Volume 44, Number 3
Pages 489–668
February 1, 2019

SALUS POPULI SUPREMA LEX ESTO

"The welfare of the people shall be the supreme law."

JOHN R. ASHCROFT

SECRETARY OF STATE

MISSOURI REGISTER

The *Missouri Register* is published semi-monthly by

SECRETARY OF STATE

JOHN R. ASHCROFT

Administrative Rules Division

James C. Kirkpatrick State Information Center

600 W. Main

Jefferson City, MO 65101

(573) 751-4015

ISSN 0149-2942, USPS 320-630; periodical postage paid at Jefferson City, MO

Subscription fee: $72.00 per year

POSTMASTER: Send change of address notices and undelivered copies to:

MISSOURI REGISTER
Office of the Secretary of State
Administrative Rules Division
PO Box 1767
Jefferson City, MO 65102

The *Missouri Register* and *Code of State Regulations* (CSR) are available on the Internet. The Register address is www.sos.mo.gov/adrules/moreg/moreg and the CSR is www.sos.mo.gov/adrules/csr/csr. These websites contain rulemakings and regulations as they appear in the paper copies of the Registers and CSR. The Administrative Rules Division may be contacted by email at rules@sos.mo.gov.

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MISSOURI REGISTER

February 1, 2019 Vol. 44 No. 3 **Pages 489–668**

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Documents will be accepted for filing on all regular workdays from 8:00 a.m. until 5:00 p.m. We encourage early filings to facilitate the timely publication of the *Missouri Register*. Orders of Rulemaking appearing in the *Missouri Register* will be published in the *Code of State Regulations* and become effective as listed in the chart above. Advance notice of large volume filings will facilitate their timely publication. We reserve the right to change the schedule due to special circumstances. Please check the latest publication to verify that no changes have been made in this schedule. To review the entire year's schedule, please check out the website at www.sos.mo.gov/adrules/pubsched.

HOW TO CITE RULES AND RSMO

RULES

The rules are codified in the *Code of State Regulations* in this system–

Title		Division	Chapter	Rule
3	CSR	10-	4	.115
Department	*Code of State Regulations*	Agency Division	General area regulated	Specific area regulated

and should be cited in this manner: 3 CSR 10-4.115.

Each department of state government is assigned a title. Each agency or division in the department is assigned a division number. The agency then groups its rules into general subject matter areas called chapters and specific areas called rules. Within a rule, the first breakdown is called a section and is designated as (1). Subsection is (A) with further breakdown into paragraphs 1., subparagraphs A., parts (I), subparts (a), items I. and subitems a.

The rule is properly cited by using the full citation, for example, 3 CSR 10-4.115 NOT Rule 10-4.115.

Citations of RSMo are to the *Missouri Revised Statutes* as of the date indicated.

Code and *Register* on the Internet

The *Code of State Regulations* and *Missouri Register* are available on the Internet.

The *Code* address is www.sos.mo.gov/adrules/csr/csr

The *Register* address is www.sos.mo.gov/adrules/moreg/moreg

These websites contain rulemakings and regulations as they appear in the *Code* and *Registers*.

Rules appearing under this heading are filed under the authority granted by section 536.025, RSMo 2016. An emergency rule may be adopted by an agency if the agency finds that an immediate danger to the public health, safety, or welfare, or a compelling governmental interest requires emergency action; follows procedures best calculated to assure fairness to all interested persons and parties under the circumstances; follows procedures which comply with the protections extended by the *Missouri* and the *United States Constitutions*; limits the scope of such rule to the circumstances creating an emergency and requiring emergency procedure, and at the time of or prior to the adoption of such rule files with the secretary of state the text of the rule together with the specific facts, reasons, and findings which support its conclusion that there is an immediate danger to the public health, safety, or welfare which can be met only through the adoption of such rule and its reasons for concluding that the procedure employed is fair to all interested persons and parties under the circumstances.

Rules filed as emergency rules may be effective not less than ten (10) days after filing or at such later date as may be specified in the rule and may be terminated at any time by the state agency by filing an order with the secretary of state fixing the date of such termination, which order shall be published by the secretary of state in the *Missouri Register* as soon as practicable.

All emergency rules must state the period during which they are in effect, and in no case can they be in effect more than one hundred eighty (180) calendar days or thirty (30) legislative days, whichever period is longer. Emergency rules are not renewable, although an agency may at any time adopt an identical rule under the normal rulemaking procedures.

Title 4—DEPARTMENT OF ECONOMIC DEVELOPMENT
Division 240—Public Service Commission
Chapter 40—Gas Utilities and Gas Safety Standards

EMERGENCY RULE

4 CSR 240-40.033 Safety Standards–Liquefied Natural Gas Facilities

PURPOSE: This rule prescribes safety standards for liquefied natural gas facilities used in the transportation of gas by pipeline that is subject to the pipeline safety standards in 4 CSR 240-40.030. This rule adopts the federal regulations on this subject matter that apply to operators of liquefied natural gas facilities used in the transportation of gas by pipeline that is subject to the federal pipeline safety laws and pipeline safety standards.

*EMERGENCY STATEMENT: This emergency rule is necessary because the first liquefied natural gas facility that will be used in the transportation of gas by pipeline was established in Missouri in November 2018. The Missouri Public Service Commission is the state agency designated to protect the public health, safety, and welfare of the citizens of Missouri as those protections relate to intrastate natural gas pipelines. The emergency rule adopts the federal pipeline safety laws and standards to place the liquefied natural gas facility under the safety jurisdiction of the commission. The Public Service Commission finds that a compelling governmental interest requires this emergency action since, absent adoption of federal pipeline safety laws and standards, the commission lacks the authority to enforce liquefied natural gas safety regulations. A proposed rule, which covers the same material, is published in this issue of the **Missouri Register**. The scope of this emergency rule is limited to the circumstances creating the emergency and complies with the protections extended in the **Missouri** and **United States Constitutions**. The emergency rule is fair to all interested stakeholders and parties under the circumstances. This emergency rule was filed December 19, 2018, becomes effective December 29, 2018, and expires June 26, 2019.*

(1) As set forth in the *Code of Federal Regulations* (CFR) dated October 1, 2017, 49 CFR part 193 is incorporated by reference and made a part of this rule. This rule does not incorporate any subsequent amendments to 49 CFR part 193. The *Code of Federal Regulations* is published by the Office of the Federal Register, National Archives and Records Administration, 8601 Adelphi Road, College Park, MD 20740-6001. The October 1, 2017 version of 49 CFR part 193 is available at www.gpo.gov/fdsys/search/showcitation.action.

(2) The commission adopts the federal pipeline safety regulations for liquefied natural gas facilities, 49 CFR part 193, as rules of the commission.

(3) For purposes of this rule, the following substitutions should be made for certain references in the federal pipeline safety regulations adopted by reference in section (2) of this rule:

(A) The references to "state agency" in sections 193.2017, 193.2019, and 193.2515 of 49 CFR part 193 should refer to "the commission" instead;

(B) The reference to "state procedures" in section 193.2017 should refer to "commission procedures" instead.

(C) The reference in 49 CFR 193.2011 to "Part 191 of this subchapter" for reporting of incidents, safety-related conditions, and annual pipeline summary data for LNG plants or facilities should refer to 4 CSR 240-40.020 instead.

(D) The reference in 49 CFR 193.2605 to "Part 191.23 of this subchapter" for reporting requirements for safety related conditions should refer to 4 CSR 240-40.020(12) instead.

(E) The reference in 49 CFR 193.2001 to "Part 192 of this chapter" for applicability of the standards should refer to 4 CSR 240-40.030 instead.

(F) The reference in 49 CFR 193.2629 to "section 192.461 of this chapter" for protective coatings should refer to 4 CSR 240-40.030(9)(G) instead.

(G) The references in 49 CFR 193.2629 and 193.2635 to "section 192.463 of this chapter" for cathodic protection should refer to 4 CSR 240-40.030(9)(H) instead.

(4) The federal pipeline safety regulations for liquefied natural gas (49 CFR part 193) adopted in section (2) of this rule contain subparts on general, siting requirements, design, construction, equipment, operations, maintenance, personnel qualifications and training, fire protection, and security.

(A) The general subpart contains sections on: scope, applicability, definitions, Department of Transportation (DOT) rules of regulatory construction reporting, documents incorporated by reference, plans and procedures, and mobile and temporary liquefied natural gas facilities.

(B) The siting requirements subpart contains sections on: scope, thermal radiation protection, flammable vapor-gas dispersion protection and wind forces.

(C) The design subpart contains sections on: scope, material records, structural requirements for impoundment systems, dikes, covered systems, water removal and impoundment capacity, and

requirements pertaining to nonmetallic membrane liners in storage tanks.

(D) The construction subpart contains sections on: scope, construction acceptance, corrosion control, and nondestructive tests for welds.

(E) The equipment subpart contains sections on: scope, control center, and sources of power.

(F) The operations subpart contains sections on: scope, operating procedures, cooldown, monitoring operations, emergency procedures, personnel safety, transfer procedures, investigations of failures, purging, communication systems, and operating records.

(G) The maintenance subpart contains sections on: scope, general, maintenance procedures, foreign material, support systems, fire protection, auxiliary power sources, isolating and purging, repairs, control systems, testing transfer hoses, inspecting storage tanks, corrosion protection, atmospheric corrosion control, external corrosion control, internal corrosion control, interference currents, monitoring corrosion control, remedial measures, and maintenance records.

(H) The personnel qualifications and training subpart contains sections on: scope, design and fabrication, construction, installation, inspection and testing, operations and maintenance, security, personnel health, operations and maintenance training, security training, fire protection training, and records training.

(I) The fire protection subpart contains a section on fire protection.

(J) The security subpart contains sections on: scope, security procedures, protective enclosures, protective enclosure construction, security communications, security lighting, security monitoring, alternative power sources, and warning signs.

AUTHORITY: sections 386.250, 386.310 and 393.140, RSMo 2016. Emergency rule filed Dec. 19, 2018, effective Dec. 29, 2018, expires June 26, 2019. A proposed rule covering this same material is published in this issue of the ***Missouri Register****.*

Title 13—DEPARTMENT OF SOCIAL SERVICES
Division 70—MO HealthNet Division
Chapter 10—Nursing Home Program

EMERGENCY AMENDMENT

13 CSR 70-10.016 Global Per Diem Adjustments to Nursing Facility and HIV Nursing Facility Reimbursement Rates. The division is adding paragraph (3)(A)22.

PURPOSE: This emergency amendment provides for a per diem increase to nursing facility and HIV nursing facility per diem reimbursement rates of seven dollars and seventy-six cents ($7.76) effective for dates of service beginning July 1, 2018. This per diem increase was approved by the Centers for Medicare and Medicaid Services (CMS) on December 10, 2018.

EMERGENCY STATEMENT: The Department of Social Services, MO HealthNet Division (MHD), determines that this emergency amendment is necessary to preserve a compelling governmental interest.

MHD, by rule and regulation, must define the reasonable costs, manner, extent, quantity, quality, charges, and fees of medical assistance. Sections 208.153, 208.159, 208.201, and 660.017, RSMo. Effective for dates of service beginning July 1, 2018, the appropriation by the General Assembly included additional funds to nursing facilities' and HIV nursing facilities' reimbursements to account for a trend adjustment for State Fiscal Year (SFY) 2019. MHD is carrying out the General Assembly's intent by providing for a per diem increase to nursing facility and HIV nursing facility reimbursement rates by implementing a trend adjustment of seven dollars and seventy-six cents ($7.76) effective for dates of service that began on July 1, 2018. The trend adjustment is necessary to ensure that payments for nursing facility and HIV nursing facility per diem rates are in line with the funds appropriated for that purpose. There is a total of five hundred seven (507) nursing facilities and HIV nursing facilities currently enrolled in MO HealthNet that will receive a per diem increase to its reimbursement rate effective for dates of service beginning July 1, 2018. This emergency amendment will ensure increased payment for nursing facility and HIV nursing facility services to approximately twenty-four thousand two hundred thirty (24,230) senior Missourians in accordance with the appropriation authority.

In order for the SFY 2019 payment to be made, the Centers for Medicare and Medicaid Services (CMS) required MHD to submit a Medicaid State Plan Amendment for approval. MHD submitted the State Plan Amendment after the budget bill went into effect, on September 24, 2018. A proposed amendment was filed on September 28, 2018, and will not be effective until approximately March 30, 2019. CMS approved the State Plan Amendment on December 10, 2018.

MHD needs this emergency amendment to provide MHD participants with quality nursing facility services in order to protect the public health, safety, and/or welfare of MO HealthNet participants in nursing facilities and HIV nursing facilities. MHD also needs this emergency amendment to protect the governmental interest to reimburse nursing facilities and HIV nursing facilities in accordance with the budget duly passed by the General Assembly and to provide continued cash flow for nursing facility and HIV nursing facility services to ensure continuity of services to the MHD participants who must have these services.

The scope of this emergency amendment is limited to the circumstances creating the emergency and complies with the protections extended in the ***Missouri*** *and* ***United States Constitutions****. MHD believes this emergency amendment is fair to all interested persons and parties under the circumstances. A proposed amendment covering this same material was published in the* ***Missouri Register*** *on November 1, 2018 (43 MoReg 3094-3098). This emergency amendment was filed December 21, 2018, becomes effective December 31, 2018, and expires June 28, 2019.*

(3) Adjustments to the Reimbursement Rates. Subject to the limitations prescribed in 13 CSR 70-10.015, a nursing facility's reimbursement rate may be adjusted as described in this section. Subject to the limitations prescribed in 13 CSR 70-10.080, an HIV nursing facility's reimbursement rate may be adjusted as described in this section.

(A) Global Per Diem Rate Adjustments. A facility with either an interim rate or a prospective rate may qualify for the global per diem rate adjustments. Global per diem rate adjustments shall be added to the specified cost component ceiling.

1. FY-96 negotiated trend factor—

A. Facilities with either an interim rate or prospective rate in effect on October 1, 1995, shall be granted an increase to their per diem effective October 1, 1995, of four and six-tenths percent (4.6%) of the cost determined in paragraphs (11)(A)1., (11)(B)1., (11)(C)1., and the property insurance and property taxes detailed in subsection (11)(D) of 13 CSR 70-10.015; or

B. Facilities that were granted a prospective rate based on paragraph (12)(A)2. of 13 CSR 70-10.015 that is in effect on October 1, 1995, shall have their increase determined by subsection (3)(S) of 13 CSR 70-10.015.

2. FY-97 negotiated trend factor—

A. Facilities with either an interim rate or prospective rate in effect on October 1, 1996, shall be granted an increase to their per diem effective October 1, 1996, of three and seven-tenths percent (3.7%) of the cost determined in paragraphs (11)(A)1., (11)(B)1., (11)(C)1., and the property insurance and property taxes detailed in subsection (11)(D) of 13 CSR 70-10.015; or

B. Facilities that were granted a prospective rate based on paragraph (12)(A)2. of 13 CSR 70-10.015 that is in effect on October 1, 1995, shall have their increase determined by subsection (3)(S) of

13 CSR 70-10.015.

3. Nursing Facility Reimbursement Allowance (NFRA). Effective October 1, 1996, all facilities with either an interim rate or a prospective rate shall have its per diem adjusted to include the current NFRA as an allowable cost in its reimbursement rate calculation.

4. Minimum wage adjustment. All facilities with either an interim rate or a prospective rate in effect on November 1, 1996, shall be granted an increase to their per diem effective November 1, 1996, of two dollars and forty-five cents ($2.45) to allow for the change in minimum wage. Utilizing Fiscal Year 1995 cost report data, the total industry hours reported for each payroll category was multiplied by the fifty-cent (50¢) increase, divided by the patient days for the facilities reporting hours for that payroll category, and factored up by eight and sixty-seven hundredths percent (8.67%) to account for the related increase to payroll taxes. This calculation excludes the director of nursing, the administrator, and assistant administrator.

5. Minimum wage adjustment. All facilities with either an interim rate or a prospective rate in effect on September 1, 1997, shall be granted an increase to their per diem effective September 1, 1997, of one dollar and ninety-eight cents ($1.98) to allow for the change in minimum wage. Utilizing Fiscal Year 1995 cost report data, the total industry hours reported for each payroll category was multiplied by the forty-cent (40¢) increase, divided by the patient days for the facilities reporting hours for that payroll category, and factored up by eight and sixty-seven hundredths percent (8.67%) to account for the related increase to payroll taxes. This calculation excludes the director of nursing, the administrator, and assistant administrator.

6. FY-98 negotiated trend factor—

A. Facilities with either an interim rate or prospective rate in effect on October 1, 1997, shall be granted an increase to their per diem effective October 1, 1997, of three and four-tenths percent (3.4%) of the cost determined in paragraphs (11)(A)1., (11)(B)1., (11)(C)1., and the property insurance and property taxes detailed in subsection (11)(D) of 13 CSR 70-10.015 for nursing facilities and 13 CSR 70-10.080 for HIV nursing facilities; or

B. Facilities that were granted a prospective rate based on paragraph (12)(A)2. of 13 CSR 70-10.015 that is in effect on October 1, 1995, shall have their increase determined by subsection (3)(S) of 13 CSR 70-10.015.

7. FY-99 negotiated trend factor—

A. Facilities with either an interim rate or prospective rate in effect on October 1, 1998, shall be granted an increase to their per diem effective October 1, 1998, of two and one-tenth percent (2.1%) of the cost determined in paragraphs (11)(A)1., (11)(B)1., (11)(C)1., the property insurance and property taxes detailed in subsection (11)(D) of 13 CSR 70-10.015 for nursing facilities and 13 CSR 70-10.080 for HIV nursing facilities, and the minimum wage adjustments detailed in paragraphs (3)(A)4. and (3)(A)5. of this regulation; or

B. Facilities that were granted a prospective rate based on paragraph (12)(A)2. of 13 CSR 70-10.015 that is in effect on October 1, 1998, shall have their increase determined by subsection (3)(S) of 13 CSR 70-10.015.

8. FY-2000 negotiated trend factor—

A. Facilities with either an interim rate or prospective rate in effect on July 1, 1999, shall be granted an increase to their per diem effective July 1, 1999, of one and ninety-four hundredths percent (1.94%) of the cost determined in subsections (11)(A), (11)(B), (11)(C), the property insurance and property taxes detailed in subsection (11)(D) of 13 CSR 70-10.015 for nursing facilities and 13 CSR 70-10.080 for HIV nursing facilities, and the minimum wage adjustments detailed in paragraphs (3)(A)4. and (3)(A)5. of this regulation; or

B. Facilities that were granted a prospective rate based on paragraph (12)(A)2. of 13 CSR 70-10.015 that is in effect on July 1, 1999, shall have their increase determined by subsection (3)(S) of 13 CSR 70-10.015.

9. FY-2004 nursing facility operations adjustment—

A. Facilities with either an interim rate or prospective rate in effect on July 1, 2003, shall be granted an increase to their per diem effective for dates of service beginning July 1, 2003, through June 30, 2004, of four dollars and thirty-two cents ($4.32) for the cost of nursing facility operations. Effective for dates of service beginning July 1, 2004, the per diem adjustment shall be reduced to three dollars and seventy-eight cents ($3.78); and

B. The operations adjustment shall be added to the facility's current rate as of June 30, 2003, and is effective for payment dates after August 1, 2003.

10. FY-2007 quality improvement adjustment—

A. Facilities with either an interim rate or prospective rate in effect on July 1, 2006, shall be granted an increase to their per diem effective for dates of service beginning July 1, 2006, of three dollars and seventeen cents ($3.17) to improve the quality of life for nursing facility residents; and

B. The quality improvement adjustment shall be added to the facility's current rate as of June 30, 2006, and is effective for dates of service beginning July 1, 2006, and after.

11. FY-2007 trend adjustment—

A. Facilities with either an interim rate or a prospective rate in effect on February 1, 2007, shall be granted an increase to their per diem rate effective for dates of service beginning February 1, 2007, of three dollars and zero cents ($3.00) to allow for a trend adjustment to ensure quality nursing facility services; and

B. The trend adjustment shall be added to the facility's reimbursement rate as of January 31, 2007, and is effective for dates of service beginning February 1, 2007, for payment dates after March 1, 2007.

12. FY-2008 trend adjustment—

A. Facilities with either an interim rate or a prospective rate in effect on July 1, 2007, shall be granted an increase to their per diem rate effective for dates of service beginning July 1, 2007, of six dollars and zero cents ($6.00) to allow for a trend adjustment to ensure quality nursing facility services; and

B. The trend adjustment shall be added to the facility's current rate as of June 30, 2007, and is effective for dates of service beginning July 1, 2007.

13. FY-2009 trend adjustment—

A. Facilities with either an interim rate or a prospective rate in effect on July 1, 2008, shall be granted an increase to their per diem rate effective for dates of service beginning July 1, 2008, of six dollars and zero cents ($6.00) to allow for a trend adjustment to ensure quality nursing facility services; and

B. The trend adjustment shall be added to the facility's current rate as of June 30, 2008, and is effective for dates of service beginning July 1, 2008.

14. FY-2010 trend adjustment—

A. Facilities with either an interim rate or a prospective rate in effect on July 1, 2009, shall be granted an increase to their per diem rate effective for dates of service beginning July 1, 2009, of five dollars and fifty cents ($5.50) to allow for a trend adjustment to ensure quality nursing facility services; and

B. The trend adjustment shall be added to the facility's current rate as of June 30, 2009, and is effective for dates of service beginning July 1, 2009.

15. FY-2012 trend adjustment—

A. Facilities with either an interim rate or a prospective rate in effect on October 1, 2011, shall be granted an increase to their per diem rate effective for dates of service beginning October 1, 2011, of six dollars and zero cents ($6.00) to allow for a trend adjustment to ensure quality nursing facility services;

B. The trend adjustment shall be added to the facility's current rate as of September 30, 2011, and is effective for dates of service beginning October 1, 2011; and

C. This increase is contingent upon the federal assessment rate limit increasing to six percent (6%) and is subject to approval by the Centers for Medicare and Medicaid Services.

16. FY-2013 trend adjustment—

A. Facilities with either an interim rate or a prospective rate in effect on July 1, 2012, shall be granted an increase to their per diem rate effective for dates of services beginning July 1, 2012, of six dollars and zero cents ($6.00) to allow for a trend adjustment to ensure quality nursing facility services;

B. The trend adjustment shall be added to the facility's current rate as of June 30, 2012, and is effective for dates of service beginning July 1, 2012; and

C. This increase is contingent upon approval by the Centers for Medicare and Medicaid Services.

17. FY-2014 trend adjustment—

A. Facilities with either an interim rate or a prospective rate in effect on July 1, 2013, shall be granted an increase to their per diem rate effective for dates of services beginning July 1, 2013, of three percent (3.0%) of their current rate, less certain fixed cost items. The fixed cost items are the per diem amounts included in the facility's current rate from the following: subsection (2)(O) of 13 CSR 70-10.110, paragraphs (11)(D)1., (11)(D)2., (11)(D)3., (11)(D)4., (13)(B)3., and (13)(B)10. of 13 CSR 70-10.015;

B. The trend adjustment shall be added to the facility's current rate as of June 30, 2013, and is effective for dates of service beginning July 1, 2013; and

C. This increase is contingent upon approval by the Centers for Medicare and Medicaid Services.

18. FY-2015 trend adjustment—

A. Facilities with either an interim rate or a prospective rate in effect on July 1, 2014, shall be granted an increase to their per diem rate effective for dates of services beginning July 1, 2014, of one dollar and twenty-five cents ($1.25) to allow for a trend adjustment to ensure quality nursing facility services;

B. The trend adjustment shall be added to the facility's current rate as of June 30, 2014, and is effective for dates of service beginning July 1, 2014; and

C. This increase is contingent upon approval by the Centers for Medicare and Medicaid Services.

19. January 1, 2016 – June 30, 2016 trend adjustment—

A. Facilities with either an interim rate or a prospective rate in effect on January 1, 2016, shall be granted an increase to their per diem rate effective for dates of services beginning January 1, 2016, of two dollars and nine cents ($2.09) to allow for a trend adjustment to ensure quality nursing facility services;

B. The trend adjustment will not be added to the facility's rate after June 30, 2016; and

C. This increase is contingent upon approval by the Centers for Medicare and Medicaid Services and sufficient funding available through the Tax Amnesty Fund.

