

**Response to Comments Received during the Informal Outreach
Conducted from June 7, 2017 through July 31, 2017**

Introduction

On June 17, 2017 the Wyoming Department of Environmental Quality, Solid and Hazardous Waste Division (Department) gave public notice of proposed changes to Chapters 4 and 6 of the Solid Waste Rules and Regulations (Rules) and announced a series of three (3) informal outreach meetings throughout the state. Outreach meetings were held in Sundance July 12th, Rawlins July 13th, and Casper July 14th. Sixteen (16) people attended the outreach meetings. The initial outreach period ended July 14, 2017, but it was extended until July 31, 2017 to give the public an opportunity to comment using the Department's online comment process. During the normal and extended informal online comment period, no comments were received online, therefore the responses below are based on comments received verbally during the outreach meetings.

Response to comments on changes to Chapter 4

1. General comment received at the Sundance and Rawlins outreach meetings:

If we no longer have a local municipal waste landfill, how will we manage construction/demolition (CD) waste and dead animals?

Response:

The legislature established the Cease and Transfer Program to help local governments close small unlined local landfills and develop the infrastructure needed to transfer waste to more cost-effective lined regional landfill. CD waste and dead animals can both be disposed in these landfills. Local governments may choose to permit a local CD waste landfill, although this option may be cost-prohibitive. The Department has revised rules for transfer stations making easier for local governments to implement local options such as CD waste recycling and dead animal composting to minimize the amount of waste that needs to be transported to regional landfills for disposal. In addition, the Department, in conjunction with the Wyoming Game and Fish Department, has revised policies for the management of dead animals. These revisions encourage some level of composting to minimize threats to groundwater. We believe that composted whole animals and scraps from meat processing facilities may safely be disposed in CD landfills. Notably, to prevent the spread of chronic wasting disease and other diseases to game animals, all whole game animals, scraps from game meat processors and compost from game animals must be disposed in a permitted landfill.

2. Staff from Trihydro Corporation suggested that groundwater monitoring requirements for CD landfills should be like the monitoring requirements for municipal solid waste landfills in Chapter 2 of the Solid Waste Rules and Regulations (SWRR).

Response:

In response to this comment the Department researched the June 12, 2009 Ohio EPA study “An Evaluation of Leachate from Ohio’s Construction and Demolition Debris Landfills”. This study found that trace elements, light metals and other ions were the most commonly detected parameters in CD landfill leachate. For the most part, average concentrations of volatile organic compounds (VOCs) detected in leachate were below maximum contaminant levels (MCLs) or other health based levels.

The Ohio study listed eighteen (18) leachate parameters possibly impacting groundwater at Ohio CD landfills. Three of these were gasoline related organics and the other 15 were metals, trace elements and other ions. The study indicated that the three gasoline related contaminants could be due to the use of petroleum contaminated soils as routine cover at CD landfills. Wyoming’s Chapter 2, Appendix C list includes twelve of the remaining fifteen (15) parameters on the Ohio list.

In a January 1995 USEPA study, “Damage Cases: Construction and Demolition Landfills” (PB95-208911, 530-R-95-020), the EPA noted that in eleven (11) case studies most of the sites were monitored for a wide range of organic and inorganic constituents, but “virtually all of the contamination was associated with inorganics”. The EPA identified eight constituents that exceeded state groundwater protection standards or federal drinking water standards most frequently. Chapter 2, Appendix C includes seven (7) of these constituents and the eighth, lead, would be included in proposed Appendix A or B assessment monitoring.

In a February 1995 study, “Construction and Demolition Landfills” (PB95-208906, 530-R-95-018), the EPA identified seven (7) constituents as being potentially problematic. Three (3) of these constituents are on the Appendix C list and the remaining four (4) would be included in proposed Appendix A or B assessment monitoring. This study also noted that eighty-three percent (83%) of the states studied that required monitoring, had monitoring requirements less stringent than those for municipal landfills.

While these studies are a bit old, the Department believes that they support the use of Chapter 2, Appendix C trace elements, light metals and ions for detection monitoring. Additional constituents can be added to the monitoring list to assess the nature and extent of a release if elevated concentrations of Appendix C constituents are detected. The Department does not believe that the additional cost to analyze for Chapter 2, Appendix A constituents is warranted for detection monitoring at a CD landfill. In addition, the Department believes that thorough waste screening procedures should help minimize the potential for organic compounds to contaminate groundwater.

