). Each 12-inch depth sample must be analyzed either individually or combined (composited) with other corresponding depth samples from the other sample sites within the same terrain zone (i.e., all 0-12" samples from a given terrain zone bulked together and analyzed as a single composite sample).

(iv) Sample Analysis: At a minimum, a saturated paste extract for each sample shall be analyzed for EC. Though not necessary for the estimation of background water conductivity, it is advisable to also analyze the soil samples for pH, SAR, soil texture and exchangeable sodium percentage (ESP) to avoid having to duplicate the sampling if the results indicate that a "no harm analysis" (*item b. below*) needs to be completed. Percent organic matter shall be analyzed in the surface 0-12 inch samples only. In addition, analyses to identify the clay mineralogy types present in the soils may also be warranted.

Figure 1 Hanson Chart



(v) Soil Report Preparation: At a minimum the applicant shall submit:

i. A map or diagram identifying where each of the soil sample sites were located. At a minimum, the map or diagram must show the basic topography and stream course, irrigation structures (if present - such as spreader dams or head gates), estimated boundaries of the irrigated acreage, surface ownership of the irrigated acreage (including downstream irrigated areas) and section / township / range identification. This map must also show any delineated terrain zones, plus elevations of the terrain zones;

ii. An accompanying location table which includes the quarter / quarter, section, township, range, and latitude / longitude for each sample site. (Hanson et al., 1999)

iii. Summary data table showing the analytical results for each of the soil parameters listed above, for each depth, at each sample site.

iv. All associated lab sheets.

b. Tier 3 - No Harm Analysis (Tier 3). The actual effects of EC and SAR on crop production are variable based upon soil type and chemistry and may be mitigated to some extent by managing irrigation practices. EC and SAR effluent limits may also be established based upon a scientifically defensible site specific study that examines local soil characteristics, natural water quality, expected crop yield, irrigation practices and/or any other relevant factor related to crop production.

Because of the very site-specific nature of this approach and the number and complexity of variables that may need to be considered, it is not very useful to specify any particular type of analysis in this policy. When taking this approach, however, there is a burden of proof placed upon the applicant to demonstrate through a comprehensive study that levels of EC and/or SAR higher than either the default values or estimated background water

quality would most likely not measurably harm an existing irrigation use. This approach will allow a degree of creativity regarding landowner preferences and management. Refined limits for EC and SAR resulting from a "no harm" analysis should incorporate a reasonable margin of safety to account for variables that cannot be precisely measured or modeled.

c. ~~Irrigation Waiver~~An exception to EC or SAR limits established under the Tier 1, 2 or 3 procedures may be made when affected landowners request use of the water and thereby accept any potential risk to crop production on their lands. Irrigation waivers will only be granted in association with an irrigation management plan that provides reasonable assurance that the lower quality water will be confined to the targeted lands.

d. ~~Reasonable Access Requirement~~The procedure for establishing default EC and SAR limits is intended to provide the ability to permit the discharge of high quality water without an obligation to conduct site specific studies. In practice, the use of the default procedure will only apply where permitted discharges are of exceptionally high quality. In many applications, appropriate limits for EC and SAR will have to be based on refined procedures rather than default. Because the refined procedures require the acquisition of site specific data, it is necessary that permit applicants and/or the DEQ have reasonable access to obtain the required information. In circumstances where a landowner chooses to deny access for the purpose of developing a Section 20 analysis, EC and SAR limits will be based upon the best information that can be reasonably obtained and may be less stringent than Tier 1 default limits.

WJD/7-0156.DOC
2-26-2007

SECTION 20 DECISION PROCESS