20. Continuation of FY-2016 trend adjustment and FY-2017 trend adjustment—

A. Facilities with either an interim rate or a prospective rate in effect on July 1, 2016, shall continue to be granted an increase to their per diem rate effective for dates of service beginning July 1, 2016, of two dollars and nine cents ($2.09);

B. Facilities with either an interim rate or a prospective rate in effect on July 1, 2016, shall be granted an increase to their per diem rate effective for dates of services beginning July 1, 2016, of two dollars and eighty-three cents ($2.83) to allow for a trend adjustment to ensure quality nursing facility services;

C. The trend adjustment of two dollars and eighty-three cents ($2.83) shall be added to the facility's rate as of June 30, 2016, which includes the two dollars and nine cents ($2.09) increase, and is effective for dates of service beginning July 1, 2016; and

D. These increases are contingent upon approval by the Centers for Medicare and Medicaid Services.

21. FY-2018 per diem adjustment—

A. Facilities with either an interim rate or a prospective rate in effect on August 1, 2017, shall be subject to a decrease in their per diem rate effective for dates of services August 1, 2017 through June 30, 2018, of five dollars and thirty-seven cents ($5.37);

B. The per diem adjustment of five dollars and thirty-seven cents ($5.37) shall be deducted from the facility's current rate as of July 31, 2017, and is effective for dates of service beginning August 1, 2017;

C. Effective for dates of service beginning July 1, 2018, the per diem decrease shall be reduced to four dollars and eighty-three cents ($4.83). A per diem adjustment of fifty-four cents ($0.54) shall be added to the facilities current rate as of June 30, 2018, which includes the five dollars and thirty-seven cents ($5.37) decrease, and is effective for dates of service beginning July 1, 2018; and

D. This decrease is contingent upon approval by the Centers for Medicare and Medicaid Services.

22. FY-2019 trend adjustment—

A. Facilities with either an interim rate or a prospective rate in effect on July 1, 2018, shall be granted an increase to their per diem rate effective for dates of services beginning July 1, 2018, of seven dollars and seventy-six cents ($7.76) to allow for a trend adjustment to ensure quality nursing facility services;

B. The rate to which the FY-2019 trend adjustment of seven dollars and seventy-six cents ($7.76) shall be added is the facilities' rate as of July 1, 2018, set forth in subparagraph (3)(A)21.C. and is effective for dates of service beginning July 1, 2018. This trend adjustment shall result in a rate no greater than eight dollars and thirty cents ($8.30) higher than the rate in effect on January 1, 2018; and

C. This increase is contingent upon approval by the Centers for Medicare and Medicaid Services.

*AUTHORITY: sections 208.153, 208.159, 208.201, and 660.017, RSMo 2016. Original rule filed July 1, 2008, effective Jan. 30, 2009. For intervening history, please consult the **Code of State Regulations**. Amended: Filed Sept. 28, 2018. Emergency amendment filed Dec. 21, 2018, effective Dec. 31, 2018, expires June 28, 2019. A proposed amendment covering this same material was published in the November 1, 2018, issue of the **Missouri Register**.*

Title 19—DEPARTMENT OF HEALTH AND SENIOR SERVICES
Division 20—Division of Community and Public Health
Chapter 60—Maternal and Neonatal Care

EMERGENCY RULE

19 CSR 20-60.010 Levels of Maternal and Neonatal Care Designations

PURPOSE: This rule establishes criteria and procedures for reporting standardized assessments and levels of maternal and neonatal care designations for birthing facilities.

PUBLISHER'S NOTE: The secretary of state has determined that the publication of the entire text of the material which is incorporated by reference as a portion of this rule would be unduly cumbersome or expensive. This material as incorporated by reference in this rule shall be maintained by the agency at its headquarters and shall be made available to the public for inspection and copying at no more than the actual cost of reproductions. This note applies only to the reference material. The entire text of the rule is printed here.

EMERGENCY STATEMENT: During the 2017 legislative session, section 192.380, RSMo, was enacted. Section 192.380, RSMo, requires hospitals with birthing facilities to report to the department levels of maternal care and neonatal care designations beginning January 1, 2019. Section 192.380, RSMo, implemented one (1) of seven (7) recommendations which emerged from a governor appointed task force on prematurity and infant mortality. This rule establishes the criteria

and procedures that the hospitals will utilize to report maternal and neonatal care designations. This rule also provides the hospitals with the tool to use in order to conduct the assessments. he hospitals will be unable to determine levels of maternal and neonatal care designations pursuant to section 192.380, RSMo, and report to the department beginning January 1, 2019, without this rule. The determinations by the hospitals of levels of maternal and neonatal care designations will be utilized to improve health outcomes for pregnant women and infants. Knowing the levels of maternal and neonatal care designations will assist in developing coordinated regional systems to ensure that pregnant women and infants who are at high risk for complications receive care at a hospital that is best prepared to meet their needs. The goal is to reduce infant morbidity and mortality and improve birth outcomes. Missouri's infant mortality rate (6.3 in 2017) has been consistently above the Healthy People 2020 goal of 6.0. Further, the standardized assessments will provide a better picture of the levels of care by hospitals and the distribution of staff and services throughout Missouri. As a result, the department finds an immediate danger to the public health, safety, and/or welfare and a compelling governmental interest, which requires this emergency action. A proposed rule, which covers the same material, is published in this issue of the ***Missouri Register****. The scope of this emergency rule is limited to the circumstances creating the emergency and complies with the protections extended in the* ***Missouri*** *and* ***United States Constitutions****. The department believes this emergency rule is fair to all interested persons and parties under the circumstances. This emergency rule was filed December 20, 2018, becomes effective December 30, 2018, and expires June 27, 2019.*

(1) The following definitions shall apply throughout this rule:

(A) "Birthing facility" means any hospital, as defined under section 197.020 RSMo, with more than one licensed obstetric bed or a neonatal intensive care unit, a hospital operated by a state university, or a birthing center licensed under sections 197.200 to 197.240, RSMo;

(B) "Department" means the Missouri Department of Health and Senior Services; and

(C) "LOCATe" or "CDC Maternal and Neonatal Levels of Care Assessment Tool" refers to a web-based tool created by the Centers for Disease Control and Prevention (CDC) that assists in creating standardized assessments of levels of maternal and neonatal care. LOCATe is based on the most recent guidelines and policy statements issued by the American Academy of Pediatrics, the American College of Obstetricians and Gynecologists, and the Society for Maternal-Fetal Medicine.

(2) By January 31, 2019, each birthing facility shall complete the CDC Maternal and Neonatal Levels of Care Assessment Tool (LOCATe) based upon the assessment of the facility as of December 31, 2018. For each succeeding year thereafter, each birthing facility shall use LOCATe to reassess its designation as of December 31st preceding the due date of January 31. The LOCATe tool (version 0.8.0) is incorporated by reference in this rule as published by the Centers for Disease Control and Prevention and available at www.health.mo.gov. This rule does not incorporate any subsequent amendments or additions. The completed assessment shall be sent to the Department of Health and Senior Services, PO Box 570, Jefferson City, MO 65102-0570 by January 31 each year.

(3) The level of care designation for neonatal care selected by the birthing facility within LOCATe shall be based upon the most current standards published by the American Academy of Pediatrics (AAP). The level of care designation for maternal care selected by the birthing facility within LOCATe shall be based upon the most current standards published by the American College of Obstetricians and Gynecologists (ACOG) and the Society for Maternal-Fetal Medicine.

(4) Each birthing facility shall have the results of their LOCATe assessment and level of care designations verified by the department, AAP, or ACOG once every three years. When submitting the annual LOCATe assessment, birthing facilities shall notify the department in writing about how they will have their results verified.

(5) If a birthing facility chooses to have the results of their LOCATe standardized assessment and level of care designations verified by either AAP or ACOG, the verification shall be conducted utilizing criteria collected in LOCATe. Verification processes conducted by AAP or ACOG may include criteria in addition to those included in LOCATe. Verification by the department will only include criteria collected in LOCATe.

(6) A birthing facility shall provide written notification to the department at any time their designation changes in between annual assessments.

(7) The department may initiate a review and monitor compliance with the provisions set forth in this rule at any time. The department will provide written notification to a birthing facility if it finds that verification does not match the self-designated levels of care.

AUTHORITY: section 192.006, RSMo 2016 and section 192.380, RSMo Supp. 2017. Emergency rule filed Dec. 20, 2018, effective Dec. 30, 2018, expires June 27, 2019. A proposed rule covering this same material is published in this issue of the ***Missouri Register****.*

The Secretary of State shall publish all executive orders beginning January 1, 2003, pursuant to section 536.035.2, RSMo 2016.

EXECUTIVE ORDER
18-12

WHEREAS, the United States Constitution mandates that the nation undertake a census of population every ten years; and

WHEREAS, the Census requires years of planning and requires more than 500,000 temporary workers; and

WHEREAS, it is vitally important that every household completes a Census form; and

WHEREAS, the Census is used to apportion seats in the United States House of Representatives; and

WHEREAS, one percent of Missouri's population equates to one billion dollars of federal funding per decade; and

WHEREAS, the State of Missouri faces the possible loss of a seat in the United States House of Representatives and loss of federal funding based on Missouri's population counts relative to those of all other states; and

WHEREAS, federal funds are vital to Missourians and distributed based on population counts collected during the Census; and

WHEREAS, the United States Census Bureau encourages all states to form a Complete Count Committee with the goals of heightening awareness about the 2020 Census and encouraging the populace to participate in the United States Census of Population; and

WHEREAS, the State of Missouri is committed to ensuring Missouri has an accurate count of its citizens during the 2020 Census.

NOW, THEREFORE, I MICHAEL L. PARSON, GOVERNOR OF THE STATE OF MISSOURI, by virtue of the authority vested in me by the Constitution and laws of the state of Missouri, do hereby order the establishment of the Missouri 2020 Complete Count Committee.

I hereby charge the Committee with heightening Missouri's awareness of the 2020 Census, encouraging participation in the process, developing targeted community outreach, and working to ensure that every resident is counted:

1. The Governor shall designate a chairperson of the committee.
2. No more than 30 additional members will be appointed by the Governor. Additional appointments will represent Missouri's diverse population. Membership on the committee will be bipartisan and representative of the State. The State Demographer will be one of the members.
3. The Committee shall begin work on an action plan soon after its formation that will identify specific areas or groups within Missouri, which are isolated geographically, linguistically, racially, culturally, or otherwise, that may be hard to enumerate. The plan also should identify strategies to overcome recognized barriers; develop campaigns targeted toward the identified areas or groups, which will build awareness of Census 2020, and encourage cooperation with enumerators.
4. The chair, in consultation with the Governor, will decide if the committee will have subcommittees. The purpose of such subcommittees will be to help the committee better achieve its mission on a particular geographic region or group of citizens within the State of Missouri.
5. The Chair, in consultation with the committee, shall establish a set of by-laws and rules that govern the committee.
6. The Committee members shall not be compensated for their services other than reimbursement of costs directly associated with the execution of their duties, subject to appropriations.
7. The Committee is authorized to submit requests for appropriations through the Commissioner of Administration necessary to carry out its charge.
8. The Committee should fulfill this charge in the most cost-effective manner possible.
9. Staff support will be provided by the Office of Administration.
10. The Committee shall meet at least once quarterly until December 15, 2019, and as often as is required thereafter to complete this charge.
11. The Committee shall provide quarterly reports to the Governor on its activities beginning in 2019.

12. Whenever possible, the Committee should coordinate its efforts with those of the United States Bureau of Census and Complete Count Committees established at the local or sub-state level.
13. The Committee shall submit a final report to the Governor summarizing its activities and suggesting improvements to Missouri's Complete Count Committee for Census 2030.
14. The Committee will complete its work and submit its final report by August 1, 2020.
15. Executive Order 09-05 is hereby superseded and replaced by this Executive Order.

IN WITNESS WHEREOF, I have hereto set my hand and caused to be affixed the Great Seal of the State of Missouri, in the City of Jefferson on this 18th day of December, 2018.

Michael L. Parson
Governor

John R. Ashcroft
Secretary of State

Under this heading will appear the text of proposed rules and changes. The notice of proposed rulemaking is required to contain an explanation of any new rule or any change in an existing rule and the reasons therefor. This is set out in the Purpose section with each rule. Also required is a citation to the legal authority to make rules. This appears following the text of the rule, after the word "Authority."

Entirely new rules are printed without any special symbology under the heading of proposed rule. If an existing rule is to be amended or rescinded, it will have a heading of proposed amendment or proposed rescission. Rules which are proposed to be amended will have new matter printed in boldface type and matter to be deleted placed in brackets.

An important function of the *Missouri Register* is to solicit and encourage public participation in the rulemaking process. The law provides that for every proposed rule, amendment, or rescission there must be a notice that anyone may comment on the proposed action. This comment may take different forms.

If an agency is required by statute to hold a public hearing before making any new rules, then a Notice of Public Hearing will appear following the text of the rule. Hearing dates must be at least thirty (30) days after publication of the notice in the *Missouri Register.* If no hearing is planned or required, the agency must give a Notice to Submit Comments. This allows anyone to file statements in support of or in opposition to the proposed action with the agency within a specified time, no less than thirty (30) days after publication of the notice in the *Missouri Register*.

An agency may hold a public hearing on a rule even though not required by law to hold one. If an agency allows comments to be received following the hearing date, the close of comments date will be used as the beginning day in the ninety- (90-) day-count necessary for the filing of the order of rulemaking.

If an agency decides to hold a public hearing after planning not to, it must withdraw the earlier notice and file a new notice of proposed rulemaking and schedule a hearing for a date not less than thirty (30) days from the date of publication of the new notice.

Proposed Amendment Text Reminder:
Boldface text indicates new matter.
[Bracketed text indicates matter being deleted.]

Title 4—DEPARTMENT OF ECONOMIC DEVELOPMENT
Division 240—Public Service Commission
Chapter 40—Gas Utilities and Gas Safety Standards

PROPOSED RULE

4 CSR 240-40.033 Safety Standards–Liquefied Natural Gas Facilities

PURPOSE: This rule prescribes safety standards for liquefied natural gas facilities used in the transportation of gas by pipeline that is subject to the pipeline safety standards in 4 CSR 240-40.030. This rule adopts the federal regulations on this subject matter that apply to operators of liquefied natural gas facilities used in the transportation of gas by pipeline that is subject to the federal pipeline safety laws and pipeline safety standards.

(1) As set forth in the *Code of Federal Regulations* (CFR) dated October 1, 2017, 49 CFR part 193 is incorporated by reference and made a part of this rule. This rule does not incorporate any subsequent amendments to 49 CFR part 193. The *Code of Federal Regulations* is published by the Office of the Federal Register, National Archives and Records Administration, 8601 Adelphi Road, College Park, MD 20740-6001. The October 1, 2017 version of 49 CFR part 193 is available at www.gpo.gov/fdsys/search/showcitation.action.

(2) The commission adopts the federal pipeline safety regulations for liquefied natural gas facilities, 49 CFR part 193, as rules of the commission.

(3) For purposes of this rule, the following substitutions should be made for certain references in the federal pipeline safety regulations adopted by reference in section (2) of this rule:

(A) The references to "state agency" in sections 193.2017, 193.2019, and 193.2515 of 49 CFR part 193 should refer to "the commission" instead;

(B) The reference to "state procedures" in section 193.2017 should refer to "commission procedures" instead.

(C) The reference in 49 CFR 193.2011 to "Part 191 of this subchapter" for reporting of incidents, safety-related conditions, and annual pipeline summary data for LNG plants or facilities should refer to 4 CSR 240-40.020 instead.

(D) The reference in 49 CFR 193.2605 to "Part 191.23 of this subchapter" for reporting requirements for safety related conditions should refer to 4 CSR 240-40.020(12) instead.

(E) The reference in 49 CFR 193.2001 to "Part 192 of this chapter" for applicability of the standards should refer to 4 CSR 240-0.030 instead.

(F) The reference in 49 CFR 193.2629 to "section 192.461 of this chapter" for protective coatings should refer to 4 CSR 240-0.030(9)(G)" instead.

(G) The references in 49 CFR 193.2629 and 193.2635 to "section 192.463 of this chapter" for cathodic protection should refer to 4 CSR 240-40.030(9)(H) instead.

(4) The federal pipeline safety regulations for liquefied natural gas (49 CFR part 193) adopted in section (2) of this rule contain subparts on general, siting requirements, design, construction, equipment, operations, maintenance, personnel qualifications and training, fire protection, and security.

(A) The general subpart contains sections on: scope, applicability, definitions, Department of Transportation (DOT) rules of regulatory construction reporting, documents incorporated by reference, plans and procedures, and mobile and temporary liquefied natural gas facilities.

(B) The siting requirements subpart contains sections on: scope, thermal radiation protection, flammable vapor-gas dispersion protection and wind forces.

(C) The design subpart contains sections on: scope, material records, structural requirements for impoundment systems, dikes, covered systems, water removal and impoundment capacity, and requirements pertaining to nonmetallic membrane liners in storage tanks.

(D) The construction subpart contains sections on: scope, construction acceptance, corrosion control, and nondestructive tests for welds.

(E) The equipment subpart contains sections on: scope, control center, and sources of power.

(F) The operations subpart contains sections on: scope, operating procedures, cooldown, monitoring operations, emergency procedures, personnel safety, transfer procedures, investigations of failures, purging, communication systems, and operating records.

(G) The maintenance subpart contains sections on: scope, general, maintenance procedures, foreign material, support systems, fire protection, auxiliary power sources, isolating and purging, repairs, control systems, testing transfer hoses, inspecting storage tanks, corrosion protection, atmospheric corrosion control, external corrosion control, internal corrosion control, interference currents, monitoring corrosion control, remedial measures, and maintenance records.

(H) The personnel qualifications and training subpart contains sections on: scope, design and fabrication, construction, installation, inspection and testing, operations and maintenance, security, personnel health, operations and maintenance training, security training, fire protection training, and records training.

(I) The fire protection subpart contains a section on fire protection.

(J) The security subpart contains sections on: scope, security procedures, protective enclosures, protective enclosure construction, security communications, security lighting, security monitoring, alternative power sources, and warning signs.

AUTHORITY: sections 386.250, 386.310 and 393.140, RSMo 2016. Emergency rule filed Dec. 19, 2018, effective Dec. 29, 2018, expires June 2, 2019. Emergency rule filed Dec. 19, 2018, effective Dec. 29, 2018, expires June 26, 2019. Original rule filed Dec. 20, 2018.

PUBLIC COST: This proposed rule will not cost state agencies or political subdivisions more than five hundred dollars ($500) in the aggregate.

PRIVATE COST: This proposed rule will not cost private entities more than five hundred dollars ($500) in the aggregate.

NOTICE TO SUBMIT COMMENTS AND NOTICE OF PUBLIC HEARING: Anyone may file comments in support of or in opposition to this proposed rule with the Missouri Public Service Commission, Morris L. Woodruff, Secretary of the Commission, PO Box 360, Jefferson City, MO 65102. To be considered, comments must be received at the commission's offices on or before March 4, 2019, and should include reference to Commission Case No. GX-2019-0177. Comments may also be submitted via a filing using the commission's electronic filing and information system at http://www.psc.mo.gov/efis.asp. A public hearing regarding this proposed rule is scheduled for March 5, 2019, at 2:00 p.m., in Room 305 of the Governor Office Building, 200 Madison St., Jefferson City, Missouri. Interested persons may appear at this hearing to submit additional comments and/or testimony in support of or in opposition to this proposed rule and may be asked to respond to commission questions.

SPECIAL NEEDS: Any persons with special needs as addressed by the Americans with Disabilities Act should contact the Missouri Public Service Commission at least ten (10) days prior to the hearing at one (1) of the following numbers: Consumer Services Hotline 1-800-392-4211 or TDD Hotline 1-800-829-7541.

Title 10—DEPARTMENT OF NATURAL RESOURCES
Division 80—Solid Waste Management
Chapter 2—General Provisions

PROPOSED AMENDMENT

10 CSR 80-2.010 Definitions. The department is deleting sections (1) through (134) and adding new sections (1) and (2).

PURPOSE: This rule is being amended to incorporate definitions found in 40 CFR 257 pursuant to requirements for a federally-approved state coal combustion residuals (CCR) program. This amended regulation will need to be submitted to the U.S. Environmental Protection Agency (EPA) upon the Missouri Department of Natural Resources' request for federal approval for a state-approved CCR Program.

[(1) Alkaline-manganese battery or alkaline battery means a battery having a manganese dioxide positive electrode, a zinc negative electrode, an alkaline electrolyte, including alkaline-manganese button cell batteries intended for use in watches, calculators, and other electronic products, and larger-sized alkaline-manganese batteries in general household use.

(2) Button cell battery or button cell means any small alkaline-manganese or mercuric-oxide battery having the size and shape of a button.

(3) Airport means a public-use airport open to the public without prior permission and without restrictions within the physical capacities of available facilities.

(4) Applicant means a person who applies for a solid waste permit from the department.

(5) Aquifer means a hydrostratigraphic unit capable of consistently yielding a sufficient amount of water to a monitoring well within twenty-four (24) hours of purging for sampling and analysis.

(6) Areas susceptible to mass movement means those areas of influence (for example, areas characterized as having an active or substantial possibility of mass movement) where the movement of earth material at, beneath or adjacent to the sanitary landfill, because of natural or man-induced events, results in the downslope transport of soil and rock material by means of gravitational influence. Areas of mass movement include, but are not limited to, landslides, avalanches, debris slides and flows, solifluction, block sliding and rock fall.

(7) Bedrock means the solid rock strata underlying solid and unconsolidated surface materials.

(8) Bird hazard means an increase in the likelihood of bird/aircraft collisions that may cause damage to the aircraft or injury to its occupants.

(9) Cell means compacted solid wastes that are enclosed on all sides by natural soil or cover in a solid waste disposal area.

(10) City means any incorporated city, town or village.

(11) Clean fill means uncontaminated soil, rock, sand, gravel, concrete, asphaltic concrete, cinderblocks, brick, minimal amounts of wood and metal, and inert solids as approved by rule or policy of the department for fill, reclamation or other beneficial use.

(12) Closure means the permanent cessation of active disposal operations, abandonment of the disposal area, revocation of the permit or filling with waste of all areas and volumes specified in the permit and preparing the area for long-term care.

(13) Closure plan means plans, designs and relevant data which specify the methods and schedule by which the operator will complete or cease disposal operations, prepare the area for long-term care and make the area suitable for other

uses, to achieve the purposes of the Solid Waste Management Law and the corresponding rules.

(14) Commercial waste means all types of solid waste generated by stores, offices, restaurants, warehouses and other nonmanufacturing activities, excluding residential and industrial wastes.

(15) Commingled recyclables means more than one(1) source separated recyclable material that has been placed in a single container for collection.

(16) Competent bedrock means solid rock that underlies unconsolidated deposits (including residuum) which displays limited evidence of weathering throughout the rock mass.

(17) Compost facility means a solid waste processing facility using a controlled process of microbial degradation of organic material which was not source-separated into a stable, nuisance-free humus-like product.

(18) Confining unit means a hydrostratigraphic unit of low permeability material above or below one (1) or more aquifers.

(19) Cover means soil or other suitable material that is used to cover compacted solid waste in a solid waste disposal area.

(20) Demolition landfill means a solid waste disposal area used for the controlled disposal of demolition wastes, construction materials, brush, wood wastes, soil, rock, concrete and inert solids insoluble in water.

(21) Department means the Department of Natural Resources.

(22) Detailed site investigation means the process of conducting a detail surface and subsurface geologic and hydrologic investigation for a proposed solid waste disposal area.

(23) Detail site investigation report means a written report that is submitted to the Missouri Department of Natural Resources concerning the results of a detailed surface and subsurface geologic and hydrologic investigation for a proposed solid waste disposal area.

(24) Detailed site investigation workplan means a plan for conducting a detailed surface and subsurface geologic and hydrologic investigation for a proposed solid waste disposal area.

(25) Director means the director of the Department of Natural Resources.

(26) Displacement means the relative movement of any two (2) sides of a fault measured in any direction.

(27) Existing sanitary landfill means any sanitary landfill that continues to receive solid waste in contiguous areas after October 9, 1993.

(28) Fault means a fracture or a zone of fractures in any material along which strata on one side have been displaced with respect to that on the other side.

(29) Final closure means that a solid waste disposal area has ceased taking waste, has completed all closure activities applicable to the Solid Waste Management Program's law and rules and has obtained closure approval from the program.

(30) Financial assurance instrument means an instrument or instruments including, but not limited to, cash or surety bond, letters of credit, corporate guarantee or secured trust fund, submitted by the applicant to ensure proper closure, post-closure care, or corrective action of a solid waste disposal area in the event that the operator fails to correctly perform closure, post-closure care, or corrective action except that the financial test for the corporate guarantee shall not exceed one and one-half (1 1/2) times the estimated cost of closure and post-closure. The form and content of the financial assurance instrument shall meet or exceed the requirements of the department. The instrument shall be reviewed and approved or disapproved by the attorney general.

(31) Flood area means any area inundated by one hundred (100)-year flood event, or the flood event with a one percent (1%) chance of occurring in any given year.

(32) Floodplain means the lowland and relatively flat areas adjoining inland waters, that are inundated by the one hundred (100)-year flood.

(33) Gas condensate means the liquid generated as a result of gas recovery process(es) at the solid waste disposal area.

(34) Geologic structure means the post-depositional deformation of bedrock and surficial materials resulting from physical stresses, (e.g. faults, folds).

(35) Groundwater means water in the saturated zone beneath the land surface.

(36) Groundwater monitoring plan means a description of the strategy for effectively monitoring groundwater at a proposed or existing solid waste disposal area.

(37) Hazardous wastes means any waste or combination of wastes, as determined by the Hazardous Waste Commission by rules and regulations, which, because of quantity, concentration, or physical, chemical or infectious characteristics, may cause or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illnesses, or pose a present or potential threat to the health of humans or the environment.

(38) Holocene means the most recent epoch of the Quaternary Period, extending from the end of the Pleistocene Epoch to the present.