Proposed text was added to Section 7(s) requiring closure of a disposal unit or area, in the case of an area fill, if groundwater contamination exceeds groundwater protection standards. Future disposal units or areas, in the case of an area fill shall be either:

“(i) Constructed with a composite liner, leachate collection system and final cover with a permeability less than or equal to the permeability of the bottom liner system, or;”

“(ii) The operator shall demonstrate that future disposal units or areas, in the case of an area fill, meet standards established by the Administrator or that concentrations of pollutants will not exceed groundwater protection standards for constituents specified by the Administrator at a relevant

point of compliance established by the Administrator that is no more than 150 meters (492 feet) from the waste management unit boundary on land owned by the owner of the landfill.”

Related to this, Chapter 4, Section 6 (k) includes conditions for when an engineered containment system may be required.

3. Comments:

At the Casper outreach meeting, there was a general discussion that Chapter 4, Section 7(s) does not allow the operator an opportunity to demonstrate that it may be possible to operate in other areas of the facility without engineered containment after a release has been detected. Commenters also recommended that Section 6(k) should note Department standards specifying when engineered containment isn't necessary in addition to demonstrations made by landfill operators.

Response:

The Department made several changes in response to this general discussion. To make these changes clear, the rule as originally proposed is presented below followed by proposed changes in redline/strikeout format. New Sections 6(k) and 7(s) have also been revised to be consistent with W.S. 35-11-527(c) that requires the relevant point of compliance to be on land owned by the owner of the landfill. Proposed text in new Section 8(b)(i)(A) (detection monitoring), new Section 8(b)(v)(C) (assessment monitoring), and new Section 12(a)(i) (corrective action) was also edited as shown below to address the land ownership requirement.

Text was also edited to accommodate landfills utilizing an area fill disposal method rather than a series of individual disposal units (trenches). To be consistent with Chapter 2 and W.S. 35-11-526 (a) definitions of an engineered containment system, “leachate collection system” was added to Section 6(k)(i) and Section 7(s)(i). The section on exceeding groundwater protection standards in Section 6(k)(i)(B) was deleted because this issue is addressed in Section 7(s). Section 7 (s) was also edited to clarify that the disposal unit or area believed to be leaking must be closed.

In relation to these requirements for engineered containment systems, the Department has reevaluated the broad use of the National Primary Drinking Water Regulations, 40 C.F.R. Part 141 for demonstrations that engineered containment is not necessary. This provision was initially included in the proposed CD landfill rule change because it is consistent with W.S. 35-11-527 performance based design standards for municipal solid waste landfill units. However, the review of constituents detected at CD landfills described above indicates that it may not be appropriate to demonstrate that a CD landfill will not exceed specified contaminant limits for the same broad list of constituents as statutes require for an MSW landfill. To provide more flexibility and site specific decision making, the Department is proposing that an operator would need to demonstrate that “concentrations of pollutants will not exceed groundwater protection standards for constituents specified by the Administrator”. This change has been made in proposed Sections 6(k)(i)(A) and 7 (s)(ii) as shown below.

Proposed Chapter 4, Section 6(k) presented during informal outreach:

(k) Engineered containment:

(i) The Administrator may require an engineered containment system in future disposal areas, including a composite liner and final cover with a permeability less than or equal to the permeability of the bottom liner system, in new units and lateral expansions if:

(A) The operator cannot demonstrate that concentrations of pollutants listed in the National Primary Drinking Water Regulations, 40 C.F.R. Part 141, will not be exceeded at a relevant point of compliance established by the Administrator that is no more than 150 meters (492 feet) from the waste management unit boundary on land owned, leased, or otherwise controlled by the Operator, or;

(B) When groundwater contamination exceeds Department standards at a relevant point of compliance established by the Administrator that is no more than 150 meters (492 feet) from the waste management unit boundary on land owned, leased, or otherwise controlled by the Operator.

(ii) Engineered containment systems, if required by the Administrator, shall be designed and constructed as specified in Chapter 2, Section 7 (g) and (h).

Proposed changes to Chapter 4, Section 6(k) based on comments made during informal outreach:

(k) Engineered containment:

(i) The Administrator may require an engineered containment system ~~in future disposal areas~~, including a composite liner, leachate collection system, and final cover with a permeability less than or equal to the permeability of the bottom liner system, in new units and lateral expansions if:

(A) The facility design does not meet standards established by the Administrator; or

(B) The operator cannot demonstrate that concentrations of pollutants will not exceed groundwater protection standards for constituents specified by the Administrator listed in the National Primary Drinking Water Regulations, 40 C.F.R. Part 141, will not be exceeded at a relevant point of compliance established by the Administrator that is no more than 150 meters (492 feet) from the waste management unit boundary on land owned, ~~leased, or otherwise controlled~~ by the ~~Operator~~ owner of the landfill; or;

~~(B) When groundwater contamination exceeds Department standards at a relevant point of compliance established by the Administrator that is no more than 150 meters (492 feet) from the waste management unit boundary on land owned, leased, or otherwise controlled by the Operator.~~

(ii) Engineered containment systems, if required by the Administrator, shall be designed and constructed as specified in Chapter 2, Section 7 (g) and (h).

Proposed Chapter 4, Section 7 presented during informal outreach:

(s) Groundwater quality: Solid waste disposal facilities shall not be allowed to alter groundwater quality, as determined by groundwater monitoring. If groundwater contamination exceeds Department standards at a relevant point of compliance established by the Administrator, the disposal unit shall promptly be closed on a schedule approved by the Administrator and the landfill shall either be closed or future disposal areas shall be constructed with an engineered containment system.

Proposed changes to Chapter 4, Section 7 based on comments received during informal outreach:

(s) Groundwater quality: Solid waste disposal facilities shall not be allowed to alter groundwater quality, as determined by groundwater monitoring. If groundwater contamination exceeds Department standards at a relevant point of compliance established by the Administrator, the leaking disposal unit or area, in the case of an area fill, shall promptly be closed on a schedule approved by the Administrator. ~~and the landfill shall either be closed or future disposal areas shall be constructed with an engineered containment system.~~ Future disposal units or areas, in the case of an area fill, shall be either:

(i) Constructed with a composite liner, leachate collection system and final cover with a permeability less than or equal to the permeability of the bottom liner system, or;

(ii) The operator shall demonstrate that future disposal units or areas, in the case of an area fill, meet standards established by the Administrator or that concentrations of pollutants will not exceed groundwater protection standards for constituents specified by the Administrator at a relevant point of compliance established by the Administrator that is no more than 150 meters (492 feet) from the waste management unit boundary on land owned by the owner of the landfill.

Proposed Chapter 4, Section 8(b)(i)(A) presented during informal outreach:

(A) A groundwater system must be installed which consists of a sufficient number of wells to monitor water from the uppermost aquifer which may be affected by leakage from the facility or unit. The system must be capable of monitoring the quality of background groundwater and groundwater passing downgradient wells located within 150 meters (492 feet) of the waste management unit boundary on land owned, leased, or otherwise controlled by the operator. Well locations must be approved by the Administrator.

Proposed changes to Chapter 4, Section 8(b)(i)(A):

(A) A groundwater system must be installed which consists of a sufficient number of wells to monitor water from the uppermost aquifer which may be affected by leakage from the facility or unit. The system must be capable of monitoring the quality of background groundwater and groundwater passing ~~downgradient wells located~~ the relevant point of compliance that shall be within 150 meters (492 feet) of the waste management unit boundary on land owned by the owner of the landfill, ~~leased, or otherwise controlled by the operator.~~ Well locations must be approved by the Administrator.

The system must be capable of monitoring the quality of background groundwater and groundwater passing the relevant point of compliance established by the Administrator that shall be within 150 meters (492 feet) of the waste management unit boundary on land owned by the owner of the landfill. Well locations must be approved by the Administrator.

Proposed Chapter 4, Section 8(b)(v)(C) presented during informal outreach:

(C) If one or more constituents are detected at statistically significant levels above the groundwater protection standard at a relevant point of compliance established by the Administrator that is no more than 150 meters (492 feet) from the waste management unit boundary on land owned, leased, or otherwise controlled by the Operator, the owner or operator shall within fourteen (14) days notify the Administrator of the constituents detected above the groundwater protection standard in a written report with supporting documentation.

Proposed changes to Chapter 4, Section 8(b)(v)(C):

(C) If one or more constituents are detected at statistically significant levels above the groundwater protection standard at a relevant point of compliance established by the Administrator that is no more than 150 meters (492 feet) from the waste management unit boundary on land owned ~~by the owner of the landfill, leased, or otherwise controlled by the Operator~~, the owner or operator shall within fourteen (14) days notify the Administrator of the constituents detected above the groundwater protection standard in a written report with supporting documentation.