(39) Horizontal expansion means an expansion of a disposal area beyond current permitted disposal area limits through issuance of a new permit by the department.

(40) Household consumer means an individual who generates used motor oil through the maintenance of the individual's personal motor vehicle, vessel, airplane, or other machinery powered by an internal combustion engine.

(41) Household consumer used motor oil collection center means any site or facility that accepts or aggregates and stores used motor oil collected only from household consumers or farmers who generate an average of twenty-five (25) gallons per month or less of used motor oil in a calendar year. This section shall not preclude a commercial generator

from operating a household consumer used motor oil collection center.

(42) Household consumer used motor oil collection system means any used motor oil collection center at publicly owned facilities of private locations, any curbside collection of household consumer used motor oil, or any other household consumer used motor oil collection program determined by the department to further the purposes of the Solid Waste Management Law.

(43) Household waste means any solid waste (including garbage, trash and sanitary waste in septic tanks) derived from households (including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds and day-use recreation areas).

(44) Hydrostratigraphic unit means a geologic stratum or group of strata that exhibit similar characteristics with respect to transmission of fluids or gases.

(45) Incinerator means a solid waste processing facility consisting of any device or structure resulting in weight or volume reduction of solid waste by combustion.

(46) Incinerator residue means all wastes that remain after combustion, including bottom ash, fly ash, slag and grate siftings.

(47) Infectious waste means waste in quantities and characteristics as determined by the department by rule that is capable of producing an infectious disease because it contains pathogens of sufficient virulence and quantity so that exposure to the waste by a susceptible human host could result in an infectious disease. These wastes include isolation wastes, cultures and stocks of etiologic agents, blood and blood products, pathological wastes, other contaminated wastes from surgery and autopsy; contaminated laboratory wastes, sharps, dialysis unit wastes, discarded biological materials known or suspected to be infectious; provided, however, that infectious waste does not mean waste treated to department specifications.

(48) Infectious waste processing facility means a solid waste processing facility permitted specifically for the treatment or other processing of infectious waste.

(49) Karst terranes means areas where karst, with its characteristic surface and subsurface features, is developed as the result of dissolution of limestone, dolomite or other soluble rock. Characteristic physiographic features present in karst terranes include, but are not limited to, sinkholes, losing streams, caves, solution channels or conduits, springs and solution valleys.

(50) Land surveyor means a land surveyor licensed to practice by the Missouri Board for Architects, Professional Engineers, Professional Land Surveyors, and Landscape Architects.

(51) Leachate means liquid that has percolated through solid waste or has come in contact with solid waste and has extracted, dissolved or suspended materials from it.

(52) Leachate collection system means any combination of landfill base slopes, liners, permeable zones, pipes, sumps, pumps or retention structures that is designed, constructed and maintained to monitor leachate generation in a solid waste disposal area and collect and remove leachate as necessary to reduce leachate depth over a landfill base.

(53) Lead acid battery means a battery designed to contain lead and sulfuric acid with a nominal voltage of a least six (6) volts and of the type intended for use in motor vehicles and watercraft.

(54) Liner means a continuous layer(s) of soil, man-made materials, or both, beneath and on the sides of a solid waste disposal area which controls and minimizes the downward or lateral escape of solid waste, solid waste constituents or leachate.

(55) Liquid waste means any waste material that is determined to contain free liquids as defined by Method 9095 (Paint Filter Liquids Test), as described in Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods (EPA Pub. No. SW-846).

(56) Lithified earth material means all rock, including all naturally occurring and naturally formed aggregates or masses of minerals or small particles of older rock that formed by crystallization of magma or by induration of loose sediments. This term does not include man-made materials, such as fill, concrete and asphalt or unconsolidated earth materials, soil or regolith lying at or near the earth surface.

(57) Major appliance means clothes washers and dryers, water heaters, trash compactors, dishwashers, microwave ovens, conventional ovens, ranges, stoves, woodstoves, air conditioners, refrigerators, and freezers.

(58) Maximum horizontal acceleration in lithified earth material means the maximum expected horizontal acceleration depicted on a seismic hazard map, with a ninety percent (90%) or greater probability that the acceleration will not be exceeded in two hundred fifty (250) years, or the maximum expected horizontal acceleration based on a site-specific seismic risk assessment.

(59) Mercuric-oxide battery or mercury battery means a battery having a mercuric-oxide positive electrode, a zinc negative electrode, and an alkaline electrolyte, including mercuric-oxide button cell batteries generally intended for use in hearing aides and larger size mercuric-oxide batteries used primarily in medical equipment.

(60) Motor oil means any oil intended for use in a motor vehicle, as defined in section 301.010, RSMo, train, vessel, airplane, heavy equipment, or other machinery powered by an internal combustion engine.

(61) Municipal wastes means household waste, commercial, agricultural, governmental, industrial and institutional waste which have chemical and physical characteristics similar to those of household waste.

(62) New sanitary landfill means any sanitary landfill that has not received waste prior to October 9, 1993.

(63) On-site means the same or geographically contiguous property which may be divided by public or private right-of-way, provided the entrance and exit between the properties is at a crossroads intersection and access is by crossing, as opposed to going along, the right-of-way. Noncontiguous properties owned by the same person but connected by a

right-of-way which s/he controls and to which the public does not have access is also considered on-site property.

(64) One hundred (100)-year flood means a flood that has a one percent (1%) or greater chance of recurring in any given year or a flood of a magnitude equalled or exceeded once in one hundred (100) years on the average over a significantly long period.

(65) Open burning means the combustion of solid waste without: 1) control of combustion air to maintain adequate temperature for efficient combustion, 2) containment of the combustion reaction in an enclosed device to provide sufficient residence time and mixing for complete combustion and 3) control of the emission of the combustion products.

(66) Open dump means an unpermitted solid waste disposal area at which solid wastes are disposed of in a manner that does not protect the environment, are susceptible to open-burning and are exposed to the elements, vectors and scavengers.

(67) Operator means a person who is responsible for the overall day-to-day operation and maintenance of a facility and along with the owner, obtains a solid waste permit from the department.

(68) Owner means any person holding a freehold interest in the land upon which the solid waste disposal area or solid waste processing facility is located.

(69) Owner/operator means owner and operator.

(70) Permeable geologic media means soil or lithified earth material that has a hydraulic conductivity of greater than 1.0 × 10-6 centimeters per second (cm/sec), as determined in situ aquifer tests, packer test or other methods approved by the department's geological survey program.

(71) Permit modification means any approval issued by the department which alters or modifies the provision of an existing permit previously issued by the department.

(72) Person means individual, partnership, corporation, association, institution, city, county, other political subdivision, authority, state agency or institution or federal agency or institution.

(73) Phase means a distinct area of a landfill, identifiable both in the plans and in the field by natural boundaries or permanent survey markers. A phase must include provisions for constructing and operating leachate collection systems, liners, gas collection systems and any other landfill structures independent of any other phase.

(74) Phased development means the division of the construction and operations of a solid waste disposal area permit into two (2) or more distinct phases in order to facilitate more orderly construction, operation, closure or post-closure care, or both, of the solid waste disposal area, with each phase being distinctly identifiable both in the plans and in the field by natural boundaries or permanent survey markers, or both.

(75) Piezometer means a well that is used to measure groundwater elevation or depth.

(76) Plans mean reports and drawings, including a narrative operating description, prepared to describe the solid waste disposal area or solid waste processing facility design, its proposed operation and closure and post-closure care.

(77) Poor foundation conditions means those areas where features exist which indicate that a natural or man-induced event may result in inadequate foundation support for the structural components of a landfill.

(78) Post-closure care means all maintenance and monitoring performed at a solid waste disposal area after closure is complete to prevent or minimize existing or potential health hazards, public nuisance or environmental pollution and in accordance with the terms of the permit, the Solid Waste Management Law and the corresponding rules.

(78) Post-closure plan means plans, designs and relevant data which specify the methods and schedules by which the operator shall perform necessary monitoring and care for the area after closure to achieve the purposes of the Solid Waste Management Law and the corresponding rules.

(80) Potable groundwater means groundwater that is safe for human consumption in that is is free from impurities in amounts sufficient to cause disease or harmful physiological effects and has less than ten thousand (10,000) parts per million total dissolved solids.

(81) Preliminary site investigation means an investigation conducted by the Division of Geology and Land Survey to determine the geohydrologic suitability for further exploration at a proposed solid waste disposal area.

(82) Professional engineer means a professional engineer licensed to practice by the Missouri Board for Architects, Professional Engineers, Professional Land Surveyors, and Landscape Architects.

(83) Qualified groundwater scientist means a scientist or licensed professional engineer who has received a baccalaureate or post-graduate degree in the natural sciences or engineering and has sufficient training and experience in groundwater hydrology and related fields as may be demonstrated by state registration, professional certifications or completion of accredited university programs that enable that individual to make sound professional judgments regarding groundwater monitoring, contaminant fate and transport, and corrective action.

(84) Rapid migration means the movement of fluids at rates in excess of ten feet (10') per year as determined by: tracer tests, age dating, in situ aquifer testing, packer tests or other methods as approved by the Geological Survey Program.

(85) Recovered materials means those material which have been diverted or removed from the solid waste stream for sale, use, reuse or recycling, whether or not they require subsequent separation and processing.

(86) Recycled content means the proportion of fiber or content in a product which is derived from post-consumer waste.

(87) Recycling means the separation and reuse or remanufacture of materials which might otherwise be disposed of as solid waste.

(88) Recycling center means any collection (not manufacturing) facility or system that accepts source-separated recyclable or commingled recyclable materials for processing and resale to markets for resource recovery for example: aluminum cans and scraps, tin, copper, glass, paper products, plastics, bi-metal and steel containers, ferrous and nonferrous metals.

(89) Resource recovery means a process by which recyclable and recoverable material is removed from the waste stream to the greatest extent possible, as determined by the department and pursuant to department standards, for reuse or remanufacture.

(90) Resource recovery facility means any facility including a material recovery facility in which recyclable and recoverable material is removed from the waste stream to the greatest extent possible, as determined by the department and pursuant to department standards, for reuse or remanufacture.

(91) Runoff means any liquid that drains over land from any part of a facility.

(92) Run-on means any liquid that drains over land onto any part of a facility.

(93) Salvaging means the controlled removal of solid waste materials for utilization.

(94) Sanitary landfill means a permitted solid waste disposal area employing an engineered method of disposing of solid wastes on land in a manner that minimizes environmental hazards by spreading the solid wastes in thin layers, compacting the solid wastes to the smallest practical volume and applying cover at the end of each operating day. Sanitary landfills include all disposal area that accept all types of solid waste including, but not limited to, commercial and residential solid waste.

(95) Scavenging means uncontrolled or unauthorized removal of solid waste from a solid waste disposal area or solid waste processing facility.

(96) Seismic impact zone means an area with a ten percent (10%) or greater probability that the maximum horizontal acceleration in lithified earth material, expressed as a percentage of the earth's gravitational pull (g), will exceed 0.10g in two hundred fifty (250) years.

(97) Site means any area proposed for construction of a solid waste disposal area.

(98) Sludge means the accumulated semi-solid suspension of settled solids deposited from wastewaters or other fluids in tanks or basins.

(99) Soil means sediments or other unconsolidated accumulations of solid particles produced by the physical and chemical disintegration of rocks and which may or may not contain organic matter.

(100) Solid waste means garbage, refuse and other discarded materials including, but not limited to, solid and semisolid waste materials resulting from industrial, commercial, agricultural, governmental and domestic activities, but does not include hazardous waste as defined in sections 260.360 to 260.434, RSMo recovered materials, overburden, rock, tailings, matte, slag or other waste material resulting from mining, milling or smelting.

(101) Solid waste disposal area means any area used for the disposal of solid waste from more than one (1) residential premises, or one (1) or more commercial, industrial, manufacturing, recreational or governmental operation.

(102) Solid waste management plan means a set of documents legally adopted by a state recognized governing body of a local or regional solid waste management program to administer the solid waste management system(s) for a minimum of ten (10) years.

(103) Solid waste management system means the entire process of managing solid waste in a manner which minimizes the generation and subsequent disposal of solid waste, including waste reduction, source separation, storage, collection, transportation, recycling, resource recovery, volume minimization, processing market development and disposal of solid wastes.

(104) Solid waste processing facility means any facility where solid wastes are salvaged and processed, including:
(A) A transfer station; or
(B) An incinerator which operates with or without energy recovery but excluding waste tire end-user facilities; or
(C) A material recovery facility which operates with or without composting.

(105) Solid waste technician means an individual who has successfully completed training in the practical aspects of the design, operation and maintenance of a permitted solid waste processing facility or solid waste disposal area in accordance with the Solid Waste Management Law and rules.

(106) Source reduction means practices which avoid, eliminate or minimize the generation of solid waste.

(107) Source-separated recyclable material means a waste material, for which a market exists, which has not been commingled with other solid waste but has been kept separate at the point of generation.

(108) Special waste means waste which is not regulated hazardous waste, which has physical or chemical characteristics, or both, that are different from municipal, demolition, construction and wood wastes, and which potentially require special handling.

(109) Special waste landfill means a solid waste disposal area permitted specifically for the disposal of one (1) or more special waste(s).
Special waste processing facility means a solid waste processing facility permitted specifically for the processing of one (1) or more special waste(s).

(111) Structural components means liners, leachate collection systems, final covers, run-on/runoff systems and any other component used in the construction and operation of the solid waste disposal area that is necessary for protection of human health and the environment.

(112) Tire means a continuous solid or pneumatic rubber covering encircling the wheel of any self-propelled vehicle not operated exclusively upon tracks, or a trailer as defined in Chapter 301, RSMo, except farm tractors and farm

implements owned and operated by a family farm or family farm corporation as defined in section 350.010, RSMo.

(113) Transfer station means a site or facility which accepts solid waste for temporary storage, or consolidation and further transfer to a waste disposal, processing or storage facility. Transfer station includes, but is not limited to, a site or facility where waste is transferred from: a rail carrier, motor vehicle or water carrier to another carrier, if the waste is removed from the container or vessel.

(114) Unstable area means a location that is susceptible to natural or human-induced events or forces capable of impairing the integrity of some or all of the landfill structural components responsible for preventing releases from a landfill. Unstable areas can include poor foundation conditions, areas, susceptible to mass movements and karst terranes.

(115) Uppermost aquifer means the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically interconnected with this aquifer within the property boundary.

(116) Uppermost regional aquifer means the hydrostratigraphic unit closest to the ground surface that is capable of consistently yielding at least three hundred sixty (360) gallons per day of potable water to a well and is commonly used for private or public drinking water supply.

(117) Used motor oil means any motor oil which as a result of use, becomes unsuitable for its original purpose due to loss of original properties or the presence of impurities, but used motor oil shall not include ethylene glycol oils used for solvent purposes, oil fibers that have been drained of free-flowing used oil, oily waste, oil recovered from oil tank cleaning operation, oil spilled to land or water, or industrial non-lube oils such as hydraulic oils, transmission oils, quenching oils, and transformer oils.

(118) Utility waste means fly ash waste, bottom ash waste, slag waste and flue gas emission control waste generated primarily from the combustion of coal or other fossil fuels.

(119) Utility waste landfill means a solid waste disposal area used for fly ash waste, bottom ash waste, slag waste and flue gas emission control waste generated primarily from the combustion of coal or other fossil fuels.

(120) Vector means a carrier including, but not limited to, arthropod, birds and rodents capable of transmitting a pathogen from one organism to another.

(121) Vegetation means plant materials that have been specified in the closure/post-closure plans and have been specifically cultivated for cover on the landfill and borrow area. Vegetation should provide at least eighty percent (80%) coverage in order to control erosion and limit water infiltration.

(122) Washout means the carrying away of solid waste by waters of the one hundred (100)-year flood.

(123) Waste tire means a tire that is no longer suitable for its original intended purpose because of wear, damage, or defect.

(124) Waste tire collection center means a site where waste tires are collected prior to being offered for recycling or processing and where fewer than five hundred (500) tires are kept on-site on any given day.

(125) Waste tire end-user facility means a site where waste tires are used as a fuel or fuel supplement or converted into a useable product. Baled or compressed tires used in structures, or used at recreational facilities, or used for flood or erosion control shall be considered an end use.

(126) Waste tire generator means a person who sells tires at retail or any other person, firm, corporation, or government entity that generates waste tires.

(127) Waste tire processing facility means a site where tires are reduced in volume by shredding, cutting, chipping or otherwise altered to facilitate recycling, resource recovery or disposal.

(128) Waste tire site means a site at which five hundred (500) or more waste tires are accumulated, but not including a site owned or operated by a waste tire end-user that burns waste tires for the generation of energy or converts waste tires to a useful product.

(129) Waters of the state mean all rivers, streams, lakes and other bodies of surface and subsurface water lying within or forming a part of the boundaries of the state which are not entirely confined and located completely upon lands owned, leased or otherwise controlled by a single person or by two (2) or more persons jointly or as tenants in common and includes waters of the United States lying within the state.

(130) Water table means the upper surface of a zone of saturation where the fluid pressure of the body of groundwater is equal to atmospheric pressure.

(131) Well means any hole drilled in the earth for or in connection with the discovery or recovery of water, minerals, oil, gas or for or in connection with the underground storage of gas in natural formations.

(132) Wetlands means those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands include, but are not limited to, swamps, marshes, bogs and similar areas.

133) Working face means that portion of the solid waste disposal area where solid wastes are discharged and are spread and compacted prior to the placement of cover.

(134) Yard waste means leaves, grass clippings, yard and garden vegation and Christmas trees. This term does not include stumps, roots or shrubs with intact root balls.]

(1) The terms used in 10 CSR 80 shall have the meanings set forth in section 260.200, RSMo, or this rule, unless the context of the term clearly indicates otherwise.

(A) Terms beginning with the letter A.

1. Active life or in operation means the period of operation beginning with the initial receipt of solid waste and ending at completion of closure activities.

2. Active portion means that part of the coal combustion residuals unit that has received or is receiving waste and that has not received department approval for closure.

3. Airport means a public-use airport open to the public without prior permission and without restrictions within the

physical capacities of available facilities.

4. Aquifer means a hydrostratigraphic unit capable of consistently yielding a sufficient amount of water to a monitoring well within twenty-four (24) hours of purging for sampling and analysis.

5. Areas susceptible to mass movement means those areas of influence (for example, areas characterized as having an active or substantial possibility of mass movement) where the movement of earth material at, beneath, or adjacent to the permitted solid waste disposal area, because of natural or anthropogenic events, results in the downslope transport of soil and rock material by means of gravitational influence. Areas of mass movement include, but are not limited to, landslides, avalanches, debris slides and flows, solifluction, block sliding, and rock fall.

(B) Terms beginning with the letter B.

1. Bedrock means the solid rock strata underlying solid and unconsolidated surface materials.

2. Beneficial use means the use of solid waste that provides a functional benefit, maintains the waste materials' value in the use, and is not a circumvention of the proper disposal of the waste material; substitutes for the use of or meets the product specifications of a virgin material, conserving natural resources that otherwise would need to be obtained through practices, such as extraction; and meets relevant product specifications, regulatory standards, or design standards, when available.

3. Beneficial use of Coal Combustion Residuals (CCR) means the CCR meet all of the following conditions:

A. The CCR must provide a functional benefit;

B. The CCR must substitute for the use of a virgin material, conserving natural resources that would otherwise need to be obtained through practices, such as extraction;

C. The use of the CCR must meet relevant product specifications, regulatory standards or design standards when available, and when such standards are not available, the CCR is not used in excess quantities; and

D. When unencapsulated, use of CCR involving placement on the land of twelve thousand and four hundred (12,400) tons or more in non-roadway applications, the user must demonstrate and keep records, and provide such documentation upon request, that environmental releases to groundwater, surface water, soil, and air are comparable to or lower than those from analogous products made without CCR, or that environmental releases to groundwater, surface water, soil, and air will be at or below relevant regulatory and health-based benchmarks for human and ecological receptors during use.

4. Bird hazard means an increase in the likelihood of bird/aircraft collisions that may cause damage to the aircraft or injury to its occupants.

(C) Terms beginning with the letter C.

1. Cell; see definition of phase.

2. Closed Landfill means a permitted solid waste disposal area or a portion thereof that has ceased accepting waste and has been granted official closure, in writing, from the department. Note: Closed CCR units are defined separately.

3. Closed CCR Unit means placement of CCR in a CCR unit has ceased, and the owner or operator has completed closure of the CCR unit in accordance with closure and post closure requirements specified by the department.

4. Coal combustion residuals (CCR) means fly ash, bottom ash, boiler slag, and flue gas desulfurization materials generated from burning coal.

5. Coal combustion residuals landfill means an area of land or an excavation that receives coal combustion residuals and which is not a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground or surface coal mine, or a cave.

6. Coal combustion residuals surface impoundment means a natural topographic depression, man-made excavation, or diked area, which is designed to hold an accumulation of coal combustion residuals and liquids, and the unit treats, stores, or disposes of coal combustion residuals.

7. Coal combustion residuals unit means any coal combustion residuals landfill, coal combustion residuals surface impoundment, or lateral expansion of a coal combustion residuals unit, or a combination of more than one (1) of these units. This term includes both new and existing units, unless otherwise specified.

8. Commercial waste means any type of solid waste generated by a business, but does not include residential or industrial wastes.

9. Commingled recyclables means more than one (1) type of source-separated recyclable material that has been placed in a single container for collection.

10. Competent bedrock means solid rock that underlies unconsolidated deposits (including residuum) which displays limited evidence of weathering throughout the rock mass.

11. Compliance monitoring wells means wells installed and sampled to obtain groundwater or methane gas samples for analysis on a regular basis and compare with regulatory standards or prior monitoring results to determine impacts from the solid waste disposal area.

12. Compost means the product manufactured through the controlled aerobic, biological decomposition of biodegradable materials. The product has undergone mesophilic and thermophilic temperatures, which significantly reduces the viability of pathogens and weed seeds, and stabilizes the carbon such that it is beneficial to plant growth. Compost typically is used as a soil amendment, but may also contribute plant nutrients.

13. Compost facility means a permitted or permit exempt (as prescribed by rule) solid waste processing facility, which accepts organic material that does not have to be source-separated, uses a controlled process of microbial degradation and generates compost.

14. Confining unit means a hydrostratigraphic unit of low permeability material above or below one (1) or more aquifers.

15. Corrective Action means measures taken to resolve or remediate violations, including but not limited to, the cleanup of a release of a contaminant (i.e. release of contaminant(s) to stormwater, groundwater, the land or air, from a fire or oxidation event, slope failure, or other event causing damage to the infrastructure or waste mass of a solid waste disposal area, damage to a solid waste processing facility, or damage off site).

16. Cover means soil or other suitable material that is approved by the department to be placed over compacted solid waste in a permitted solid waste disposal area.

(D) Terms beginning with the letter D.

1. Detailed site investigation means the process of conducting a detailed surface and subsurface geologic and hydrologic investigation for a proposed solid waste disposal area.

2. Detailed site investigation report means a written report that is submitted to the department concerning the results of a detailed surface and subsurface geologic and hydrologic investigation for a proposed solid waste disposal area.

3. Detailed site investigation work plan means a plan for conducting a detailed surface and subsurface geologic and hydrologic investigation for a proposed solid waste disposal area.

4. Dike means an embankment, berm, or ridge of either natural or man-made materials used to prevent the movement of liquids, sludges, solids, or other materials.

5. Displacement means the relative movement of any two (2) sides of a fault measured in any direction.

(E) Terms beginning with the letter E.

1. Encapsulated beneficial use means a beneficial use that binds the waste into a solid matrix that minimizes its mobilization into the surrounding environment.

2. Existing CCR surface impoundment means a CCR surface impoundment that receives CCR both before and after October 19, 2015, or for which construction commenced prior to October 19, 2015, and receives CCR on or after October 19, 2015. A CCR surface impoundment has commenced construction if the owner or operator has obtained the federal, state, and local approvals or permits necessary to begin physical construction and a continuous on-site, physical construction program had begun prior to October 19, 2015.

3. Existing CCR landfill means a CCR landfill that receives CCR both before and after October 19, 2015, or for which construction commenced prior to October 19, 2015 and receives CCR on or after October 19, 2015. A CCR landfill has commenced construction if the owner or operator has obtained the federal, state, and local approvals or permits necessary to begin physical construction and a continuous on-site, physical construction program had begun prior to October 19, 2015.

4. Existing sanitary landfill means any sanitary landfill that continues to receive solid waste in contiguous areas after October 9, 1993.

(F) Terms beginning with the letter F.

1. Factor of safety (Safety factor) means the ratio of the forces tending to resist the failure of a structure to the forces tending to cause such failure as determined by accepted engineering practice.

2. Floodplain means the lowland and relatively flat areas adjoining inland waters that are inundated by the one hundred (100)-year flood.

3. Free liquids means liquids that readily separate from the solid portion of a waste under ambient temperature and pressure.

4. Freeboard for a coal combustion residuals surface impoundment or leachate basin means: 1) For a compositely lined berm or dike, the vertical distance between the lowest lined point on the berm or dike and the surface of the waste or liquid contained therein; and 2) For an unlined berm or dike, the vertical distance between the lowest point on the crest of the berm or dike and the surface of the waste or liquid contained therein.

5. Fugitive dust is particulate matter defined as dust that is not emitted from definable point sources, such as a stacks, chimneys or vents; and becomes airborne from activities such as construction, grubbing, grading, vehicle traffic or hauling, soil and wind erosion, or other activities that remove, store, transport or redistribute the material. Sources include but are not limited to open fields, roadways, and storage piles (i.e. CCR piles, landfills, and impoundments).

(G) Terms beginning with the letter G.

1. Gas condensate means the liquid generated as a result of gas recovery process(es) at a permitted solid waste disposal area.

2. Geologic structure means the post-depositional deformation of bedrock and surficial materials resulting from physical stresses, (e.g. faults, folds).

3. Groundwater means water in the saturated zone beneath the land surface.

4. Groundwater monitoring plan means a document describing the strategy to effectively monitor groundwater.

5. Groundwater monitoring program means an effective program designed and implemented to ensure detection of an impact to groundwater by the solid waste disposal area.

(H) Terms beginning with the letter H.

1. Hazard potential classification means the possible adverse incremental consequences that result from the release of water or stored contents due to failure of the diked coal combustion residuals surface impoundment or misoperation of the diked coal combustion residuals surface impoundment or its appurtenances. The hazard potential classifications include high hazard potential coal combustion residuals surface impoundment, significant hazard potential coal combustion residuals surface impoundment, and low hazard potential coal combustion residuals surface impoundment, which terms mean:

A. High hazard potential coal combustion residuals surface impoundment means a diked surface impoundment where failure or misoperation results in probable loss of human life;

B. Low hazard potential coal combustion residuals surface impoundment means a diked surface impoundment where failure or misoperation results in no probable loss of human life and low economic and/or environmental losses. Losses are limited principally to the surface impoundment owner's property; and

C. Significant hazard potential coal combustion residuals surface impoundment means a diked surface impoundment where failure or misoperation results in no probable loss of human life, but can cause economic loss, environmental damage, disruption of lifeline facilities, or impact other concerns.

2. Hazardous waste means any waste or combination of wastes, as determined by the Hazardous Waste Management Commission by rules and regulations, which, because of quantity, concentration, or physical or chemical characteristics, may cause or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illnesses, or pose a present or potential threat to the health of humans or the environment.

3. Height means the vertical measurement from the downstream toe of the coal combustion residuals surface impoundment at its lowest point to the lowest elevation of the crest of the coal combustion residuals surface impoundment.

4. Holocene means the most recent epoch of the Quaternary Period, extending from the end of the Pleistocene Epoch to the present.

5. Horizontal expansion means an expansion of a permitted solid waste disposal area beyond approved current disposal area limits through issuance of a new permit by the department.

6. Household waste means any solid waste, including garbage, trash, and sanitary waste in septic tanks, generated from daily activities derived within a household, including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas. Household waste does not include furniture, mattresses, appliances, carpet, rugs, aerosol cans, paint, or construction and demolition waste.

7. Hydrostratigraphic unit means a geologic stratum or group of strata that exhibit similar characteristics with respect to transmission of fluids or gases.

8. Hydraulic conductivity means the rate at which water can move through a permeable medium.

(I) Terms beginning with the letter I.

1. Inactive permitted solid waste disposal area means a solid waste disposal area that is not receiving waste, has not completed all closure requirements, and has not received approval for official closure from the department.

2. Inactive permitted solid waste processing facility means a processing facility that is not currently receiving waste.

3. Incinerator means a permitted solid waste processing facility consisting of any device or structure resulting in weight or volume reduction of solid waste by combustion.

4. Incinerator residue means all wastes that remain after combustion, including bottom ash, fly ash, slag, and grate siftings.

5. Infectious waste means waste in quantities and characteristics as determined by the department by rule that is capable of producing an infectious disease because it contains pathogens of sufficient virulence and quantity so that exposure to the waste by a susceptible human host could result in an infectious disease. These wastes include isolation wastes, cultures and stocks of etiologic agents, blood and blood products, pathological wastes, and other contaminated wastes from surgery and autopsy; contaminated laboratory wastes, sharps, dialysis unit wastes, discarded

biological materials known or suspected to be infectious; provided, however, that infectious waste does not mean waste treated to department specifications.

6. Infectious waste processing facility means a solid waste processing facility that is permitted by the department for the transfer, treatment, or other processing of infectious waste. Treatment may include chemical sterilization, steam sterilization, ozone treatment, incineration, or other methods approved by the department.

(J) Terms beginning with the letter J.

1. (Reserved)

(K) Terms beginning with the letter K.

1. Karst terrains mean areas where karst, with its characteristic surface and subsurface features, is developed as the result of dissolution of limestone, dolomite, or other soluble rock. Characteristic physiographic features present in karst terrain include, but are not limited to, sinkholes, losing streams, caves, solution channels or conduits, springs, and solution valleys.

(L) Terms beginning with the letter L.

1. Land surveyor means a land surveyor licensed to practice by the Missouri Board for Architects, Professional Engineers, Professional Land Surveyors, and Professional Landscape Architects.

2. Landfill decomposition gas means the byproduct from the decomposition of organic material in landfills and is composed of approximately fifty percent (50%) methane, fifty percent (50%) carbon dioxide (CO_2), and trace amounts of non-methane organic compounds.

3. Lateral expansion means a new cell or phase added to the horizontal waste limits at an existing permitted solid waste disposal area. These include:

A. A coal combustion residuals surface impoundment or landfill expanded after October 19, 2015; or

B. A sanitary landfill expanded after October 9, 1993.

4. Leachate means liquid that has percolated through solid waste or has come in contact with solid waste and has extracted, dissolved, or suspended materials from it.

5. Leachate collection system means any combination of solid waste disposal area base slopes, liners, permeable zones, pipes, sumps, pumps, or retention structures that is designed, constructed, and maintained to manage and monitor leachate generation in a permitted solid waste disposal area and collect and remove leachate as necessary to reduce leachate depth.

6. Liner means a continuous layer(s) of soil, man-made materials, or both, beneath and on the sides of a permitted solid waste disposal area, which controls and minimizes the downward or lateral escape of solid waste, solid waste constituents, or leachate.

7. Liquefaction factor of safety means the factor of safety (safety factor) determined using analysis under liquefaction conditions.

8. Liquid waste means any waste material that is determined to contain free liquids as defined by Method 9095 (Paint Filter Liquids Test), as described in Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods (EPA Pub. No. SW-846) as written on the effective date of this rule.

9. Lithified earth material means all rock, including all naturally occurring and naturally formed aggregates or masses of minerals or small particles of older rock that formed by crystallization of magma or by induration of loose sediments. This term does not include man-made materials, such as fill, concrete and asphalt, or unconsolidated earth materials, soil, or regolith lying at or near the earth surface.

(M) Terms beginning with the letter M.

1. Maximum horizontal acceleration in lithified earth material means the maximum expected horizontal acceleration depicted on a seismic hazard map, with a ninety percent (90%) or greater probability that the acceleration will not be exceeded in two hundred fifty (250) years, or the maximum expected horizontal acceleration based on a site-specific seismic risk assessment.

2. Municipal solid wastes means household waste, commercial, agricultural, governmental, industrial, and institutional wastes that have chemical and physical characteristics similar to those of household waste.

(N) Terms beginning with the letter N.

1. New coal combustion residual surface impoundment means a coal combustion residuals surface impoundment that has not received waste prior to the effective date of this rule.

2. New permitted solid waste disposal area means any solid waste disposal area that has not received waste prior to the effective date of this rule.

(O) Terms beginning with the letter O.

1. Official closure means that a permitted solid waste disposal area has ceased taking waste, has completed all required closure activities, and has received written notice of official closure from the department.

2. On-site means the same or geographically contiguous property that may be divided by public or private right-of-way, provided the entrance and exit between the properties is at a crossroads intersection and access is by crossing, as opposed to going along, the right-of-way. Noncontiguous properties owned by the same person but connected by a right-of-way that s/he controls and to which the public does not have access is also considered on-site property.

3. One hundred (100)-year flood means a flood that has a one percent (1%) or greater chance of recurring in any given year or a flood of a magnitude equaled or exceeded once in one hundred (100) years on the average over a significantly long period.

4. Open burning means the combustion of solid waste without—

A. Control of combustion air to maintain adequate temperature for efficient combustion;

B. Containment of the combustion reaction in an enclosed device to provide sufficient residence time and mixing for complete combustion; and

C. Control of the emission of the combustion products.

5. Open dump means an unpermitted solid waste disposal area at which solid wastes are disposed of in a manner contrary to statute and regulations that does not protect the environment, are susceptible to open-burning, and are exposed to the elements, vectors, and scavengers.

6. Owner means any person holding a freehold interest in the land upon which the permitted solid waste disposal area or solid waste processing facility is located.

(P) Terms beginning with the letter P.

1. Permeable geologic media means soil or lithified earth material that has a hydraulic conductivity of greater than 1.0×10^{-6} centimeters per second (cm/sec), as determined by in situ aquifer tests, packer tests, or other methods approved by the department.

2. Phase or cell means a distinct area of a permitted solid waste disposal area, identifiable both in the plans and in the field by natural boundaries or permanent survey markers. A phase or cell must include provisions for constructing and operating leachate collection systems, liners, gas collection systems, and any other landfill structures independent of any other phase or cell.

3. Phased development means the division of the construction and operations of a solid waste disposal area permit into two (2) or more distinct phases in order to facilitate more orderly construction, operation, closure or post-closure care, or both, of the permitted solid waste disposal area, with each phase being distinctly identifiable both in the plans and in the field by natural boundaries or permanent survey markers, or both.

4. Piezometer means a well that is used to measure groundwater elevation or depth.

5. Plans mean reports and drawings, including a narrative

operating description, prepared to describe the permitted solid waste disposal area or solid waste processing facility design, its proposed operation, and closure and post-closure care.

6. Poor foundation conditions means those areas where features exist which indicate that a natural or man-induced event may result in inadequate foundation support for the structural components of a permitted solid waste disposal area.

7. Post-closure care means all maintenance and monitoring performed at a permitted solid waste disposal area, after it is designated as officially closed by the department, to prevent or minimize existing or potential health hazards, public nuisance, or environmental pollution and in accordance with the terms of the permit, the Solid Waste Management Law and the corresponding rules.

8. Potable groundwater means groundwater that is safe for human consumption in that it is free from impurities in amounts sufficient to cause disease or harmful physiological effects and has less than ten thousand (10,000) parts per million total dissolved solids.

9. Preliminary site investigation means an investigation conducted by the department to determine the geohydrologic suitability for further exploration at a proposed solid waste disposal area.

10. Probable maximum flood means the flood that may be expected from the most severe combination of critical meteorologic and hydrologic conditions that are reasonably possible in the drainage basin.

11. Professional engineer means a professional engineer licensed to practice by the Missouri Board for Architects, Professional Engineers, Professional Land Surveyors, and Professional Landscape Architects.

(Q) Terms beginning with the letter Q.

1. Qualified groundwater scientist means a scientist, registered geologist, or licensed professional engineer who has received a baccalaureate or post-graduate degree in the natural sciences or engineering and has sufficient training and experience in groundwater hydrology and related fields as may be demonstrated by state registration, professional certifications or completion of accredited university programs that enable that individual to make sound professional judgments regarding groundwater monitoring, contaminant fate and transport, and corrective action.

2. Qualified professional means a scientist, registered geologist, or licensed professional engineer who has received a baccalaureate or post-graduate degree in the natural sciences or engineering and has sufficient training and experience in overseeing an activity as may be demonstrated by state registration, professional certifications, or completion of accredited university programs that enable that individual to make sound professional judgments.

(R) Terms beginning with the letter R.

1. Rapid migration means the movement of fluids at rates in excess of ten feet (10') per year as determined by: tracer tests, age dating, in situ aquifer testing, packer tests, or other methods as approved by the department.

2. Recycling center means any collection (not manufacturing) facility or system that accepts source-separated recyclable or commingled recyclable materials for processing and resale to markets for resource recovery, including but not limited to, aluminum cans and scraps, tin, copper, glass, paper products, plastics, bi-metal and steel containers, ferrous and nonferrous metals.

3. Residential (household) activities means activities conducted during the routine, day-to-day operation of a residence.

4. Residential waste see definition of household waste.

5. Runoff means rainwater, leachate, or any other liquid that drains over land from any part of a permitted solid waste disposal area or solid waste processing facility.

6. Run-on means rainwater, leachate, or any other liquid that drains over land onto any part of a permitted solid waste disposal area or solid waste processing facility.

(S) Terms beginning with the letter S.

1. Salvaging means the controlled removal of solid waste materials from a permitted solid waste disposal area or solid waste processing facility.

2. Scavenging means uncontrolled or unauthorized removal of solid waste from a permitted solid waste disposal area or solid waste processing facility.

3. Seismic factor of safety means the factor of safety (safety factor) determined using analysis under earthquake conditions using the peak ground acceleration for a seismic event with a two percent (2%) probability of exceedance in fifty (50) years, equivalent to a return period of approximately two thousand five hundred (2,500) years, based on the U.S. Geological Survey (USGS) seismic hazard maps for seismic events with this return period for the region where the coal combustion residuals surface impoundment is located.

4. Seismic impact zone means an area with a ten percent (10%) or greater probability that the maximum horizontal acceleration in lithified earth material, expressed as a percentage of the earth's gravitational pull (g), will exceed 0.10g in two hundred fifty (250) years.

5. Site means any area proposed for construction of a solid waste disposal area.

6. Slope protection means engineered or non-engineered measures installed on the upstream or downstream slope of the coal combustion residuals surface impoundment to protect the slope against wave action or erosion, including but not limited to rock riprap, wooden pile, or concrete revetments, vegetated wave berms, concrete facing, gabions, geotextiles, or fascines.

7. Sludge means the accumulated semi-solid suspension of settled solids deposited from wastewaters or other fluids in tanks or basins.

8. Soil means sediments or other unconsolidated accumulations of solid particles produced by the physical and chemical disintegration of rocks and which may contain organic matter.

9. Solid waste management plan means a set of documents legally adopted by a state recognized governing body of a local or regional solid waste management program to administer the solid waste management system(s) for a minimum of ten (10) years.

10. Solid waste processing means one (1) or any combination of the following processes applied in the management of solid waste: salvaging, recovery, consolidation, sorting, transfer, incineration, composting, shredding or other size reduction, baling, or treatment of solid waste.

11. Source reduction means practices which avoid, eliminate, or minimize the generation of solid waste.

12. Source-separated recyclable material means a waste material, for which a market exists, which has not been commingled with other solid waste but has been kept separate at the point of generation.

13. Special waste means waste which is not a regulated hazardous waste, which has physical or chemical characteristics, or both, that are different from municipal, demolition, construction, and wood wastes, and which potentially require special handling.

14. Special waste landfill means a solid waste disposal area permitted specifically for the disposal of one (1) or more special waste(s).

15. Special waste processing facility means a solid waste processing facility permitted specifically for the processing of one (1) or more special waste(s).

16. Static factor of safety means the factor of safety (safety factor) determined using analysis under the long-term, maximum storage pool loading condition, the maximum surcharge pool loading condition, and under the end-of-construction loading

condition.

17. Structural components means liners, leachate collection systems, final covers, run-on/runoff systems and any other component used in the construction and operation of a permitted solid waste disposal area that is necessary for protection of human health and the environment.

(T) Terms beginning with the letter T.

1. Trade waste see definition of commercial waste.

2. Transfer station means a permitted solid waste processing facility which accepts waste for temporary storage, transfer, or consolidation, and further transport to a permitted solid waste disposal area or solid waste processing facility.

3. Truck-to-truck transfer means the act of transferring solid waste from one (1) solid waste collection vehicle into another collection vehicle, and which activity allows no waste to come into contact with the ground.

(U) Terms beginning with the letter U.

1. Unstable area means a location that is susceptible to natural or human-induced events or forces capable of impairing the integrity of some or all of the solid waste disposal area's structural components responsible for preventing releases from a solid waste disposal area. Unstable areas can include poor foundation conditions, areas susceptible to mass movements, and karst terranes.

2. Uppermost aquifer means the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically interconnected with this aquifer within the property boundary. Upper limit is measured at a point nearest to the natural ground surface to which the aquifer rises during the seasonal high groundwater table.

3. Uppermost regional aquifer means the hydrostratigraphic unit closest to the ground surface that is capable of consistently yielding at least three hundred sixty (360) gallons per day of potable water to a well and is commonly used for private or public drinking water supply.

4. Utility waste means fly ash waste, bottom ash waste, slag waste, and flue gas emission control waste generated primarily from the combustion of coal or other fossil fuels.

(V) Terms beginning with the letter V.

1. Vector means a carrier including, but not limited to, arthropod, birds, and rodents capable of transmitting a pathogen from one (1) organism to another.

2. Vegetation means permanent plant materials that have been specified in the closure/post-closure plans and have been cultivated specifically for cover on the solid waste disposal area and its borrow area.

3. Vertical expansion means an expansion of a permitted solid waste disposal area vertically above the approved existing disposal area limits through issuance of a permit modification by the department.

(W) Terms beginning with the letter W.

1. Washout means the carrying away of solid waste by waters of the one hundred (100)-year flood.

2. Waste boundary means a vertical surface located at the waste limit of the solid waste disposal area extending down into the uppermost aquifer.

3. Waters of the state see section 644.016, RSMo.

4. Water table means the upper surface of a zone of saturation where the fluid pressure of the body of groundwater is equal to atmospheric pressure.

5. Well see section 256.603, RSMo.

6. Wetlands means those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands include, but are not limited to, swamps, marshes, bogs, and similar areas.

7. Working face means that portion of the solid waste disposal area where solid wastes are discharged, spread, and compacted prior to the placement of cover.

(X) Terms beginning with the letter X.

1. (Reserved)

(Y) Terms beginning with the letter Y.

1. (Reserved)

(Z) Terms beginning with the letter Z.

1. (Reserved)

(2) All other words used in this chapter have their usual customary and accepted meaning, and all words of a technical nature, or specific to the solid waste industry, will be given that meaning which is generally accepted in the solid waste industry.

AUTHORITY: sections 260.200[, RSMo Supp. 2005] and 260.225, RSMo [2000] ***2016****. Original rule filed Dec. 11, 1973, effective Dec. 21, 1973. For intervening history, please consult the* ***Code of State Regulations****. Amended: Filed Dec. 31, 2018.*

PUBLIC COST: This proposed amendment will not cost state agencies or political subdivisions more than five hundred dollars ($500) in the aggregate.

PRIVATE COST: This proposed amendment will not cost private entities more than five hundred dollars ($500) in the aggregate.

NOTICE OF PUBLIC HEARING AND NOTICE TO SUBMIT COMMENTS: Anyone may file a statement in support of or in opposition to this proposed amendment with the Missouri Department of Natural Resources, 1101 Riverside Drive, Jefferson City, MO. To be considered, comments will be received until March 28, 2019. A public hearing is scheduled for 1:00 p.m. March 21, 2019, at the LaCharrette Conference Room, 1101 Riverside Drive, Jefferson City, Missouri.

Title 10—DEPARTMENT OF NATURAL RESOURCES
Division 80—Solid Waste Management
[Chapter 11—Utility Waste Landfill]
Chapter 11—Utility Waste *and Coal Combustion Residuals* Landfills

PROPOSED AMENDMENT

10 CSR 80-11.010 Design and Operation—*Utility Waste and Coal Combustion Residuals Landfills*. The department is amending the chapter and rule title, deleting the purpose and all sections, and adding new purpose and sections (1)–(20).

PURPOSE: The purpose of this amendment is to modify the provisions for Utility Waste Landfills and make those provisions applicable to Coal Combustion Landfills as specified in 40 CFR 257 and section 260.242, RSMo.

[PURPOSE: This rule pertains to the design and operation of a utility waste landfill.

(1) General Provisions. This rule is intended to provide for utility waste landfill operations that will have minimal impact on the environment. The rule sets forth requirements and the method of satisfactory compliance to ensure that the design, construction and operation of utility waste landfills will protect the public health, prevent nuisances and meet applicable environmental standards. The requirement subsections contained in this rule delineate minimum levels of performance required of any utility waste landfill operation. The satisfactory compliance subsections are presented as the authorized methods by which the objectives of the

requirements can be realized. The satisfactory compliance subsections are based on the practice of landfilling utility waste. If techniques other than those listed as satisfactory compliance in design or operation are used, it is the obligation of the utility waste landfill owner/operator to demonstrate to the department in advance that the techniques to be employed will satisfy the requirements. Procedures for the techniques shall be submitted to the department in writing and approved by the department in writing prior to being employed. Notwithstanding any other provision of these rules, when it is found necessary to meet objectives of the requirement subsections, the department may require changes in design or operation as the condition warrants. This rule applies to new utility waste landfill construction and operating permits issued on or after the effective date of this rule.

(2) Solid Waste Accepted.

(A) Requirement. Fly ash, bottom ash, boiler slag or other slag waste and flue gas emission control waste generated primarily from the combustion of coal or other fossil fuels may be accepted at a utility waste landfill. Clean fill may also be accepted.

(B) Satisfactory Compliance—Design. The plans shall specify the types of waste to be accepted for disposal at a utility waste landfill.

(C) Satisfactory Compliance—Operations.

1. The first layer of waste placed above the liner shall be monitored to ensure that the liner's integrity has been maintained.

2. The disposal of waste approved in the construction permit shall be conducted in accordance with approved design and operating plans plus any additional procedures determined by the department as necessary to protect the water, air and land resources and to provide for safety of the operators and waste haulers.

(3) Solid Waste Excluded.

(A) Requirement. In consultation with the department, the applicant shall determine what wastes are to be accepted and shall identify them in the plan and the application for construction permit form.

(B) Satisfactory Compliance—Design.

1. The criteria used to determine whether the waste can be accepted shall include the design of the landfill, the physical and chemical characteristics of the wastes, the quantity of the wastes, the proposed operating procedures.

2. The plans shall specify the operating procedures for screening and removal of wastes which are excluded from disposal.

(C) Satisfactory Compliance—Operations.

1. The operating procedures for screening of wastes and for removal of wastes which are excluded from disposal shall be implemented.

2. Bulk liquid waste shall not be placed in a utility waste landfill unless the waste is leachate derived from the utility waste landfill, and the utility waste landfill is designed with a liner and leachate collection system as described in sections (9) and (10) of this rule.

3. Sluicing of waste for transport to proposed utility waste landfills shall be allowed only so long as the hydraulic head on top of the landfill liner can be maintained at less than one foot (1') of head, and the collected leachate and runoff meet all Water Pollution Control Program permit requirements.

(4) Site Selection.

(A) Requirement. Site selection and utilization shall include a study and evaluation of geologic and hydrologic conditions and soils at the proposed utility waste landfill and an evaluation of the environmental effect upon the projected use of the completed utility waste landfill. Applications for utility waste landfill construction permits received on or after the effective date of this rule shall document compliance with all applicable siting restriction requirements contained in paragraphs (4)(B)1. through 5. of this rule.

(B) Satisfactory Compliance—Design.

1. Owners/operators of proposed utility waste landfills, located in one hundred (100)-year floodplains shall demonstrate to the department that the utility waste landfill will not restrict the flow of the one hundred (100)-year flood, reduce the temporary water storage capacity of the floodplain, or result in washout of waste so as to pose a hazard to public health or the environment.

2. Wetlands.

A. Proposed utility waste landfills shall not be located in wetlands, unless the owner/operator can make the following demonstrations to the department:

(I)The presumption that a practicable alternative to the proposed landfill is available which does not involve wetlands is clearly rebutted;

(II) The construction and operation of the utility waste landfill will not—

(a) Cause or contribute to violations of any applicable state water quality standard;

(b) Violate any applicable toxic effluent standard or prohibition under section 307 of the federal Clean Water Act;

(c) Jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical habitat, protected under the Endangered Species Act of 1973; and

(d) Violate any requirement under the Marine Protection, Research, and Sanctuaries Act of 1972 for the protection of a marine sanctuary;

(III) The utility waste landfill will not cause or contribute to significant degradation of wetlands. The owner/operator shall demonstrate the integrity of the utility waste landfill and its ability to protect ecological resources by addressing the following factors:

(a) Erosion, stability and migration potential of native wetland soils, muds and deposits used to support the landfill;

(b) Erosion, stability and migration potential of dredged and fill materials used to support the landfill;

(c) The volume and chemical nature of the waste disposed of in the landfill;

(d) Impacts on fish, wildlife and other aquatic resources and their habitat from potential release of waste from the landfill;

(e) The potential effects of contamination of the wetland and the resulting impacts on the environment; and

(f) Any additional factors, as necessary, to demonstrate that ecological resources in the wetland are sufficiently protected;

(IV) Steps have been taken to attempt to achieve no net loss of wetlands (as defined by acreage and function) by first avoiding impacts to wetlands to the maximum extent practicable as required by subparagraph (4)(B)2.A. of this rule, then minimizing unavoidable impacts to the maximum extent practicable, and finally offsetting remaining unavoidable wetland impacts through all appropriate and practicable compensatory mitigation actions (for example, restoration of existing degraded wetlands or creation of man-made wetlands); and

(V) The requirements of paragraph (4)(B)3. may be

satisfied by the owner/operator obtaining a United States Army Corps of Engineers permit for construction in a wetland or by demonstrating that the wetland is not regulated by the United States Army Corps of Engineers or other appropriate agency.