4. Annual Reports.

Comment:

Annual report requirements were added to the proposed rule to replace periodic permit renewal applications. Commenters asked if W.S. 35-11-523 “Annual Report” applies only to municipal solid waste landfills or if it applies to other facilities like CD landfills and transfer stations as well.

Response:

The Department confirmed with the Attorney General’s office that the annual reporting requirements of W.S. 35-11-523 apply only to municipal solid waste landfills with lifetime permits.

5. Groundwater monitoring constituent list.

Comment:

Commenters in Casper recommended that Chapter 4 simply reference Chapter 2 monitoring constituents rather than reproducing the lists in Chapter 4.

Response:

The Chapter 4 appendix with monitoring constituents has been removed and text throughout Chapter 4 revised to reference Chapter 2 monitoring constituents.

6. Timing of annual reports.

Comment:

The proposed rule requires annual reports to be submitted by March 1 each year. At the Casper outreach meeting it was suggested that deadlines for annual reports should be staggered.

Response:

The Department doesn't anticipate a large number of CD landfills. We think it would be more trouble than necessary for operators and the Department to keep track of individual reporting dates, therefore the proposed rule was not changed.

Response to comments on changes to Chapter 6

7. Groundwater monitoring

Comments:

At the Casper meeting there was a general discussion about groundwater monitoring at transfer, treatment, and storage facilities. There was a brief discussion about using Chapter 2 monitoring requirements.

Response:

Groundwater monitoring is not common at transfer, treatment, and storage facilities because most waste management occurs in containers or in ways that minimize threats to surface and groundwater. However, groundwater monitoring may be appropriate in some cases. Since Chapter 2 Appendix C constituents are useful in detecting a release from a facility that manages municipal solid waste, the Department has retained the monitoring constituents previously proposed. Rather than list the Chapter 2, Appendix C constituents, the text now references Chapter 2, Appendix C instead in new Section 8 Section b(iii). The rule continues to provide flexibility for the Administrator to specify alternative monitoring parameters based on the wastes managed at the facility.

The detection and assessment monitoring requirements have been edited and now mirror those proposed in Chapter 4. The Department believes this will clarify requirements and be more consistent with monitoring at other facility types.

The following ("clean") text was proposed at the outreach meetings:

(iii) Analyses:

(A) Detection monitoring : Samples shall be analyzed for pH, Total Dissolved Solids (TDS), Chemical Oxygen Demand (COD), Total Organic Carbon (TOC), Ammonia

as N, Nitrate as N, Bicarbonate, Carbonate, Chloride, Fluoride, Calcium, Magnesium, Potassium, Sodium, Sulfate, Iron, and Manganese, . Water temperature, specific conductance, pH, and static water level measurements shall be taken in the field during each monitoring event. At least four (4) quarterly samples shall be taken initially. The Administrator may reduce detection monitoring frequency to no less than annual after collection of sufficient samples to establish background.;

(B) The Administrator may specify alternative or additional parameters for analyses, including organic chemical constituents, based on the wastes managed at the facility.

(C) Assessment monitoring: The Administrator may require assessment monitoring if a statistically significant increase over background is detected in any downgradient well for any constituent with an MCL or class of use based limit. The Administrator may require additional wells, a revised set of sampling parameters and revised sampling schedule for assessment monitoring. The Administrator will establish groundwater protection standards for constituents detected above background in downgradient wells. ;

The Department's current rule proposal replaces the current rule in Section 6, (b)(iv) and (v) entirely with the following text based on proposed changes to Chapter 4:

(iii) Detection monitoring: Operators required to monitor groundwater shall institute a detection monitoring program by initially collecting four (4) quarterly samples from each well and testing each sample for the constituents specified in Chapter 2, Appendix C unless alternate or additional constituents are required by the Administrator based on wastes managed at the facility. After collection of the initial four (4) samples, semiannual samples shall be collected unless the Administrator approves an alternate sampling frequency.

(A) The owner or operator must determine whether or not there is a statistically significant increase over background values as follows:

(I) The owner or operator must compare the groundwater quality of each parameter or constituent at each monitoring well using the approved statistical method; and

(II) Within thirty (30) days after completing sampling and analysis, unless an alternate time frame is approved by the Administrator, the owner or operator must determine whether there has been a statistically significant increase over background at each monitoring well.

(B) If there is a statistically significant increase over background for one or more constituents in any well the operator must:

(I) Notify the Administrator in a written report with supporting documentation and place a copy of the report in the facility operating record within fourteen (14) days.