3. Proposed utility waste landfills located in the seismic impact zone shall not be located within two hundred feet (200') of a fault that has had displacement in Holocene time unless that owner/operator demonstrates to the department that an alternative setback distance of less than two hundred feet (200') will prevent damage to the structural integrity of the landfill and will be protective of public health and the environment.

4. Owners/operators of proposed utility waste landfills located in an unstable area shall demonstrate to the department that the utility waste landfill's design ensures that the integrity of the structural components of the utility waste landfill will not be disrupted. The owner/operator shall consider the following factors, at a minimum, when determining whether an area is unstable:

A. On-site or local rock or soil conditions that may result in failure or significant differential settling;

B. On-site or local geologic or geomorphologic features; and

C. On-site or local human-made features or events (both surface and subsurface).

5. Plans shall include:

A. A map showing initial and proposed topographies at contour intervals of five feet (5') or less. This map shall have a scale of not less than one inch (1") equal to one hundred feet (100'). If the entire site cannot be illustrated on one (1) plan sheet, an additional map with appropriate horizontal and vertical scales that allows the site to be shown on one (1) plan sheet is required;

B. A map showing the land use and zoning within one-fourth (1/4) mile of the utility waste landfill including location of all residences, buildings, wells, water courses, springs, lakes, rock outcroppings, caves, sinkholes and soil or rock borings. All electric, gas, water, sewer and other utility easements or lines that are located on, under or over the utility waste landfill shall be shown on the map. This map shall have a scale of not less than one inch (1") equals four hundred feet (400');

C. A description of the projected use of the closed utility waste landfill if the landfill is not located on the power plant site. In addition to maintenance programs and provisions, where necessary for monitoring and controlling leachate, the plans shall specify appropriate design, construction and operating provisions for the utility waste landfill to complement the projected future use;

D. An evaluation of the characteristics and quantity of available on-site soil with respect to its suitability for utility waste landfilling operations. The engineering properties and quantity estimates of the on-site soil shall be discussed and shall include:

(I) Texture. Sieve and hydrometer analyses shall be performed to determine grain size distribution of representative soil samples. Texture may be determined by using the procedures described in ASTM method D422-63 or the procedures described in Appendix D of Engineer Manual 1110-2-1906 prepared by the United States Army Corps of Engineers;

(II) Plasticity. The liquid limit, plastic limit and plasticity index of representative soil samples shall be determined. Plasticity may be determined by using the procedures described in ASTM method D4318-84 or the procedures described in Appendix III of Engineer Manual 1110-2-1906, prepared by the United States Army Corps of Engineers;

(III) Hydraulic conductivity. Laboratory hydraulic conductivity tests shall be performed upon undisturbed representative soil samples using a flexible wall permeameter (ASTM D-5084). If an aquifer is found to be laterally continuous across the anticipated limit of the proposed landfill, the hydraulic conductivity of each significant continuous geologic unit must be determined. Examples of accepted field tests are in situ slug or pump tests which isolate the geologic unit of interest.

(IV) Areal extent and depth. The areal extent and depth of soil suitable for landfill construction shall be determined. Variations in soil depth shall be clearly described.

6. If the base of the landfill liner will be in contact with groundwater, the applicant shall demonstrate to the department's satisfaction that the groundwater will not adversely impact the liner.

7. Owners/operators of proposed utility waste landfills shall demonstrate how adverse geologic and hydrologic conditions may be altered or compensated for via surface water drainage diversion, underdrains, sumps, and other structural components. All alterations of the site shall be detailed in the plans. Precipitation, evapotranspiration and climatological conditions shall be considered in site selection and design.

8. The results of the detailed site investigation report will be the basis to determine if a secondary liner, such as a geomembrane, or a leachate collection system is mandatory to ensure that there is no environmental impact from the landfill. Owner/operators of proposed utility waste landfills shall make a demonstration based on the following:

A. An evaluation of the physical and/or chemical characteristics of the waste; and

B. Documentation through modeling, testing, or other research data proving that the quality of groundwater underlying the proposed site will not be affected and that there is no potential for migration of fluids from the utility waste landfill.

(C) Satisfactory Compliance—Operations.

1. The utility waste landfill shall be accessible to vehicles which the utility waste landfill is designed to serve.

2. Temporary storage of waste for more than sixty (60) days is not permitted. Temporarily stored wastes shall be managed so as to prevent uncontrolled surface water runoff and erosion. All Water Pollution Control Program permits and approvals necessary to comply with the Missouri Clean Water Law and corresponding rules shall be obtained from the department.

(5) Design.

(A) Requirement. Plans, addendums, as-built drawings, or other documents which describe the design, construction, operation, or closure of a utility waste landfill or which request an operating permit modification for the utility waste landfill shall be prepared or approved by a professional engineer. These documents shall be stamped or sealed by the professional engineer and submitted to the department for review and approval.

1. Plans submitted as part of an application for a construction permit after the effective date of this rule shall provide for the maintenance of a one hundred foot (100')-buffer zone between utility waste landfill operations and any property line(s) or any right of way(s) of adjoining road(s) when the property line(s) is inside the right of way(s) to provide for assessment and/or remedial actions.

2. The plan shall include an operating manual describing the various tasks that shall be performed during a typical shift.

3. Owners/operators of utility waste landfills shall

demonstrate how adverse geologic and hydrologic conditions may be altered or compensated for via surface water drainage diversion, underdrains, sumps, and other structural components. All alterations of the site shall be detailed in the plans.

A. Precipitation, evapotranspiration and climatological conditions shall be considered in site selection and design.

B. Engineering plans and specifications that have computer model attached to them shall list the limitations and assumptions of each model used in the application.

4. Plans for stability analyses for all stages of construction shall include:

A. Settlement and bearing capacity analyses shall be performed on the in-place foundation material beneath the disposal area. The effect of foundation material settlement on the liner and leachate collection shall be evaluated;

B. Stability analyses shall be performed on all liner and leachate system components;

C. Leachate collection pipe material and drainage media shall be analyzed to demonstrate that these components possess structural strength to support maximum loads imposed by overlying waste materials and equipment;

D. Waste mass stability analyses shall be performed on the disposal area at final waste grade conditions and at intermediate slope conditions; and

E. Stability analyses shall be performed on all final cover system components, including an evaluation of the effect of waste settlement on the final cover system components, side slope liner system components, surface water management system components and gas migration system components.

(B) Satisfactory Compliance—Operations.

1. Construction and operation of the utility waste landfill shall be conducted in accordance with the engineering plans and specifications approved by the department.

2. The operating manual describing the various tasks that shall be performed during a typical shift shall be available to employees for reference and to the department upon request.

3. Phase development drawings shall be included with the application.

(6) Quality Assurance/Quality Control (qa/qc).

(A) Requirement. The construction, operation and closure of the utility waste landfill shall include quality assurance and quality control measures to ensure compliance with approved plans and all applicable federal, state and local requirements. The permittee shall be responsible for ensuring that the qa/qc supervision is conducted by a qualified professional.

(B) Satisfactory Compliance—Design.

1. Plans shall include:

A. A detailed description of the qa/qc testing procedures that will be used for every major phase of construction. The description must include at a minimum, the frequency of inspections, field testing, laboratory testing, equipment to be utilized, the limits for test failure, and a description of the procedures to be used upon test failure; and

B. A detailed procedure for the reporting and recording of qa/qc activities and testing results.

2. All qa/qc reports shall be reviewed and approved by a professional engineer.

(C) Satisfactory Compliance—Operations.

1. At a minimum qa/qc testing shall include:

A. Testing of each lift of the soil component of the final cover and landfill liner for field density and field moisture once per every ten thousand (10,000) square feet and providing relatively uniform coverage over the landfill surface;

B. Laboratory hydraulic conductivity testing of the soil used for liner construction once for every five thousand (5,000) cubic yards of liner constructed;

C. Continuous visual classification of borrow soil during landfill construction by qualified qa/qc inspector(s) or certifying professional engineer;

D. Measuring the elevations of the final cover and the landfill liner on a maximum spacing of one hundred-foot (100') centers and at one hundred-foot (100') intervals along each line where a break in slope occurs.

(I) Landfill liner. Measuring the elevations of the top and bottom of the landfill liner;

(II) Final cover. Measuring the elevations of the top and bottom of—

(a) The compacted clay layer; and

(b) The soil layer supporting vegetative growth; and

E. Verification of the thickness of the leachate collection media shall be made by the qualified qa/qc inspector(s) or certifying professional engineer on one hundred-foot (100') centers.

2. If a geomembrane is proposed—

A. Nondestructive testing of all seams of the geomembrane in the landfill liner; and

B. Random destructive testing of the seams of the geomembrane liner in the landfill liner on an average frequency of at least one (1) every five hundred (500) linear feet of seams.

3. All testing shall be performed under the direction of qualified qa/qc inspectors for every major phase of construction.

4. The qa/qc plan shall include the following components:

A. Leachate collection system. Reports prepared or approved by the professional engineer transmitting the results of the qa/qc procedures and stating that the leachate collection system was constructed according to the approved design or describing any deviations from the approved design; and

B. Liner. The liner specified by section (10) of this rule shall be constructed in accordance with the approved design specifications. The qa/qc procedures shall include:

(I) Evidence that the liner material(s) utilized meet the minimum design specifications;

(II) Evidence that field construction techniques are resulting in the minimum design specifications (for example, soil density tests);

(III) Evidence that the liner construction is proceeding as designed through regular verification using a predetermined system of horizontal and vertical survey controls; and

(IV) Oversight of the liner construction and qa/qc procedures by a professional engineer. This shall include reports prepared, or approved, by the professional engineer transmitting the results of the qa/qc procedures and stating that the liner was constructed according to design or describing any deviations from the design.

(7) Survey Control.

(A) Requirement. Benchmarks, horizontal controls and boundary markers shall be established by a land surveyor to check and mark the location and elevations of the utility waste landfill. Construction stakes marking an individual section(s) or phase(s) shall be established as necessary to ensure the construction and operation(s) proceed in accordance with approved plans.

(B) Satisfactory Compliance—Design.

1. Boundary survey. A survey of the entire permitted acreage shall be conducted in accordance with the current Minimum Standards for Property Boundary Surveys, 10 CSR 30-2.010.

2. Vertical control. The land surveyor shall establish a permanent monument as a benchmark or confirm the prior establishment of a benchmark on or adjacent to the property. The elevation shall be on the North American Vertical Datum, 1929 or similar well-documented datum. If no such established datum exists within one (1) mile of the property, a project datum may be assigned to the benchmark. The benchmark shall be clearly shown on the survey plat.

3. Horizontal control. The land surveyor shall establish three (3) permanent monuments as horizontal control stations. These stations shall form a triangle whose sides shall not be less than one thousand feet (1,000'). The location of the horizontal control will be shown on the survey plat.

4. The land surveyor shall establish boundary markers designating the entire permitted acreage which shall be composed of material which will last throughout the life of the utility waste landfill.

5. Construction stakes. Stakes marking the individual section(s) or phase(s) specifically designated for the placement of waste are to be placed in locations and composed of material that is consistent with the operating life of the section or phase.

(C) Satisfactory Compliance—Operations.

1. All boundary markers, benchmarks, horizontal control stations and construction stakes shall be clearly marked and identified.

2. Missing or displaced benchmarks or horizontal control stations shall be replaced or reestablished by or under the supervision of a land surveyor. The registered surveyor shall prepare a plat showing the replacement or reestablishment and furnish a copy to the department.

3. Missing or displaced construction stakes shall be replaced or reestablished as necessary to ensure the operations proceed in accordance with approved plans.

4. The permanent monuments designating vertical and horizontal control stations and boundary markers designating the entire permitted acreage shall be placed prior to receiving an operating permit as required by 10 CSR 80-2.020(2)(B).

5. Construction stakes marking the active area shall be placed prior to deposition of waste in individual areas, sections or phases of the utility waste landfill as designated by the approved engineering plans.

(8) Water Quality.

(A) Requirement. The location, design, construction and operation of the utility waste landfill shall minimize environmental hazards and shall conform to applicable ground and surface water quality standards and requirements. Applicable standards are federal, state or local standards and requirements that are legally enforceable.

(B) Satisfactory Compliance—Design.

1. Plans shall include:

A. A report on the detailed geologic and hydrologic investigation of the site as required by 10 CSR 80-2.015;

B. Current and projected use of water resources in the potential zone of influence of the utility waste landfill;

C. Groundwater elevation and proposed separation between the lowest point of the lowest cell and the predicted maximum water table elevation;

D. Potential interrelationship of the utility waste landfill, local aquifers and surface waters based on historical records or other sources of information;

E. Proposed location and design of observation wells, sampling stations and testing program planned; and

F. Provisions for surface water runoff control to minimize infiltration and erosion of cover. All Water Pollution Control Program permits and approvals necessary to comply with requirements of the Missouri Clean Water Law and corresponding rules shall be obtained from the department.

(I) The area of the watershed which will be affected by the utility waste landfill shall be specified.

(II) On-site drainage structures and channels shall be designed to prevent flow onto the active portion of the utility waste landfill during peak discharge from at least a twenty-five (25)-year storm. The engineering calculations and assumptions shall be included and explained in the engineering report.

(III) On-site drainage structures and channels shall be designed to collect and control at least the water volume resulting from a twenty-four (24)-hour, twenty-five (25)-year storm.

(IV) On-site drainage and channels shall be designed to empty expeditiously after storms to maintain the design capacity of the system.

(V) Contingency plans for on-site management of surface water which comes in contact with solid waste shall be specified.

(C) Satisfactory Compliance—Operations.

1. Surface water courses and runoff shall be diverted from the utility waste landfill (especially from the working face) by devices such as ditches, berms, and proper grading. The utility waste landfill shall be constructed and graded so as to promote rapid surface water runoff without excessive erosion. Regrading shall be done as required during construction and after completion to avoid ponding of precipitation and to maintain cover integrity.

2. The quantity of water coming in contact with solid waste shall be minimized by the daily operational practices. Water which comes in contact with the waste shall be managed as leachate in accordance with the approved plans.

(9) Leachate Collection Systems.

(A) Requirement. A leachate collection system shall be designed, constructed, maintained and operated to collect, and remove leachate from the utility waste landfill, unless the applicant provides adequate demonstrations specified in paragraph (4)(B)8. of this rule, and as determined by the department on a site-by-site basis.

(B) Satisfactory Compliance—Design. The potential for leachate generation shall be evaluated in determining the design of the system. Leachate flow quantities shall be estimated and the method(s) of leachate management shall be outlined. Leachate storage facilities shall comply with all currently applicable requirements of the Missouri Clean Water Law and corresponding rules. Construction qa/qc procedures shall be included. Where a leachate treatment system is designed to have a discharge to the waters of the state, any required discharge permit(s) shall be obtained from the department in accordance with requirements of the Missouri Clean Water Law and corresponding rules.

1. Minimum design criteria for leachate collection systems shall include the following:

A. Ponds and/or tanks of sufficient capacity to store, equalize flow to disposal systems, and allow system/operating flexibility;

B. Construction material chemically resistant to the waste managed in the utility waste landfill and the leachate expected to be generated;

C. Construction materials of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying utility wastes, cover, leachate, and by any equipment

used at the utility waste landfill;

D. Design and operate systems to function without clogging through the scheduled operating life, closure and post-closure of the utility waste landfill;

E. Design and operate to maintain less than one foot (1') depth of leachate over the disposal area liner; and

F. Design and operate collection systems so that any leachate formed will flow by gravity into collection areas from which the leachate can be removed, treated, and disposed.

2. Leachate management by recirculation within the permitted fill area shall be conducted in accordance with an approved engineering method.

3. Any leachate collection system open to the atmosphere must be designed to prevent discharge during a twenty-five (25)-year, twenty-four (24)-hour storm event. Plans shall include the calculations detailing the design.

4. The applicant shall provide a method of leachate management in the application. A secondary or "backup" method of leachate disposal will be required unless the applicant can demonstrate that a secondary method will not be necessary.

(C) Satisfactory Compliance—Operations.

1. The leachate collection system specified by subsection (9)(B) shall be properly installed and operated in accordance with the permit and the approved design and plans and maintained for the twenty (20)-year post-closure care period, or as long as the department determines necessary.

2. Leachate generated by the utility waste landfill shall be controlled on-site and not be allowed to discharge off the utility waste landfill property or discharge into the waters of the state, except in accordance with the approved plans and the Missouri Clean Water Law and corresponding rules.

(10) Liner System.

(A) Requirement. A liner shall be placed on all surfaces to minimize the migration of leachate from the utility waste landfill.

(B) Satisfactory Compliance—Design. A composite or a clay liner shall be required at all utility waste landfills applying for a construction permit after the effective date of this rule that includes—

1. For a composite liner a lower component that consists of at least a two-foot (2') layer of compacted soil with a hydraulic conductivity of no more than 1 x 10-5 cm/sec. A compacted soil liner at a minimum shall be constructed of six to eight-inch (6 8") lifts, compacted to ninety-five percent (95%) of standard Proctor density with the moisture content between optimum moisture content and four percent (4%) above the optimum moisture content, or within other ranges of density and moisture such that are shown to provide for the liner to have a hydraulic conductivity no more than 1 x 10-5 cm/sec. For a single compacted clay liner a component that consists of at least a two-foot (2') layer of compacted soil with a hydraulic conductivity of no more than 1 x 10-7 cm/sec. A compacted soil liner at a minimum shall be constructed of six to eight-inch (6 8") lifts, compacted to ninety-five percent (95%) of standard Proctor density with the moisture content between optimum moisture content and four percent (4%) above the optimum moisture content, or within other ranges of density and moisture such that are shown to provide for the liner to have a hydraulic conductivity no more than 1 x 10-7 cm/sec. The design shall include a detailed explanation of the construction techniques and equipment necessary to achieve ninety-five percent (95%) of the standard Proctor density under field conditions. The design also shall include qa/qc procedures to be followed during construction of the liner. The composite liner and the compacted clay liner shall be protected from the adverse effects of desiccation or freeze/thaw cycles after construction, but prior to placement of waste. Traffic shall be routed so as to minimize the detrimental impact on the constructed liner prior to placement of waste. The soils used for this purpose shall meet the following minimum specifications:

A. Be classified under the Unified Soil Classification Systems as CL, CH, or SC (ASTM Test D2487-85);

B. Allow more than thirty percent (30%) passage through a No. 200 sieve (ASTM Test D1140);

C. Have a liquid limit equal to or greater than twenty (20) (ASTM Test D4318-84);

D. Have a plasticity index equal to or greater than ten (10) (ASTM Test D4318-84); and

E. Have a coefficient of permeability equal to or less than 1 x 10-7 cm/sec for the compacted clay liner and 1 x 10-5 cm/sec for the composite liner when compacted to ninety-five percent (95%) of standard Proctor density with the moisture content between optimum moisture content and four percent (4%) above the optimum moisture content, when tested by using a flexible wall permeameter (ASTM D-5084) or other procedures approved by the department;

2. For the composite liner an upper component consisting of a minimum thirty (30) mil thick geomembrane shall be installed if the applicant for a proposed utility waste landfill does not provide adequate demonstrations specified in paragraph (4)(B)8. of this rule, and as determined by the department on a site-by-site basis. Geomembrane components consisting of high density polyethylene (HDPE) shall be at least sixty (60) mil thick;

3. The geomembrane component shall be installed in direct and uniform contact with the compacted soil component so as to minimize the migration of leachate through the geomembrane should a break occur; and

4. All utility waste landfills shall have a minimum bottom slope in any direction of flow of at least one percent (1%).

(C) Satisfactory Compliance—Operations.

1. A test pad shall be constructed at the site and tested to verify that the proposed construction and quality control (qc) procedures are adequate to ensure that the soil component of the composite liner system will meet the requirements of paragraph (10)(B)1. of this rule.

A. Construction and qc procedures to be used during test pad construction shall be described in detail in the approved engineering report, and shall be identical to those proposed for liner construction with the following additions: At least two (2) laboratory hydraulic conductivity tests shall be performed on undisturbed samples of the completed test pad;

(I) At least one (1) in situ hydraulic conductivity test shall be performed on the completed test pad; and

(II) At least two (2) test pits shall be excavated into the completed test pad to observe interlift bonding.

B. If test pad construction and testing shows that the proposed methods are not sufficient to meet the requirements of paragraph (10)(B)1. of this rule, a new test pad shall be constructed using revised procedures approved by the department.

2. For phased construction, only one (1) test pad will be required.

3. A final report shall be submitted to the department which describes in detail the construction and qc procedures which were used to achieve satisfactory test pad performance.

A. The report must be approved by the department prior to beginning construction of any portion of the composite

liner system in the disposal area.

B. The report shall serve as guidance for construction of the soil component of the composite liner system.

4. The requirement for a test pad may be waived provided—

A. The applicant can demonstrate to the department's satisfaction the construction and qc procedures are identical to those described in the approved engineering report and will result in construction of a liner which meets the requirements of paragraph (10)(B)1. of this rule; and

B. The soils proposed for liner construction meet the following minimum specifications:

(I) Have a plasticity index greater than fifteen (15) and less than thirty (30) (ASTM test D4318-84);

(II) Allow more than fifty percent (50%) passage through a number 200 seive (ASTM D11400); and

(III) Have less than ten percent (10%) by weight particle sizes greater than two (2) mm.

The liner specified in subsection (10)(B) of this rule shall be constructed in accordance with the approved design specifications.

(11) Groundwater Monitoring.

(A) Requirements. The owner/operator of a utility waste landfill shall implement a groundwater monitoring program capable of determining the utility waste landfill's impact on the quality of groundwater underlying the utility waste landfill.

(B) Satisfactory Compliance—Design.

1. All utility waste landfills permitted after the effective date of this rule, must be in compliance with all groundwater monitoring requirements of section (11).

2. The department may require utility waste landfills permitted prior to the effective date of this rule, to comply with part or all of section (11) if it is determined necessary by the department.

3. The owner/operator of a utility waste landfill shall establish the potential for migration of fluid generated by the utility waste landfill into the groundwater by an evaluation of—

A. A water balance of precipitation, evapotranspiration, runoff and infiltration;

B. At a minimum, the following characteristics:

(I) Geologic materials;

(II) Description of soil and bedrock to a depth adequate to allow evaluation of water quality protection provided by the soil and bedrock;

(III) Groundwater elevation;

(IV) Proposed separation between the lowest point of the lowest cell and the maximum water table elevation;

(V) Proximity of the utility waste landfill to water supply wells or surface water;

(VI) Rate and direction of groundwater flow; and

(VII) Current and projected use of water resources in the potential zone of influence of the utility waste landfill.

4. A groundwater monitoring system shall be capable of yielding groundwater samples for analysis and shall consist of—

A. Monitoring wells (at least one (1)) installed hydraulically upgradient; that is, in the direction of increasing static head from the utility waste landfill. The numbers, locations and depths shall be sufficient to yield groundwater samples that are—

(I) Representative of background water quality in the groundwater near the utility waste landfill; and

(II) Not affected by the utility waste landfill; and

B. Monitoring wells (at least three (3)) installed hydraulically down gradient; that is, in the direction of decreasing hydraulic head from the utility waste landfill. The number, locations and depths shall ensure that they detect any significant amounts of fluids generated by the utility waste landfill that migrate from the utility waste landfill to the groundwater. Monitoring wells, or clusters of monitoring wells, shall be capable at a minimum, of monitoring all saturated zones down to and including the uppermost aquifer.

5. All monitoring wells shall be constructed as per 10 CSR 23-4.

(C) Satisfactory Compliance—Operations.

1. Groundwater monitoring wells.

A. Groundwater monitoring wells shall be installed so that the number, spacing and depths of monitoring systems shall be determined based upon site-specific technical information that shall include thorough characterization of:

(I) Aquifer thickness, groundwater flow rate, groundwater flow direction including seasonal and temporal fluctuations in groundwater flow; and

(II) Saturated and unsaturated geologic units and fill materials overlying the uppermost aquifer, materials comprising the uppermost aquifer, and materials comprising the confining unit defining the lower boundary of the uppermost aquifer; including, but not limited to, thicknesses, stratigraphy, lithology, hydraulic conductivities and porosities.

B. The design and installation of groundwater monitoring well systems shall be observed, supervised, and certified by a qualified groundwater scientist and approved by the department.

C. All groundwater monitoring wells shall be operational prior to the acceptance of wastes, unless other arrangements are approved by the department.

D. The design, installation, development, and decommissioning of monitoring wells and piezometers must be performed in accordance with 10 CSR 23-4.

2. Sampling and reporting.

A. Each groundwater monitoring program must include consistent sampling and analysis procedures that are designed to ensure monitoring results that provide an accurate representation of groundwater quality at the background and down gradient wells installed in compliance with subsection (11)(B). The owner/operator must submit the sampling and analysis program to the department for approval. The program must include procedures and techniques for—

(I) Monitoring well maintenance;

(II) Monitoring well redevelopment;

(III) Monitoring well depth measurement and hydraulic levels;

(IV) Monitoring well purging and sampling utilizing dedicated equipment;

(V) Equipment calibration;

(VI) Decontamination and field blanks;

(VII) Sample and duplicate sample collection;

(VIII) Sample preservation;

(IX) Sample labeling;

(X) Sample handling;

(XI) Field measurements;

((XII) Field documentation;

(XIII) Chain of custody control;

(XIV) Sample shipment;

(XV) Analytical procedures;

(XVI) Qa/qc control—field and laboratory; and

(XVII) Statistical testing strategy per paragraph (11)(C)5. for each parameter's concentrations.

B. Each groundwater monitoring program shall include sampling and analytical methods that are appropriate for groundwater sampling and that accurately measure hazardous constituents and other monitoring parameters in groundwater samples. Analysis shall be performed on unfiltered samples.

C. The sampling procedures and frequency shall be protective of human health and the environment.

D. Groundwater elevations shall be measured in each well immediately prior to purging, each time groundwater is sampled. The owner/operator shall determine the rate and direction of groundwater flow each time groundwater is sampled. Groundwater elevations in wells which monitor the same utility waste landfill shall be measured within a period of time short enough to avoid temporal variations in groundwater flow which could preclude accurate determination of groundwater flow rate and direction.

3. Baseline/background monitoring.

A. The owner/operator shall establish background groundwater quality for each of the monitoring parameters or constituents required under paragraph (11)(C)4. To establish background, a minimum of four (4) quarterly samples of statistically independent sample data shall be obtained and analyzed from all monitoring wells during a minimum of one (1) year following well installation.

B. The number of samples collected to establish background values for groundwater quality data shall satisfy the requirements of subsection (11)(C) and shall be consistent with the appropriate statistical procedures determined pursuant to paragraph (11)(C)5. The sampling procedures shall be those specified under paragraph (11)(C)4. for detection monitoring and paragraph (11)(C)6. for assessment monitoring.

4. Detection monitoring.

A. The owner/operator shall obtain and analyze water samples from the groundwater monitoring wells during the months of May and November of each calendar year.

B. The following parameters shall be analyzed each time a sample is obtained:

Chemical Oxygen Demand (COD in milligrams per liter (mg/l));

Chlorides (Cl, mg/l);

Iron (Fe, (mg/l));

pH (units);

Specific Conductance (Conductivity at twenty-five degrees Celsius (25°C) (µmho/cm));

Total Dissolved Solids (TDS, in mg/l);

All parameters listed in Appendix I of this rule; and

Additionally, the water level in each well shall be measured at the time the sample is taken.

C. The sample results, and any results of statistical analysis determining statistically significant increases for any parameter per paragraph (11)(C)5., shall be submitted to the department in one (1) report within ninety (90) days of when samples are collected.

D. In the case of all detection monitoring requirements previously listed, the department may specify an appropriate alternative frequency for repeated sampling and analysis during the active life of the utility waste landfill (including closure) and the post-closure period. The department may add additional parameters or delete parameters on a site-by-site basis through an evaluation of waste and leachate characteristics of the utility waste landfill.

E. The electronic submission of groundwater data is required. This submission shall be in the format and method as prescribed by the department.

5. The owner/operator shall specify in the operating record one (1) or more of the following statistical methods to be used in evaluating groundwater monitoring data for each monitoring constituent. The statistical test chosen shall be conducted separately for each constituent—

A. A parametric analysis of variance (ANOVA) followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The procedure shall include estimation and testing of the contrasts between each down gradient well's mean and the upgradient means for each parameter;

B. An ANOVA based on ranks followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The procedure shall include estimation and testing of the contrasts between each down gradient well's median and the background medians for each parameter;

C. A confidence interval procedure in which an interval for each parameter in each down gradient well is constructed around the mean/median of the particular well's data or data residuals and compared to the mean/median of pooled background well data;

D. A prediction interval procedure in which an upper prediction limit for an interval for each parameter in each well is compared to subsequently obtained values from the same well;

E. A prediction interval procedure in which an upper prediction limit for an interval for each parameter constructed on the pooled background well data or data residuals is compared to subsequently obtained values from each down gradient well;

F. A tolerance interval procedure in which an upper tolerance limit for an interval for each parameter's pooled background well data is compared to each down gradient well's concentration values;

G. A multicomparison procedure utilizing any recommended U.S. Environmental Protection Agency combinations of intra-well and inter-well procedures for each parameter;

A control chart approach meeting the performance standards of part (11)(C)5.J.(III), that gives control limits for each parameter;

I. A different statistical test method that meets the performance standards of subparagraph (11)(C)5.J. of the rule. The owner/operator must submit the statistical test method to the department for approval before the use of the alternative test; and

J. Any statistical method chosen under paragraph (11)(C)5. of this rule shall comply with the following performance standards, as appropriate:

(I) The statistical method used to evaluate groundwater monitoring data shall be appropriate for the distribution of the concentration data for the chemical parameters or hazardous constituents. If the distribution of the concentration data for the chemical parameters or hazardous constituents is shown by the owner/operator to be inappropriate for a normal data distribution theory test, then the data should be transformed or a distribution-free (nonparametric) theory test should be used. If the concentration data distributions for the constituents of each well differ, more than one (1) statistical method will be needed;

(II) If an individual well comparison procedure is used to compare an individual compliance well constituent concentration with background constituent concentration or a groundwater protection standard, the test shall be done at a Type I error level no less than 0.01 for each testing period. If a multiple comparisons procedure is used, the Type I experiment-wide error rate for each testing period shall be no less than 0.05, however, the Type I error of no less than 0.01 for individual well comparisons shall be maintained. This performance standard does not apply to tolerance intervals, prediction intervals or control charts;

(III) If a control chart approach is used to evaluate groundwater monitoring data, the specific type of control chart and its associated parameter values shall be protective of human health and the environment. The selection of this method shall be determined after considering the number of

samples in the background data base, the data distribution, and the range of the concentration values for each constituent of concern;

(IV) If a confidence interval, tolerance interval or a prediction interval is used to evaluate groundwater monitoring data, then the level of confidence for each interval, and the percentage of the population that each interval contains, shall be protective of human health and the environment. Selection of one (1) or more of these methods shall be determined after considering the number of samples in the background data base, the data distribution, and the range of the concentration values for each constituent of concern;

(V) The statistical method shall account for data below the limit of detection with one (1) or more statistical procedures that are protective of human health and the environment. Any practical quantization limit that is used in the statistical method shall be the lowest concentration level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions that are available to the facility; and

(VI) If necessary, the statistical method shall include procedures to control or correct for seasonal and spatial variability as well as temporal correlation in the data.

6. Response to statistical analysis.

A. If the comparison for the upgradient wells shows a statistically significant increase (or pH change) over background, the owner/operator shall submit this information to the department.

B. If the comparisons for down gradient wells show a statistically significant increase (or pH change), resulting from the landfill, over background, the owner/operator shall within ninety (90) days of the last sampling event obtain additional groundwater samples from those down gradient wells where a statistically significant difference was detected, split the samples in two (2), and obtain analyses of all additional samples to determine whether the significant statistical difference was a result of laboratory error.

C. If the additional samples show a statistically significant increase (or pH change) over background, the owner/operator must demonstrate to the department within ninety (90) days that a source other than the utility waste landfill caused the contamination or that the statistically significant increase resulted from an error in sampling, analysis, statistical evaluation or natural variation. If the owner/operator cannot make this demonstration to the department, the owner/operator shall submit a plan to the department for a groundwater assessment monitoring program and implement the program as described in subparagraphs (11)(C)6.D. through H. of this rule. The plan shall specify the following:

(I) The number, location and depth of wells;

(II) Sampling and analytical methods for the monitoring parameters listed in Appendix I of this rule on a quarterly basis;

(III) Evaluation procedures, including any use of previously gathered groundwater quality information;

(IV) The rate and extent of migration of the contaminant plume in the groundwater; and

(V) The concentrations of the contaminant plume in the groundwater.

D. After obtaining the results from the initial or subsequent sampling events required in subparagraph (9)(C)6.D. the owner/operator shall—

(I) Within fourteen (14) days, notify the department and place a notice in the operating record identifying the constituents that have been detected;

(II) Within ninety (90) days, and on a quarterly basis after that, resample all wells and conduct analysis for all constituents listed in Appendix I to this rule and notify the department of the constituent concentrations. A minimum of one (1) sample from each well sampled (background and down gradient) shall be collected and analyzed during these sampling events;

(III) Establish background concentrations for any new constituents detected during subsequent monitoring events; and

(IV) Establish groundwater protection standards for all new constituents detected during subsequent monitoring events.

E. If the concentrations of all constituents listed in Appendix I to this rule are shown to be at or below background levels as established in paragraph (11)(C)3. of this rule for two (2) consecutive sampling periods, the owner/operator may reinstate detection monitoring at the utility waste landfill as specified under subparagraph (11)(C)3.C. of this rule.

F. If the concentrations of any constituents listed in Appendix I of this rule are above background values, but all concentrations are below the groundwater protection standard established under subparagraph (11)(C)6.D. of this rule using the statistical procedures in paragraph (11)(C)5. of this rule, the owner/operator shall notify the department and the department may require the owner/operator to—

(I) Continue assessment monitoring; or

(II) Develop a corrective measures assessment, or both.

G. If one (1) or more constituents listed in Appendix I of this rule are detected at levels above the groundwater protection standard as established under subparagraph (11)(C)6.D., the owner/operator shall—

(I) Provide the department with a report assessing potential corrective measures;

(II) Characterize the nature and extent of the release by installing additional monitoring wells as necessary; install at least one (1) additional monitoring well at the facility boundary in the direction of contaminant migration and sample this well in accordance with paragraph (11)(C)6. of this rule and, if required by the department, notify all persons who own the land or reside on the land that directly overlies any part of the plume of contamination if contaminants have migrated off-site if indicated by sampling of wells; and

(III) Continue assessment monitoring as per the groundwater quality assessment plan, and implement the approved corrective action program specified in part (11)(C)6.G.(I) of this rule.

H. The results of implementation of the assessment monitoring program shall be submitted to the department at the end of each year or an alternate time period approved by the department.

(12) Air Quality.

(A) Requirement. The design, construction and operation of the utility waste landfill shall minimize environmental hazards and shall conform to applicable ambient air quality and source control regulations.

(B) Satisfactory Compliance—Design. Plans shall include an effective dust control program.

(C) Satisfactory Compliance—Operations. A burning permit or exemption may be obtained from the department permitting the burning of tree trunks, tree limbs, and vegetation during clearing and grubbing. In areas operating under exemption certificates authorized by Chapter 643, RSMo approval shall be obtained from the local pollution control agency. The operating procedures and location for burning practices shall be submitted to the department for review and written approval. Burning at the utility waste landfill shall be conducted in accordance with Chapter 643, RSMo,

the corresponding rules, the terms, conditions, or both, of the plans, permit, or both, and all local requirements.

(13) Aesthetics.

(A) Requirement. The utility waste landfill shall be designed and operated at all times in an aesthetically acceptable manner.

(B) Satisfactory Compliance—Design. Plans shall include an effective vegetative growth program.

(C) Satisfactory Compliance—Operations.

1. Wastes that are easily moved by wind shall be covered, as necessary, to prevent becoming airborne and scattered.

2. On-site vegetation should be cleared only as necessary. Natural windbreaks, such as green belts, should be maintained where they will improve the appearance and operation of the utility waste landfill.

3. Mining operations for the purpose of removing waste for beneficial reuse shall be conducted in such a manner as to not detract from the appearance of the utility waste landfill. Materials removed from the utility waste landfill shall be stored for not more than sixty (60) days prior to beneficial reuse. Materials removed from the utility waste landfill shall be stored so as to prevent infiltration, surface water runoff and erosion from these removed materials. All Water Pollution Control Program permits and approvals necessary to comply with the Missouri Clean Water Law and corresponding rules shall be obtained from the department.

(14) Cover.

(A) Requirement. Cover shall be applied to minimize infiltration of precipitation, airborne waste; and provide a pleasing appearance.

(B) Satisfactory Compliance—Design. The owner/operator shall prepare a written closure plan that describes the steps necessary to close all utility waste landfill phases at any point during the active life of the utility waste landfill in accordance with the requirements of 10 CSR 80-2.030(4)(A). In addition, the final cover requirements specified in the closure and post-closure plans shall specify—

1. Cover sources, quantities and soil classification (Unified Soil Classification System or United States Department of Agriculture classification system);

2. The capability of the cover to perform the functions listed in subsection (14)(A) of this rule;

3. Surface grades and side slopes needed to promote maximum runoff, without excessive erosion, and to minimize infiltration. Final side slopes shall not exceed twenty-five percent (25%) unless it has been demonstrated in a detailed slope stability analysis approved by the department that the slopes can be constructed and maintained throughout the entire operational life and post-closure period of the landfill;

4. Procedures to establish and maintain vegetative growth to combat erosion and improve appearance of idle and completed areas. Procedures shall include seeding rate, fertilizer rate, soil conditioning rate and provisions for mulching;

5. Procedures to maintain a cover integrity, for example, regrading and recovering;

6. Methods for borrow areas to be reclaimed so as to restore aesthetic qualities and prevent excessive erosion;

7. The final slope of the top of the utility waste landfill shall have a minimum slope of one percent (1%); and

8. Shear failure analyses shall be included where intermediate or final slopes exceed twenty-five percent (25%). However, the department will waive the analyses for the slopes of twenty-five percent (25%) or less except in seismic impact zones.

(C) Satisfactory Compliance—Operations.

1. Cover shall be applied at a total thickness of at least one foot (1') of compacted soil on filled areas of the utility waste landfill which are idle for more than sixty (60) days, and on all final side slopes at the end of each filling sequence.

2. No active, intermediate or final slope shall exceed thirty-three and one-third percent (33 1/3%).

3. As each phase of the utility waste landfill is completed, a final cover system shall be installed consisting of one foot (1') of compacted clay with a coefficient of permeability of 1 x 10-5 cm/sec or less and overlaid with one foot (1') of soil capable of sustaining vegetative growth.

4. The installation of the final cover systems shall include provisions for slope stability.

5. The department may approve the use of an alternative final cover system provided that the owner/operator can demonstrate to the department that the alternative design will be at least equivalent to the final cover system described in paragraph (14)(C)3. of this rule.

6. Surface grades and side slopes shall be maintained to promote runoff without excessive erosion.

7. Vegetation shall be established within one hundred eighty (180) days of application of the cover required by paragraphs (14)(C)3. and 4. of this rule. Vegetation shall be established and maintained to minimize erosion and surface water infiltration.

8. Regrading and recovering shall be performed as necessary to maintain cover slope and integrity.

9. Borrow areas shall be reclaimed in accordance with the approved plans.

10. The compacted clay portion of the final cover shall consist of soils classified under the Unified Soil Classification System as CH, CL, ML, SC or MH.

(15) Compaction.

(A) Requirement. In order to conserve utility waste landfill site capacity, thereby preserving land resources and to minimize moisture infiltration and settlement, waste and cover shall be compacted to the smallest practicable volume.

(B) Satisfactory Compliance—Design.

1. Arrangements shall be made and indicated in the plans where substitute equipment will be available to provide uninterrupted service during routine maintenance periods or equipment breakdowns.

2. The plans shall specify the equipment that should be available to conduct the utility waste landfill operation.

(C) Satisfactory Compliance—Operations.

1. Waste handling equipment, during filling operations, shall be capable of performing and shall perform the following functions:

A. Spread the wastes to be compacted in layers no more than two feet (2') thick, while confining it to the smallest practicable area;

B. Compact the spread wastes to the smallest practicable volume; and

C. Place, spread and compact the final cover as much as practicable.

2. A preventive maintenance program should be employed to maintain equipment in operating order.

3. No waste shall be disposed of in water where the presence of the water will prohibit the proper spreading and compaction of the waste or where a mosquito breeding problem would be created.

(16) Safety.

(A) Requirement. The utility waste landfill shall be designed, constructed and operated in a manner so as to

protect the health and safety of personnel and others associated with and affected by the operation.

(B) Satisfactory Compliance—Design.

1. Provisions shall be included in the plans to control and limit access to the utility waste landfill in a manner that is compatible with the surrounding land use.

2. Provisions shall be included in the plans to control dust for safety purposes and to prevent a nuisance to the surrounding area.

(C) Satisfactory Compliance—Operation.

1. Adequate communications equipment shall be available at the utility waste landfill for emergency situations.

2. Access to the utility waste landfill shall be controlled and shall be by established roadways only. The utility waste landfill shall be accessible only when operating personnel are on duty.

3. Traffic signs or markers should be provided to promote an orderly traffic pattern to and from the discharge area and, if necessary, to maintain efficient operating conditions.

4. Dust control provisions shall be utilized as necessary for safety purposes and to prevent a nuisance to the surrounding area.

(17) Records.

(A) Requirement. The owner/operator of a utility waste landfill shall maintain records and monitoring data as specified by the department and file appropriate documents with the county recorder(s) of deeds.

(B) Satisfactory Compliance—Design. Plans shall prescribe methods to be used in maintaining records and monitoring the environmental impact of the utility waste landfill. Information on recording and monitoring requirements may be obtained from the department.

(C) Satisfactory Compliance—Operations.

1. Records shall be maintained at the facility site. Records five (5) years old or older may be stored at an alternate site if approved by the department; such stored records must be made available at the landfill upon request of department personnel. Records must cover at least the following:

A. Major operational problems, complaints or difficulties;

B. Any demonstration, certification, finding, monitoring, testing or analytical data required under sections (4) and (9) of this rule;

C. Dust and litter control efforts;

D. Quantitative measurements of the waste handled and an estimate of the air space left at the facility. Every two (2) years after the date of the permit issuance and within sixty (60) days of the anniversary date of the permit issuance, the owner/operator shall submit to the department two (2) copies of a topographic map, prepared under the direction of a land surveyor or by aerial photography, showing the current horizontal and vertical boundaries of waste in the utility waste landfill and the boundaries of the utility waste landfill. Maps prepared by aerial photography shall meet the current National Map Accuracy Standards for Photogrammetry as indicated in United States Bureau of the Budget "Circular A-16 Exhibit C," dated October 10, 1958;

E. Closure and post-closure care plans and any monitoring, testing or analytical data as required under 10 CSR 80-2.030(4)(A);

F. Any cost estimates and financial assurance documentation required under 10 CSR 80-2.030(4);

G. Inspection records and training procedures as required under subsection (3)(B) of this rule;

H. Records associated with corrective measures as required under section (10) of this rule; and

I. The landfill operator shall keep a detailed report of the origin of all waste received. Effective January 1, 1998, on or before January 31 of each calendar year and annually thereafter each utility waste landfill shall submit a report to the department specifying the amount of utility waste received for disposal from states other than Missouri.

2. Upon closing of the utility waste landfill, the existence of the utility waste landfill shall be recorded with the recorder(s) of deeds in the county(ies) where the utility waste landfill is located. The owner/operator may request permission from the department to remove the notation from the deed if all wastes are removed from the facility.

A. A survey and plat meeting the requirements of the current Minimum Standards of Property Boundary Survey 10 CSR 30-2.010 and detailed description of the utility waste landfill shall be prepared by a land surveyor. The survey plat and detailed description, at a minimum, shall contain the following information:

(I) The name of the property owner as it appears on the property deed;

(II) The detailed description of the property;

(III) The general types and location of the wastes and the depth(s) of fill within the property; and

(IV) The location of any leachate control or water monitoring systems which shall be maintained after closure and the length of time that these systems are to be maintained.

B. The owner/operator shall obtain approval from the department of the survey plat and detailed description prior to filing with the county recorder of deeds. Filing the plat and detailed description shall be accomplished within thirty (30) days of departmental approval. Two (2) copies of the properly recorded plat and detailed description showing the recorder of deeds' seal or stamp, the book and page numbers and the date of filing shall be submitted to the department within thirty (30) days of filing.

C. Owners of all proposed utility waste landfills as a part of closure of the solid waste disposal area shall—

(I) Execute an easement with the department, which allows the department, its agents or its contractors to enter the premises to complete work specified in the closure plan; and

(II) Submit evidence to the department that a notice and covenant running with the land has been recorded with the recorder of deeds in the county where the utility waste landfill is located. The notice and covenant shall specify the following:

(a) That the property has been permitted as a utility waste landfill; and

(b) That use of the land in any manner which interferes with closure plans, and post-closure plans filed with the department, is prohibited.

Appendix I—Constituents for Detection Monitoring

Arsenic (As, µg/l)
Aluminum (Al, µg/l)
Antimony (Sb, µg/l)
Barium (Ba, µg/l)
Beryllium (Be, mg/l)
Boron (B, µg/l)
Cadmium (Cd, µg/l)
Calcium (Ca, mg/l)
Chemical Oxygen Demand (COD,mg/l)
Chloride (Cl, mg/l)
Chromium (Cr, µg/l)
Cobalt (Co, µg/l)

Copper (Cu, µg/l)
Fluoride (Fl, µmg/l)
Hardness (calculated, mg/l)
Iron (Fe, µg/l)
Lead (Pb, µg/l)
Magnesium (Mg, mg/l)
Manganese (Mn, µg/l)
Mercury (Hg, µg/l)
Nickel (Ni, mg/l)
pH (units)
Selenium (Se, µg/l)
Silver (Ag, µg/l))
Sodium (Na, mg/l)
Specific Conductance (Conductivity at 25°C, mho/cm)
Sulfate (SO, mg/l)
Thallium (Tl, µg/l)
Total Dissolved Solids (TDS, mg/l)
Total Organic Carbon (TOC, mg/l)
Total Organic Halogens (TOX, mg/l)
Zinc (Zn, µg/l).]

PURPOSE: This rule pertains to the design, construction, and operation of utility waste and coal combustion residuals (CCR) landfills. The requirements of this rule ensure the operation of utility waste and CCR landfills have no adverse effects on human health or the environment.

PUBLISHER'S NOTE: The secretary of state has determined that the publication of the entire text of the material which is incorporated by reference as a portion of this rule would be unduly cumbersome or expensive. This material as incorporated by reference in this rule shall be maintained by the agency at its headquarters and shall be made available to the public for inspection and copying at no more than the actual cost of reproduction. This note applies only to the reference material. The entire text of the rule is printed here.

(1) General Provisions. This rule applies to new utility waste and CCR landfills and those existing landfills that did not certify and receive department approval of final closure prior to the effective date of this rule. Applicable provisions contained in 10 CSR 80-2 also apply. In the event of a conflict between 10 CSR 80-2 and this rule, this rule shall prevail.

(A) If standards or techniques other than those listed in this rule are used, it is the obligation of the utility waste or CCR landfill owner/operator to demonstrate to the department in advance that the standards or techniques to be employed will be at least as protective as the criteria in this rule. Procedures for the standards or techniques shall be submitted to the department in writing and approved by the department in writing prior to being employed. Notwithstanding any other provision of these rules, when it is found necessary, the department may require changes in design and/or operation as the condition warrants.

(B) Existing utility waste and CCR landfills that do not meet the performance standards of paragraph (4)(B)6., must cease placing CCR and submit closure plans per regulation 10 CSR 80-2.030 and sections (19) and (20) of this rule and initiate closure within six (6) months of the effective date of this rule. Closure schedules shall be approved by the department and shall include as part of the closure plan, site-specific information, factors, and considerations that would support any time extension requested. Until closure is achieved, these utility waste and CCR landfills shall continue to operate in compliance with this rule.

(C) The standards set forth in ASTM, ASTM method D422-63(2007), 2007, ASTM Test D2487-11, 2011, ASTM D-5084-16, 2016, ASTM D1140-17, 2017, and ASTM method D4318-17, 2017, as published by ASTM International, West Conshohocken, PA 19428, are incorporated by reference. This rule does not incorporate any subsequent amendments or additions.

(2) Solid Waste Accepted. Fly ash, bottom ash, boiler slag or other slag waste, and flue gas emission control waste generated primarily from the combustion of coal or other fossil fuels; coal residuals; clean fill; and department approved solidification additives used during closure of a utility waste or CCR landfill may be accepted.

(3) Sluicing. Sluicing of waste for transport to utility waste or CCR landfills shall be allowed only so long as the hydraulic head on top of the landfill liner can be maintained at less than one foot (1') of head, and the collected leachate and runoff meet the Missouri Clean Water Law and corresponding rules.

(4) Site Selection.

(A) Site selection and utilization shall include a study and evaluation of geologic and hydrologic conditions and soils at the proposed utility waste or CCR landfill and an evaluation of the environmental effect upon the projected use of the completed utility waste or CCR landfill. Applications for utility waste or CCR landfill construction permits received on or after the effective date of this rule shall document compliance with all applicable siting restriction requirements contained in paragraphs (4)(B)1. through 6.

(B) Location Restrictions.

1. The owner/operator of a proposed utility waste or CCR landfill, located in one hundred- (100-) year floodplains shall demonstrate to the department that the utility waste or CCR landfill will not restrict the flow of the one hundred- (100-) year flood, reduce the temporary water storage capacity of the floodplain, or result in release of waste or leachate so as to pose a hazard to public health or the environment.