(II) The owner or operator may be required by the Administrator to initiate an assessment monitoring program unless within ninety (90) days or an alternate time frame approved by the Administrator, the owner or operator demonstrates to the Administrator in writing that the statistically significant increase over background is not due to the solid waste facility or unit, but that the difference is due to another source of pollution, error in sampling, analysis or statistical evaluation, or natural variation in groundwater quality. The owner or operator shall prepare a report documenting this demonstration, and following approval by the Administrator, place the report in the operating record for the facility. If the demonstration is approved, the owner or operator shall continue detection monitoring.

(III) If a successful demonstration is not made:

(1.) The owner or operator shall request that the Administrator classify groundwater according to Wyoming Water Quality Rules and Regulations and establish groundwater protection standards.

(iv) Assessment Monitoring:

(A) If the concentration of one or more constituents exceeds background, the Administrator may require the operator to analyze groundwater samples for some or all of the constituents found in Chapter 2, Appendix A or B based on the wastes managed at the facility. Some or all of these constituents may be added to the detection and/or assessment monitoring program for the facility.

(B) After groundwater protection standards have been established, within thirty (30) days after completing sampling and analysis, unless an alternate time frame is approved by the Administrator, the owner or operator shall determine if there has been a statistically significant increase over a groundwater protection standard in each downgradient well specified by the Administrator using a statistical method approved by the Administrator.

(C) If one or more constituents are detected at statistically significant levels above the groundwater protection standard at a relevant point of compliance established by the Administrator that is no more than 150 meters (492 feet) from the waste management unit boundary on land owned by the owner of the facility, the owner or operator shall within fourteen (14) days notify the Administrator of the constituents detected above the groundwater protection standard in a written report with supporting documentation.

(I) Unless the owner or operator demonstrates that the statistically significant increase was caused by another source, resulted from an error in sampling, analysis, or statistical evaluation, or from natural variation in groundwater quality, the Administrator may require the owner or operator to characterize the nature and extent of the release, conduct an assessment of corrective measures, and institute corrective action remedies approved by the Administrator.

(v) Facilities required to monitor groundwater shall conduct statistical evaluations of groundwater data using the methods in Chapter 2, Section 9(b)(i)(C)(V) through (VII).

8. Reporting

Comments:

The draft rule included the annual reporting requirements below. However, commenters noted that in many cases there may be no need for an annual report. Commenters recommended that the rule instead list specific conditions or circumstances when operators need to report to the Department. The following “clean” text was proposed at the outreach meetings:

(b) Annual reporting standards for all facilities: The following information shall be provided to the Administrator no later than March 1, on a form provided by the Administrator. Unless and alternative is approved by the Administrator, operators shall submit two (2) complete paper copies and one (1) electronic copy of the reports.

(i) The facility name and the name, address, and phone number of the operator;

(ii) A summary description of facility operations conducted during the past calendar year including:

(A) Volume of each waste type managed during the year;

(B) Volume of each waste type remaining at the site at the end of the year.

(iii) Evaluation of closure costs and the adequacy of financial assurance;

(iv) If monitoring is required, operators shall provide the Administrator with copies of all environmental monitoring data not previously submitted after a sampling event. Operators may be required to submit supporting charts and/or maps that represent the data.

(c) Fires and other emergencies: The operator shall report fires and other emergencies to the Administrator as soon as reasonably possible.

Response:

The Department agrees that annual reporting may not be necessary in many cases and is now proposing to replace the text above with the following:

(b) General reporting requirements for all facilities: Operators shall submit a report or permit amendment to the Administrator under the following circumstances:

(i) Fires and other emergencies: The operator shall report fires and other emergencies to the Administrator as soon as reasonably possible.

(ii) Monitoring: If monitoring is required, following each sampling event, operators shall provide the Administrator with copies of all required environmental monitoring data and statistical evaluations within thirty (30) days after completion of sampling and analysis unless the Administrator approves a reporting delay for good

cause. Operators may be required to submit monitoring reports with supporting charts and/or maps that represent the data. Monitoring data shall be submitted electronically in a format specified by the Administrator.

(iii) General facility changes: A permit amendment application shall be submitted prior to implementing any change that would result in non-compliance with the facility permit or the approved permit application. If financial assurance is required, the operator shall submit a permit amendment application to the Administrator prior to implementing any change affecting the amount of financial assurance. Permit amendments shall follow the requirements of Chapter 1 of the Solid Waste Rules and Regulations.

(iv) Other circumstances specified by the Administrator.