2. Placement above the uppermost aquifer. Landfills permitted after October 19, 2015, including lateral expansions, must be constructed with a base that is located no less than one and fifty-two hundredths meters (1.52m) (five feet (5')) above the upper limit of the uppermost aquifer, or must demonstrate that there will not be an intermittent, recurring, or sustained hydraulic connection between any portion of the base of the utility waste or CCR landfill and the uppermost aquifer due to normal fluctuations in groundwater elevations (including the seasonal high water table).

3. Wetlands. Utility waste or CCR landfills shall not be located in wetlands, unless the owner/operator can make the following demonstrations to the department:

A. The presumption that a practicable alternative to the proposed landfill is available which does not involve wetlands is clearly rebutted;

B. The construction and operation of the utility waste or CCR landfill will not:

(I) Cause or contribute to violations of any applicable state water quality standard;

(II) Violate any applicable toxic effluent standard or prohibition under Section 307 of the federal Clean Water Act by the U.S. Environmental Protection Agency;

(III) Violate any requirement under the Marine Protection, Research, and Sanctuaries Act of 1972 for the protection of a marine sanctuary;

C. The utility waste or CCR landfill will not cause or contribute to significant degradation of wetlands. The owner/operator shall demonstrate the integrity of the utility waste or CCR landfill and its ability to protect ecological resources by addressing the following factors:

(I) Erosion, stability, and migration potential of native wetland soils, muds, and deposits used to support the landfill;

(II) Erosion, stability, and migration potential of

dredged and fill materials used to support the landfill;

(III) The volume and chemical nature of the waste disposed of in the landfill;

(IV) Impacts on fish, wildlife, and other aquatic resources and their habitat from potential release of waste from the landfill;

(V) The potential effects of contamination of the wetland and the resulting impacts on the environment; and

(VI) Any additional factors, as necessary, to demonstrate that ecological resources in the wetland are sufficiently protected;

D. Steps have been taken to attempt to achieve no net loss of wetlands (as defined by acreage and function) by first avoiding impacts to wetlands to the maximum extent practicable as required by subparagraph (4)(B)3.A., then minimizing unavoidable impacts to the maximum extent practicable, and finally offsetting remaining unavoidable wetland impacts through all appropriate and practicable compensatory mitigation actions (for example, restoration of existing degraded wetlands or creation of man-made wetlands); and

E. The requirements of paragraph (4)(B)3. may be satisfied by the owner/operator obtaining a United States Army Corps of Engineers permit for construction in a wetland or by demonstrating that the wetland is not regulated by the United States Army Corps of Engineers or other appropriate agency.

4. Fault areas. Utility waste or CCR landfills located in the seismic impact zone shall not be located within two hundred feet (200') of a fault that has had displacement in Holocene time unless that owner/operator demonstrates to the department that an alternative setback distance of less than two hundred feet (200') will prevent damage to the structural integrity of the landfill and will be protective of human health and the environment.

5. Seismic impact zones. Utility waste and CCR landfills must not be located in seismic impact zones unless the owner/operator demonstrates that all structural components including liners, leachate collection and removal systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site.

6. Unstable areas. The owner/operator of a utility waste or CCR landfills located in an unstable area shall demonstrate to the department that the utility waste or CCR landfill's design ensures that the integrity of the structural components of the utility waste or CCR landfill will not be disrupted. The owner/operator shall consider the following factors, at a minimum, when determining whether an area is unstable:

A. On-site or local rock or soil conditions that may result in failure or significant differential settling;

B. On-site or local geologic or geomorphologic features; and

C. On-site or local man-made features or events (both surface and subsurface).

7. Endangered species. Utility waste or CCR landfills shall not:

A. Cause or contribute to the taking of any endangered or threatened species of plants, fish, or wildlife listed in Section 4 of the Endangered Species Act; or

B. Result in the direct or indirect alteration of critical habitat which appreciably diminishes the likelihood of the survival and recovery of threatened or endangered species using that habitat of endangered or threatened species as identified in 50 CFR part 17.

8. Surface water. CCR landfills shall operate in accordance with the Missouri Clean Water Law, corresponding rules, and permits and shall not:

A. Cause a discharge of pollutants into waters of the United States that is in violation of the requirements of the National Pollutant Discharge Elimination System (NPDES) under Section 402 by the U.S. Environmental Protection Agency;

B. Cause a discharge of dredged material or fill material to waters of the United States that is in violation of the requirements under Section 404; and

C. Cause non-point source pollution of waters of the United States that violates applicable legal requirements implementing an area-wide or statewide water quality management plan that has been approved by the Administrator under Section 208.

9. An owner/operator of a CCR landfill may submit to the department for review and approval alternative location restrictions or requirements other than those listed in paragraphs (4)(B)4., 5., and 6. if the owner/operator establishes through technical analysis and an engineering demonstration that adverse effects are not reasonably probable given the design, construction, and/or operation of the utility waste or CCR landfill in such location.

(5) Plans for new utility waste or CCR landfills shall include:

(A) A map showing initial and proposed topographies at contour intervals of five feet (5') or less having a scale of not less than one inch (1") equal to one hundred feet (100'). If the entire site cannot be illustrated on one (1) plan sheet, additional plan sheets should be included with appropriate horizontal and vertical scales in addition to the full site map;

(B) A map having a scale of not less than one inch (1") equals four hundred feet (400') identifying the land use and zoning within one-fourth (1/4) mile of the utility waste or CCR landfill including location of all residences, buildings, wells, water courses, springs, lakes, rock outcroppings, caves, sinkholes, and soil or rock borings. All electric, gas, water, sewer, and other utility easements or lines that are located on, under, or over the utility waste or CCR landfill shall be shown on the map;

(C) A description of the projected use of the closed utility waste or CCR landfill. In addition to maintenance programs and provisions, where necessary for monitoring and controlling leachate, the plans shall specify appropriate design, construction, and operating provisions for the utility waste or CCR landfill to complement the projected future use;

(D) An evaluation of the characteristics and quantity of available on-site soil with respect to its suitability for utility waste or CCR landfilling operations. The engineering properties and quantity estimates of the on-site soil shall be discussed and shall include:

1. Texture. Sieve and hydrometer analyses shall be performed to determine grain size distribution of representative soil samples. Texture may be determined by using the procedures described in ASTM method D422-63(2007) (ASTM International, 100 Barr Harbor, West Conshohocken, PA 19428 Publication date 2007);

2. Plasticity. The liquid limit, plastic limit and plasticity index of representative soil samples shall be determined. Plasticity may be determined by using the procedures described in ASTM method D4318-17 (ASTM International 100 Barr Harbor, West Conshohocken, PA 19428, Publication date 2017);

3. Hydraulic conductivity. Laboratory hydraulic conductivity tests shall be performed upon undisturbed representative soil samples using a flexible wall permeameter (ASTM D-5084-16 ASTM International, 100 Barr Harbor, West Conshohocken, PA 19428 Publication date 2016). If an aquifer is found to be laterally continuous across the anticipated limit of the proposed landfill, the hydraulic conductivity of each significant continuous geologic unit must be determined. Examples of accepted field tests are in situ slug or pump tests, which isolate the geologic unit of interest; and

4. Areal extent and depth. The areal extent and depth of soil suitable for landfill construction shall be determined, clearly describing variations in soil depth; and

(E) A demonstration by the owner/operator of a proposed utility waste or CCR landfill of how adverse geologic and hydrologic conditions may be altered or compensated for via surface water drainage diversion, underdrains, sumps, and other structural components. All alterations of the site shall be detailed in the plans. Precipitation, evapotranspiration and climatological conditions shall be considered in site selection and design.

(6) Design.

(A) Plans, addendums, as-built drawings, or other documents which describe the design, construction, operation, or closure of a utility waste or CCR landfill or which request a design modification for the utility waste or CCR landfill shall:

1. Be prepared, sealed, and signed by the professional engineer and submitted to the department for review and approval;

2. Contain a minimum of a one hundred foot- (100'-) buffer zone between the utility waste or CCR landfill operations and any property line(s) or any right(s)-of-way of adjoining road(s) when the property line(s) is inside the right(s)-of-way to provide for assessment and/or remedial actions;

3. Consider precipitation, evapotranspiration, and climatological conditions in site selection and design;

4. Include all computer models used in the design and list the limitations and assumptions of each model;

5. Include stability analyses for all stages of construction, as well as all liner and leachate system components, and on all final cover system components, include an evaluation of the effect of waste settlement on the final cover system components, side slope liner system components, and surface water management system components;

6. Perform settlement and bearing capacity analyses on the in-place foundation material beneath the disposal area;

7. Analyze the effect of foundation material settlement on the liner and leachate collection systems;

8. Analyze leachate collection pipe material and drainage media to demonstrate that these components possess structural strength to support maximum loads imposed by overlying waste materials and equipment; and

9. Include phase development drawings.

(B) Liner system requirement. A composite liner shall be required at all utility waste or CCR landfills applying for a construction permit after the effective date of this rule that includes:

1. A composite liner must consist of two (2) components: the upper component consisting of, at a minimum, a thirty- (30-) mil geomembrane liner (GM), and the lower component consisting of at least a two-foot (2') layer of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} centimeters per second (cm/sec). GM components consisting of high density polyethylene (HDPE) must be at least sixty- (60-) mil thick. The GM or upper liner component must be installed in direct and uniform contact with the compacted soil or lower liner component. The compacted soil liner component at a minimum shall be:

A. Constructed of six to eight inch (6 - 8") lifts;

B. Compacted to ninety-five percent (95%) of standard Proctor density with the moisture content between optimum moisture content and four percent (4%) above the optimum moisture content, or within other ranges of density and moisture such that are shown to provide for the liner to have a hydraulic conductivity no more than 1×10^{-7} cm/sec;

C. Protected from the adverse effects of desiccation or freeze/thaw cycles after construction, but prior to placement of waste;

D. Soils used for this purpose shall meet the following minimum specifications:

(I) Be classified under the Unified Soil Classification Systems as CL, CH, or SC (ASTM Test D2487-11 ASTM International, 100 Barr Harbor, West Conshohocken, PA 19428 Publication date 2011);

(II) Allow more than thirty percent (30%) passage through a No. 200 sieve (ASTM Test D1140-17 ASTM International, 100 Barr Harbor, West Conshohocken, PA 19428, Publication date 2017);

(III) Have a liquid limit equal to or greater than twenty (20) (ASTM Test D4318-17 ASTM International, 100 Barr Harbor, West Conshohocken, PA 19428 Publication date 2017);

(IV) Have a plasticity index equal to or greater than ten (10) (ASTM Test D4318-17 ASTM International, 100 Barr Harbor, West Conshohocken, PA 19428 Publication date 2017); and

(V) Have a minimum bottom slope in any direction of flow of at least one percent (1%); and

E. Constructed of materials that—

(I) Have appropriate chemical properties and sufficient strength and thickness to prevent failure due to: pressure gradients (including static head and external hydrogeologic forces), physical contact with the CCR or leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation;

(II) Provide appropriate shear resistance of the upper and lower component interface to prevent sliding of the upper component including on slopes;

(III) Are placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression, or uplift; and

(IV) Are installed to cover all surrounding earth likely to be in contact with the CCR or leachate;

2. A test pad shall be constructed at the site and tested to verify that the proposed soils, construction, and quality assurance/quality control (QA/QC) procedures are adequate to ensure that the soil component of the composite liner system will meet the requirements listed above.

A. Construction and QA/QC procedures to be used during test pad construction shall be described in detail in the approved engineering report, and shall be identical to those proposed for liner construction with the following additions:

(I) At least two (2) laboratory hydraulic conductivity tests shall be performed on undisturbed samples of the completed test pad;

(II) At least one (1) in-situ hydraulic conductivity test (i.e. Boutwell) shall be performed on the completed test pad; and

(III) At least two (2) test pits shall be excavated into the completed test pad to observe inter-lift bonding.

B. If test pad construction and testing shows that the proposed methods are not sufficient to meet the requirements of this rule, a new test pad shall be constructed using revised procedures approved by the department.

C. For phased construction, only one (1) test pad will be required for a particular soil source and type and equipment type.

D. A final report shall be submitted to the department, which describes in detail the construction and QA/QC procedures, which were used to achieve satisfactory test pad performance.

(I) The report must be approved by the department prior to beginning construction of any portion of the composite liner system in the disposal area.

(II) The report shall serve as guidance for construction of the soil component of the composite liner system.

E. The requirement for a test pad may be waived provided the applicant can demonstrate to the department's satisfaction the construction and QA/QC procedures are identical to those described in the approved engineering report and will result in construction of a liner which meets the requirements of this rule, and the soils proposed for liner construction meet the following minimum specifications:

(I) Have a plasticity index greater than fifteen (15) and less than thirty (30) (ASTM test D4318-17 ASTM International, 100 Barr Harbor, West Conshohocken, PA 19428 Publication date 2017);

(II) Allow more than fifty percent (50%) passage through a number two hundred (200) sieve (ASTM D1140-17 ASTM International, 100 Barr Harbor, West Conshohocken, PA 19428, Publication date 2017); and

(III) Have less than ten percent (10%) by weight particle sizes greater than two (2) millimeters.

(C) Alternative composite liners. If the owner/operator elects to install an alternative composite liner, all of the following requirements must be met:

1. An alternative composite liner must consist of two (2) components: the upper component consisting of, at a minimum, a thirty- (30-) mil GM, and a lower component, that is not a geomembrane, with a liquid flow rate no greater than the liquid flow rate of two feet (2') of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec. GM components consisting of HDPE must be at least sixty- (60-) mil thick. If the lower component of the alternative liner is compacted soil, the GM must be installed in direct and uniform contact with the compacted soil.

2. The owner/operator must obtain certification from a professional engineer that the liquid flow rate through the lower component of the alternative composite liner is no greater than the liquid flow rate through two feet (2') of compacted soil with a hydraulic conductivity of 1×10^{-7} cm/sec. The hydraulic conductivity for the two feet (2') of compacted soil used in the comparison shall be no greater than 1×10^{-7} cm/sec. The hydraulic conductivity of any alternative to the two feet (2') of compacted soil must be determined using recognized and generally accepted methods. The liquid flow rate comparison must be made using Equation 1 of this section, which is derived from Darcy's Law for gravity flow through porous media.

(Eq. 1) $$\frac{Q}{A} = q = k\left(\frac{h}{t} + 1\right)$$

Where—

Q = flow rate (cubic centimeters/second);

A = surface area of the liner (squared centimeters);

q = flow rate per unit area (cubic centimeters/second/squared centimeter);

k = hydraulic conductivity of the liner (centimeters/second);

h = hydraulic head above the liner (centimeters); and

t = thickness of the liner (centimeters); and

3. The alternative composite liner must meet the performance requirements specified in parts (6)(B)1.E.(I) through (IV).

(D) The leachate collection and removal system must be designed, constructed, operated, and maintained to collect and remove leachate from the utility waste or CCR landfill during the active life and post-closure care period. The leachate collection and removal system must be—

1. Designed and operated to maintain less than a thirty (30)-centimeter (one foot (1')) depth of leachate over the composite liner or alternative composite liner;

2. Constructed of materials that are chemically resistant to the CCR and any non-CCR waste managed in the utility waste or CCR landfill and the leachate expected to be generated, and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying waste, waste cover materials, and equipment used at the utility waste or CCR landfill;

3. Designed and operated to minimize clogging during the active life and post-closure care period;

4. Leachate flow quantities shall be estimated and the method(s) of leachate management shall be outlined in the application submittal;

5. Leachate storage facilities shall comply with all currently applicable requirements of the Missouri Clean Water Law and corresponding rules. Where a leachate treatment system is designed to have a discharge to the waters of the state, any required discharge permit(s) shall be obtained from the department in accordance with requirements of the Missouri Clean Water Law and corresponding rules; and

6. Minimum design criteria for leachate collection systems shall include the following:

A. Ponds and/or tanks of sufficient capacity to store, equalize flow to disposal systems, and allow system/operating flexibility;

B. Collection systems designed and operated so that any leachate formed will flow by gravity into collection areas from which the leachate can be removed, treated, and disposed;

C. Leachate management by recirculation within the permitted fill area shall be conducted in accordance with an approved engineering method;

D. Any leachate collection system open to the atmosphere must be designed to prevent discharge during a twenty-four- (24-) hour, twenty-five- (25-) year storm event. Plans shall include the calculations detailing the design; and

E. A method of leachate management in the application. A secondary or "backup" method of leachate disposal will be required unless the applicant can demonstrate that a secondary method will not be necessary.

(7) Quality Assurance/Quality Control (QA/QC). The construction, operation, and closure of the utility waste or CCR landfill shall include QA/QC measures to ensure compliance with approved plans and all applicable federal, state, and local requirements. The permittee shall be responsible for ensuring that the QA/QC supervision is conducted by a qualified professional.

(A) Plans shall include a detailed description of the QA/QC testing procedures that will be used for every major phase of construction. The description must include at a minimum, the frequency of inspections, field testing, laboratory testing, equipment to be utilized, the limits for test failure, a description of the procedures to be used upon test failure, and a detailed procedure for the reporting and recording of QA/QC activities and testing results.

(B) For the following components:

1. Leachate collection system. Reports shall be prepared or approved by the professional engineer transmitting the results of the QA/QC procedures and stating that the leachate collection system was constructed according to the approved design or describing any deviations from the approved design; and

2. Liner. The liner specified by section (6) shall be constructed in accordance with the approved design specifications. The QA/QC procedures shall include:

A. Evidence that the liner material(s) utilized meet the minimum design specifications;

B. Evidence that field construction techniques are resulting in the minimum design specifications (for example, soil density tests);

C. Evidence that the liner construction is proceeding as designed through regular verification using a predetermined system of horizontal and vertical survey controls; and

D. Oversight of the liner construction and QA/QC procedures by a professional engineer. This shall include reports prepared, or approved, by the professional engineer transmitting the results of the QA/QC procedures and stating that the liner was constructed according to design or describing any deviations from the design;

3. All QA/QC reports shall be reviewed and approved by a

professional engineer.

(C) At a minimum QA/QC testing shall include:

1. Testing of each lift of the soil component of the final cover and landfill liner for field density and field moisture once per every ten thousand square feet (10,000ft^2) and providing relatively uniform coverage over the landfill surface;

2. Laboratory hydraulic conductivity testing of the soil used for liner construction once for every five thousand cubic yards (5,000yd^3) of liner constructed;

3. Continuous visual classification of borrow soil during landfill construction by qualified QA/QC inspector(s) or certifying professional engineer;

4. Measuring the elevations of the final cover and the landfill liner on a maximum spacing of one hundred foot (100') centers and at one hundred foot (100') intervals along each line where a break in slope occurs.

A. Landfill liner. Measuring the elevations of the top and bottom of the landfill liner and leachate collection system.

B. Final cover. Measuring the elevations of the top and bottom of the landfill cover includes:

(I) The compacted clay layer; and

(II) The soil layer supporting vegetative growth;

5. For a geomembrane includes:

A. Nondestructive testing of all seams of the geomembrane in the landfill liner; and

B. Random destructive testing of the seams of the geomembrane liner in the landfill liner on an average frequency of at least one (1) every five hundred (500) linear feet of seams; and

6. All testing shall be performed under the direction of qualified QA/QC inspectors for every major phase of construction.

(8) Survey Control. Benchmarks, horizontal controls, and boundary markers shall be established and maintained by a registered land surveyor to check and mark the location and elevations of the utility waste or CCR landfill ensuring compliance with design plans, phasing plans, and applicable conditions within the approved construction permit. At a minimum, a survey of the entire permitted acreage shall be conducted in accordance with the current Missouri Standards for Property Boundary Surveys, 2 CSR 90-60, and identify the permanent monument used as a benchmark. All site information must be reported in the State Plane Coordinate System.

(9) Run-on and Run-off Controls. All Water Protection Program permits and approvals necessary to comply with requirements of the Missouri Clean Water Law and corresponding rules shall be obtained from the department.

(A) The owner/operator of an existing or new utility waste or CCR landfill or any lateral expansion must design, construct, operate, and maintain—

1. A run-on control system to prevent flow onto the active portion of the landfill during the peak discharge from a twenty-four- (24-) hour, twenty-five- (25-) year storm; and

2. On-site drainage, collection, and control structures and channels shall be designed for all stages of development to accommodate at a minimum the stormwater volume from a twenty-four- (24-) hour, twenty-five- (25-) year storm. The engineering calculations and assumptions shall be included and explained in the engineering report submitted to the department.

(B) The quantity of water coming in contact with solid waste shall be minimized by the daily operational practices. Water which comes in contact with the waste shall be managed as leachate in accordance with the approved plans. Stormwater runoff from the utility waste or CCR landfill shall be controlled on site and not be allowed to discharge off the utility waste or CCR landfill property or discharge into the waters of the state, except in accordance with the approved plans and the Missouri Clean Water Law and corresponding rules.

(10) Groundwater Monitoring.

(A) The owner/operator of a utility waste or CCR landfill shall implement a groundwater monitoring program capable of determining the impact on the quality of groundwater underlying the utility waste or CCR landfill. The downgradient monitoring system must be installed at the relevant point of compliance specified by the department. When physical obstacles preclude installation of groundwater monitoring wells at the relevant point of compliance, the downgradient monitoring system may be installed at the closest practicable distance hydraulically downgradient specified by the department that ensures detection of groundwater contamination in the uppermost aquifer.

1. All utility waste or CCR landfills permitted after the effective date of this rule must be in compliance with all groundwater monitoring requirements of this section.

2. All utility waste or CCR landfills permitted prior to the effective date of this rule, but not officially closed by the department as of October 19, 2015, must comply with this section.

3. The owner/operator of a utility waste or CCR landfill shall establish the potential for migration of fluid generated by the utility waste or CCR landfill into the groundwater by an evaluation of—

A. A water balance of precipitation, evapotranspiration, runoff, and infiltration; and

B. At a minimum, the following characteristics:

(I) Geologic materials;

(II) Description of soil and bedrock to a depth adequate to allow evaluation of water quality protection provided by the soil and bedrock;

(III) Groundwater elevation;

(IV) Proposed separation between the lowest point of the lowest cell and the maximum water table elevation;

(V) Proximity of the utility waste or CCR landfill to water supply wells or surface water;

(VI) Rate and direction of groundwater flow; and

(VI) Current and projected use of water resources in the potential zone of influence of the utility waste or CCR landfill.

4. Groundwater monitoring wells shall be installed based upon site-specific technical information that considers the following when determining the number, spacing, and depths of monitoring systems:

A. Aquifer thickness, groundwater flow rate, groundwater flow direction including seasonal and temporal fluctuations in groundwater flow; and

B. Saturated and unsaturated geologic units and fill materials overlying the uppermost aquifer materials comprising the uppermost aquifer, and materials comprising the confining unit defining the lower boundary of the uppermost aquifer; including, but not limited to, thicknesses, stratigraphy, lithology, hydraulic conductivities, and porosities.

5. Groundwater monitoring well locations shall be based on site-specific technical information and be capable of yielding groundwater samples for analysis, effectively monitor the site, and shall consist of at least one (1) well installed hydraulically upgradient; that is, in the direction of increasing static head from the utility waste or CCR landfill and at least three (3) wells installed hydraulically downgradient; that is, in the direction of decreasing hydraulic head. The numbers, locations, and depths shall be based on site-specific technical information and be sufficient to yield groundwater samples that—

A. Represents background water quality in the groundwater upgradient of the utility waste or CCR landfill;

B. Detect any significant amounts of fluids generated by the utility waste or CCR landfill that migrate from the utility waste or CCR landfill to the groundwater; and

C. Monitor all saturated zones down to and including the uppermost aquifer.

6. All monitoring wells shall be—

A. Designed, constructed, developed, and decommissioned in accordance with 10 CSR 23-4;

B. Designed and installed under the observation and supervision of a qualified groundwater scientist, who certifies installation, and then approved by the department; and

C. Operational prior to the acceptance of wastes, unless other arrangements are approved by the department.

(B) Sampling and Reporting.

1. Each groundwater monitoring program must include consistent sampling and analysis procedures that are designed to ensure monitoring results that provide an accurate representation of groundwater quality at monitoring wells installed in compliance with this section. The owner/operator must submit the sampling and analysis program to the department for approval. The program must include procedures and techniques for:

A. Monitoring well maintenance;

B. Monitoring well redevelopment;

C. Monitoring well depth measurement and hydraulic levels;

D. Monitoring well purging and sampling utilizing dedicated equipment;

E. Equipment calibration;

F. Decontamination and field blanks;

G. Sample collection;

H. Sample preservation;

I. Sample labeling;

J. Sample handling;

K. Field measurements;

L. Field documentation;

M. Chain of custody control;

N. Sample shipment;

O. Analytical procedures;

P. QA/QC control—field and laboratory; and

Q. Statistical testing strategy for each parameter's concentrations.

2. Each groundwater monitoring program shall include sampling and analytical methods that are appropriate for groundwater sampling and that accurately measure hazardous constituents and other monitoring parameters in groundwater samples. Analysis shall be performed on unfiltered samples.

3. The owner/operator shall determine the rate and direction of groundwater flow each time groundwater is sampled. Groundwater elevations in wells that monitor the same utility waste or CCR landfill shall be measured within a period of time short enough to avoid temporal variations in groundwater flow, which could preclude an accurate determination of groundwater flow rate and direction.

4. Each groundwater monitoring program shall include: a map, aerial image, or diagram showing the utility waste or CCR landfill and all background (or upgradient) and downgradient monitoring wells, to include the well identification numbers that are part of the groundwater monitoring program for the utility waste or CCR landfill.

5. Suspension of groundwater monitoring requirements.

A. The department may suspend or modify in whole or in part for up to ten (10) years the groundwater monitoring requirements for a utility waste or CCR landfill if the owner/operator provides written documentation that there is no potential for risk to human health or the environment or migration of the constituents listed in Appendices I and II of this rule during the active life of the utility waste or CCR landfill and the post-closure care period. In making this decision to suspend groundwater monitoring requirements in whole or in part and in making remedial decisions, the department may consider the impact of activity and use limitations that have been placed on the property and any affected off-site area. This demonstration must be certified by a qualified professional engineer and approved by the department, and must be based upon:

(I) Site-specific field collected measurements, sampling, and analysis of physical, chemical, and biological processes affecting contaminant fate and transport; and

(II) Contaminant fate and transport predictions that maximize contaminant migration and consider impacts on potential receptors.

(C) Background Monitoring. The owner/operator shall establish background groundwater quality for each of the monitoring parameters or constituents required in Appendix I and Appendix II. To establish background, a minimum of eight (8) samples of statistically independent sample data shall be obtained and analyzed from all monitoring wells. Additional background samples may be required based upon the statistical methodology used.

(D) Detection Monitoring.

1. The owner/operator shall obtain and analyze water samples from the groundwater monitoring wells during the months of May and November of each calendar year for Appendix I constituents unless an alternative schedule is approved by the department.

2. The water level in each well shall be measured at the time the sample is taken.

3. The sample results must be submitted electronically in a format specified by the department, and any results of statistical analysis determining statistically significant increases (SSI) for any parameter shall be submitted to the department in one (1) report within ninety (90) days of when samples are collected, unless the department approves an alternative schedule.

4. In the case of all detection monitoring requirements previously listed, the department may specify an appropriate alternative frequency for repeated sampling and analysis during the active life of the utility waste or CCR landfill including during the closure and post-closure periods. The alternative frequency during the active life including closure shall be no less than annual. The alternative frequency shall be based on consideration of the following factors:

A. Lithology of the aquifer and unsaturated zone;

B. Hydraulic conductivity of the aquifer and unsaturated zone;

C. Groundwater flow rates;

D. Minimum distance between the upgradient edge of the CCR surface impoundment and the downgradient monitoring well screen (minimum distance of travel); and

E. Resource value of the aquifer.

5. If the owner/operator determines, pursuant to subsection (10)(E), that there is a SSI over background for one or more of the constituents listed in Appendix I, the owner/operator:

A. Must, within fourteen (14) days of this finding, notify the department indicating which constituents have shown statistically significant changes from background levels; and

B. Must establish an assessment monitoring program meeting the requirements of subsection (10)(F) within ninety (90) days except as provided for in paragraph (10)(D)6.

6. The owner/operator may demonstrate that a source other than the CCR surface impoundment caused the contamination or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. A report documenting this demonstration must be certified by a qualified groundwater scientist and submitted to the department for review and approval. If a successful demonstration is made and documented, the owner/operator may continue detection monitoring as specified in this subsection. If, after ninety (90) days, a successful demonstration is not made, the owner/operator must initiate an assessment monitoring program as specified in subsection (10)(F).

(E) Statistical Method. The owner/operator shall specify one

(1) or more statistical method(s) to be used in evaluating groundwater monitoring data for each monitoring constituent.

1. The statistical method used to evaluate groundwater monitoring data shall be appropriate for the distribution of the concentration data for the chemical parameters or hazardous constituents and approved by the department. If the distribution of the concentration data for the chemical parameters or hazardous constituents is shown by the owner/operator to be inappropriate for a normal data distribution theory test, then the data should be transformed or a distribution-free (nonparametric) theory test should be used. If the concentration data distributions for the constituents of each well differ, more than one (1) statistical method will be needed.

2. If an individual well comparison procedure is used to compare an individual compliance well constituent concentration with background constituent concentration or a groundwater protection standard, as defined below in paragraph (10)(F)7., the test shall be done at a Type I error rate no less than 0.01 for each testing period. If a multiple comparisons procedure is used, the Type I experiment-wide error rate for each testing period shall be no less than 0.05, however, the Type I error rate of no less than 0.01 for individual well comparisons shall be maintained. This performance standard does not apply to tolerance intervals, prediction intervals, or control charts.

3. If a control chart approach is used to evaluate groundwater monitoring data, the specific type of control chart and its associated parameter values shall be protective of human health and the environment. The selection of this method shall be determined after considering the number of samples in the background database, the data distribution, and the range of the concentration values for each constituent of concern.

4. If a confidence interval, tolerance interval, or a prediction interval is used to evaluate groundwater monitoring data, then the level of confidence for each interval, and the percentage of the population that each interval contains, shall be protective of human health and the environment. Selection of one (1) or more of these methods shall be determined after considering the number of samples in the background database, the data distribution, and the range of the concentration values for each constituent of concern.

5. The statistical method shall account for data below the limit of detection with one (1) or more statistical procedures that are protective of human health and the environment. Any practical quantization limit that is used in the statistical method shall be the lowest concentration level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions that are available to the facility.

6. If necessary, the statistical method shall include procedures to control or correct for seasonal and spatial variability as well as temporal correlation in the data.

(F) Response to statistical analysis/assessment monitoring.

1. Assessment monitoring is required whenever a SSI over background levels has been detected for one (1) or more of the constituents listed in Appendix I.

2. Within ninety (90) days of triggering an assessment monitoring program, and annually thereafter, the owner/operator of the utility waste or CCR landfill must sample and analyze the groundwater for all constituents listed in Appendix II of this rule. The number of samples collected and analyzed for each well during each sampling event must be consistent with subsection (10)(B), and must account for any unique characteristics of the site, but must include at least one (1) sample from each well.

3. The owner/operator of a utility waste or CCR landfill may submit to the department for review and approval, a demonstration for an alternative monitoring frequency for repeated sampling and analysis for constituents listed in Appendix II during the active life and the post-closure care period based on the availability of groundwater. If there is not adequate groundwater flow to sample wells semiannually, the alternative frequency shall be no less than annual. The need to vary monitoring frequency must be evaluated on a site-specific basis. The demonstration must be supported by, at a minimum, the following information:

A. Information documenting the need for less frequent sampling. The alternative frequency must be based on consideration of the following factors:

(I) Lithology of the aquifer and unsaturated zone;

(II) Hydraulic conductivity of the aquifer and unsaturated zone; and

(III) Groundwater flow rates;

B. Information documenting that the alternative frequency will be no less effective in ensuring that any leakage from the utility waste or CCR landfill will be discovered within a timeframe that will not materially delay the initiation of any necessary remediation measures; and

C. The owner/operator must obtain a certification from a professional engineer and submit it to the department for review and approval, stating that the demonstration for an alternative groundwater sampling and analysis frequency meets the requirements of this section. The owner/operator must include the demonstration providing the basis for the alternative monitoring frequency and the certification by a professional engineer in the annual groundwater monitoring and corrective action report required by section (10).

4. After obtaining the results from the initial and subsequent sampling events required in paragraph (10)(F)2., the owner/operator must:

A. Within ninety (90) days of obtaining the results, and on at least a semiannual basis thereafter, resample all wells that were installed pursuant to the requirements of section (10), conduct analyses for all constituents in Appendix I and for those constituents in Appendix II that are detected in response to subparagraph (10)(F)4.B., submit the sampling and analysis to the department for review and approval and record their concentrations in the facility operating record. The number of samples collected and analyzed for each background well and downgradient well during subsequent semiannual sampling events must be consistent with subsection (10)(D), and must account for any unique characteristics of the site, but must be at least one (1) sample from each background and downgradient well;

B. Establish groundwater protection standards for all constituents detected pursuant to paragraph (10)(F)2. or subparagraph (10)(F)4.A. The groundwater protection standards must be established in accordance with paragraph (10)(F)8; and

C. Include the recorded concentrations required by subparagraph (10)(F)8.., identify the background concentrations established under subsection (10)(C), and identify the groundwater protection standards established under subparagraph (10)(F)4.B. in the annual groundwater monitoring and corrective action report. The owner/operator must submit the annual groundwater monitoring and corrective action report to the department for review and approval.

5. If the concentrations of all constituents listed in Appendices I and II are shown to be at or below background values, using the statistical procedures in subsection (10)(E), for two (2) consecutive sampling events, the owner/operator may return to detection monitoring of the utility waste or CCR landfill. The owner/operator must prepare and submit a notification to the department for review and approval requesting that detection monitoring resume for the utility waste or CCR landfill. The owner/operator has completed the notification when the approved notification is placed in the facility's operating record.

6. If the concentrations of any constituent in Appendices I and II are above background values, but all concentrations are below the groundwater protection standard established under paragraph (10)(F)8., using the statistical procedures in subsection (10)(E), the owner/operator must continue assessment monitoring

in accordance with this section.

7. If one (1) or more constituents in Appendix II of this rule are detected at statistically significant levels above the groundwater protection standard established under paragraphs (10)(F)4. and 8. in any sampling event, the owner/operator must prepare a notification identifying the constituents in Appendix II to this rule that have exceeded the groundwater protection standard. The owner/operator has completed the notification when the notification is submitted to the department for approval and the approved notification is placed in the facility's operating record. The owner/operator of the utility waste or CCR landfill also must:

A. Characterize the nature and extent of the release and any relevant site conditions that may affect the remedy ultimately selected. The characterization must be sufficient to support a complete and accurate assessment of the corrective measures necessary to effectively clean up all releases from the utility waste or CCR landfill pursuant to section (11). Characterization of the release includes the following minimum measures:

(I) Install additional monitoring wells necessary to define the contaminant plume(s);

(II) Collect data on the nature and estimated quantity of material released including specific information on the constituents listed in Appendix II of this rule and the levels at which they are present in the material released;

(III) Install at least one (1) additional monitoring well at the facility boundary in the direction of contaminant migration and sample this well in accordance with subparagraph (10)(F)4.A.; and

(IV) Sample all wells in accordance with subparagraph (10)(F)4.A. to characterize the nature and extent of the release;

B. Notify all persons who own the land or reside on the land that directly overlies any part of the plume of contamination if contaminants have migrated off-site if indicated by sampling of wells in accordance with subparagraph (10)(F)7.A. The owner/operator has completed the notifications when they are submitted to the department for approval and the approved notification is placed in the facility's operating record;

C. Within ninety (90) days of finding that any of the constituents listed in Appendix II to this rule have been detected at a statistically significant level exceeding the groundwater protection standards must either—

(I) Initiate an assessment of corrective measures as required by subsection (11)(A); or

(II) Demonstrate that a source other than the utility waste or CCR landfill caused the contamination, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Any such demonstration must be supported by a report that includes the factual or evidentiary basis for any conclusions and must be certified to be accurate by a professional engineer. If a successful demonstration is made to the department, the owner/operator must continue monitoring in accordance with the assessment monitoring program pursuant to this section, and may return to detection monitoring if the constituents in Appendices I and II of this rule are at or below background as specified in paragraph (10)(F)5. The owner/operator must also include the demonstration in the annual groundwater monitoring and corrective action report submitted to the department for review and approval in addition to the certification by a professional engineer; and

D. If a successful demonstration has not been made at the end of the ninety (90) day period provided by part (10)(F)7.C.(II), initiate the assessment of corrective measures requirements under subsection (11)(A).

8. The owner/operator of the utility waste or CCR landfill must establish a groundwater protection standard for each constituent in Appendix II of this rule detected in the groundwater. The groundwater protection standard shall be—

A. For constituents for which a maximum contaminant level (MCL) has been established pursuant to the National Primary Drinking Water Regulations 40 CFR 141.62 (June 29, 2004) and 40 CFR 141.66 (December 7, 2000), the MCL for that constituent;

B. For the following constituents:

(I) Cobalt 6 micrograms per liter (μg/l)

(II) Lead 15 μg/l

(III) Lithium 40 μg/l

(IV) Molybdenum 100 μg/l; or

C. For constituents for which the background level is higher than the levels identified under subparagraphs (10)(F)8.A. and B., use the background concentration.

(11) Corrective Action. The owner/operator of a utility waste or CCR landfill that shows one (1) or more constituents listed in Appendix II of this rule being detected at levels above the groundwater protection standard as established under paragraph (10)(F)8. shall proceed with corrective action measures outlined in subsections (11)(A) through (C) below.

(A) Assessment of Corrective Measures.

1. Within ninety (90) days of finding that any of the constituents listed in Appendix II of this rule have been detected at a statistically significant level exceeding the groundwater protection standards listed under paragraphs (10)(F)4. and 8., or immediately upon detection of a release from a utility waste or CCR landfill, the owner/operator shall initiate an assessment of corrective measures to prevent further releases, to remediate any releases and to restore the affected area(s) to original conditions. This assessment of corrective measures shall be completed within ninety (90) days, unless the owner/operator demonstrates the need for additional time to complete the assessment of corrective measures due to site-specific conditions or circumstances. The owner/operator must obtain a certification from a professional engineer attesting that the demonstration is accurate. The ninety- (90-) day deadline to complete the assessment of corrective measures may be extended by the department for no longer than sixty (60) days. The owner/operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by subsection (10)(D), in addition to the certification by a professional engineer. Further, a report describing the assessment of corrective measures shall be submitted to the department for review and approval.

2. The owner/operator shall continue to monitor in accordance with the assessment monitoring program as specified in paragraph (10)(F)2.

3. The assessment shall include an analysis of the effectiveness of potential corrective measures in meeting all of the requirements and objectives of the remedy as described in this rule, addressing at least the following:

A. The performance, reliability, ease of implementation and potential impacts of appropriate potential remedies, including safety impacts, cross-media impacts, and control of exposure to any residual contamination;

B. The time required to begin and complete the remedy; and

C. The institutional requirements such as state or local permit requirements or other environmental or public health requirements that may substantially affect implementation of the remedy(ies).

4. The owner/operator must place the completed assessment of corrective measures in the facility's operating record and submit it to the department for review and approval. The assessment has been completed when it is approved by the department.

5. The owner/operator shall discuss the results of the corrective measures assessment at least thirty (30) days prior to the selection of remedy, in a public meeting with interested and affected parties.

(B) Selection of Remedy.

1. The department may determine that remediation of a release of a constituent listed in Appendix II from a utility waste or CCR landfill is not necessary if the owner/operator demonstrates to the satisfaction of the department that—

A. The groundwater is additionally contaminated by substances that have originated from a source other than a utility waste or CCR landfill and those substances are present in concentrations such that cleanup of the release from the utility waste or CCR landfill would provide no significant reduction in risk to actual or potential receptors;

B. The constituent(s) is present in groundwater that—

(I) Is not currently or reasonably expected to be a source of drinking water; and

(II) Is not hydraulically connected with a potential drinking water source to which the constituent(s) is migrating or likely to migrate in a concentration(s) that would exceed the groundwater protection standards established under paragraph (10)(F)8.;

C. Remediation of the release(s) is technically impracticable; or

D. Remediation results in unacceptable cross-media impacts.

2. Notwithstanding a determination by the department pursuant to paragraph (11)(A)1., the department may require the owner/operator to undertake source control measures or other measures (including closure if triggered) that may be necessary to eliminate or minimize further releases to the groundwater, to prevent exposure to the groundwater, or to remediate the groundwater to concentrations that are technically feasible and significantly reduce threats to human health or the environment.

3. Based on the results of the corrective measures assessment conducted in accordance with section (11)(A), the owner/operator must, as soon as feasible, select a remedy that, at a minimum, meets the standards listed in paragraph (11)(B)4. This requirement applies to, not in place of, any applicable standards under the Occupational Safety and Health Act. The owner/operator must prepare a semiannual report describing the progress in selecting and designing the remedy. Upon selection of a remedy, the owner/operator must prepare a final report describing the selected remedy and how it meets the standards specified in paragraph (11)(B)4. and submit this report to the department for review and approval. The owner/operator must obtain a certification from a professional engineer that the remedy selected meets the requirements of this section. The owner/operator shall submit the final report to the department within fourteen (14) days of selecting a proposed remedy. The report is complete once the report is approved by the department and the owner/operator has placed it in the operating record.

4. Remedies shall—

A. Be protective of the public health and the environment;

B. Attain the groundwater protection standard specified in paragraph (10)(F)8.;

C. Control the source(s) of releases so as to reduce or eliminate, to the maximum extent feasible, further releases of constituents listed in Appendix II of this rule into the environment that may pose a threat to human health or the environment;

D. Remove from the environment as much of the contaminated material that was released from the utility waste or CCR landfill as is feasible, taking into account factors such as avoiding inappropriate disturbance of sensitive ecosystems; and

E. Comply with standards for management of wastes as specified in paragraph (11)(C)3.

5. In selecting a remedy that meets the standards of paragraph (11)(B)4. the owner/operator, and in approving a remedy, the department, shall consider the following evaluation factors:

A. The long- and short-term effectiveness and protectiveness of the potential remedy, along with the degree of certainty that the remedy will prove successful based on consideration of the following:

(I) Magnitude of reduction of existing risks;

(II) Magnitude of residual risks in terms of likelihood of further releases due to waste remaining following implementation of the proposed remedy;

(III) The type and degree of long-term management required, including monitoring, operation, and maintenance;

(IV) Short-term risks that might be posed to the community, workers, or the environment during implementation of the remedy, including potential threats to human health and the environment associated with excavation, transportation, redisposal, or containment;

(V) Time until full protection is achieved;

(VI) Potential for exposure of humans and environmental receptors to remaining wastes, considering the potential threat to human health and the environment associated with excavation, transportation, redisposal, or containment;

(VII) Long-term reliability of the engineering and institutional controls; and

(VIII) Potential need for replacement of the remedy;

B. The effectiveness of the remedy in controlling the source to reduce further releases based on consideration of the following factors:

(I) The extent to which containment practices will reduce further releases; and

(II) The extent to which treatment technologies may be used;

C. The ease or difficulty of implementing the potential remedy(ies) based on consideration of the following types of factors:

(I) Degree of difficulty associated with constructing the remedy technology;

(II) Expected operational reliability of the proposed technologies;

(III) Need to coordinate with and obtain necessary approvals and permits from other agencies;

(IV) Availability of necessary equipment and specialists; and

(V) Available capacity and location of needed treatment, storage, and disposal services; and

D. The degree to which community concerns are addressed by the proposed remedy(ies).

6. The owner/operator shall specify as part of the proposed remedy a schedule(s) for initiating, implementing, and completing remedial activities. This schedule must require the completion of remedial activities within a reasonable period of time taking into consideration the factors set forth in subparagraphs (11)(B)6.A. through H. The owner/operator shall consider the following factors in determining, and the department will consider the following factors in approving, the schedule of remedial activities:

A. Extent and nature of contamination as determined by the characterization required pursuant to subsection (10)(F);

B. Reasonable probabilities of remedial technologies in achieving compliance with groundwater protection standards established in paragraph (10)(F)8. and other objectives of the remedy;

C. Availability of treatment or disposal capacity for CCR managed during implementation of the remedy;

D. Desirability of utilizing technologies that are not currently available, but which may offer significant advantages over already available technologies in terms of effectiveness, reliability, safety, or ability to achieve remedial objectives;

E. Potential risks to human health and the environment from exposure to contamination prior to completion of the remedy;

F. Resource value of any affected aquifer including:

(I) Current and future uses;

(II) Proximity and withdrawal rate of users;

(III) Groundwater quantity and quality;

(IV) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to the waste constituent;

(V) The hydrogeologic characteristic of the facility and surrounding land; and

(VI) The availability of alternative water supplies;

G. Practicable capability of the owner/operator; and

H. Other relevant factors.

(C) Implementation of the corrective action program.

1. If required to select a remedy pursuant to subsection (11)(B), the owner/operator must initiate remedial activities within ninety (90) days. Based on the schedule established pursuant to subsection (11)(B) for initiation, implementation and completion of remedial activities the owner/operator shall:

A. Establish and implement a corrective action groundwater monitoring program that:

(I) At a minimum, meets the requirements of an assessment monitoring program of subsection (10)(F);

(II) Indicates the effectiveness of the corrective action remedy; and

(III) Demonstrates compliance with groundwater protection standards pursuant to paragraph (10)(F)8.;

B. Implement the corrective action remedy selected under subsection (11)(B); and

C. Take any interim measures necessary, any measures determined to be necessary by the department, or both, to reduce the contaminants from leaching from the utility waste or CCR landfill, and/or potential exposures to human or ecological receptors. Interim measures shall, to the greatest extent feasible, be consistent with the objectives of and contribute to the performance of any remedy that may be required pursuant to subsection (11)(B). The following factors shall be considered by an owner/operator, and will be considered by the department, in determining whether interim measures are necessary:

(I) Time required to develop and implement a final remedy;

(II) Actual or potential exposure of nearby populations or environmental receptors to hazardous constituents listed in Appendix II;

(III) Actual or potential contamination of drinking water supplies or sensitive ecosystems;

(IV) Further degradation of the groundwater that may occur if remedial action is not initiated expeditiously;

(V) Weather conditions that may cause hazardous constituents to migrate or be released;

(VI) Potential for exposure to any of the constituents listed in Appendix II to this rule as a result of an accident or failure of a container or handling system;

(VII) Risks of fire or explosion, or potential for exposure to hazardous constituents as a result of an accident or failure of a container or handling system; and

(VIII) Other situations that may pose threats to human health and the environment.

2. The department may determine, based on information developed after implementation of the remedy has begun or other information, that compliance with the requirements of subsection (11)(B) are not being achieved through the remedy selected. In those cases, the owner/operator shall implement other methods or techniques that could feasibly achieve compliance with the requirements. Remedies selected pursuant to subsection (11)(B) shall be considered complete when—

A. The owner/operator complies for three (3) consecutive years with the groundwater protection standards established pursuant to paragraph (10)(F)8. at all points within the plume of contamination that lie beyond the groundwater monitoring well system established pursuant to section (10);

B. Compliance with the groundwater protection standards established pursuant to paragraph (10)(F)8, has been achieved within the plume of contamination that lies beyond the groundwater monitoring well system following risk assessment, or at a compliance point otherwise established by the department; and

C. All actions required to complete the remedy have been completed.

3. All CCR that are managed pursuant to a remedy required under subsection (11)(B), or an interim measure required under subparagraph (11)(C)1.C. shall be managed in a manner that complies with all applicable Resource Conservation Recovery Act requirements.

4. Upon completion of the remedy, the owner/operator shall submit a certification to the department within fourteen (14) days after the remedy has been completed in compliance with the requirements of subsection (11)(C). The certification shall be signed by the owner/operator and by a professional engineer prior to review and approval by the department. The report has been completed when it is placed in the operating record after department approval.

5. When, upon completion of the certification, the owner/operator and the department determine that the corrective action remedy has been completed in accordance with the requirements under subsection (11)(C), the owner/operator shall be released from the requirements for financial assurance for corrective action.

(12) Air Quality.

(A) The design, construction, and operation of the utility waste or CCR landfill shall minimize environmental hazards and shall conform to applicable ambient air quality and source control regulations.

(B) Fugitive dust control plan. The owner/operator must prepare and operate in accordance with a fugitive dust control plan as specified below:

1. The fugitive dust control plan must identify and describe measures the owner/operator will use to minimize CCR from becoming airborne at the facility. The owner/operator must select, and include in the fugitive dust control plan, measures that are most appropriate for site conditions, along with an explanation of how the measures selected are applicable and appropriate for site conditions and periodically assess the effectiveness of the control plan;

2. The fugitive dust control plan must include procedures to emplace CCR as conditioned CCR. Conditioned CCR means wetting CCR with water to a moisture content that will prevent wind dispersal, but will not result in free liquids. In lieu of water, CCR conditioning may be accomplished with an appropriate chemical dust suppression agent approved by the department; and

3. Amendment of the plan. The owner/operator must amend the written plan whenever there is a change in conditions that would substantially affect the written plan in effect and submit the revised plan to the department for review and approval.

(13) Aesthetics. The utility waste or CCR landfill shall be designed and operated at all times in an aesthetically acceptable manner. Wastes that are easily moved by wind shall be covered, as necessary, to prevent becoming airborne and scattered. On-site vegetation should be cleared only as necessary. Natural windbreaks, such as green belts, should be maintained where they will improve the appearance and operation of the utility waste or CCR landfill. Mining operations for the purpose of removing waste for beneficial reuse shall be conducted in such a manner as to not detract from the appearance of the utility waste or CCR landfill and receive prior approval from the department. All

Water Protection Program permits and approvals necessary to comply with the Missouri Clean Water Law and corresponding rules shall be obtained from the department.

(14) Cover.

(A) Cover shall be applied to: minimize infiltration of precipitation, prevent fugitive dust, and provide final cover as outlined below:

1. The permeability of the final cover system must be less than or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than 1×10^{-5} cm/sec, whichever is less;

2. This final cover consists of component layers, in order from top to bottom, as follows:

A. Six inches (6") of soil capable of sustaining vegetative growth;

B. An infiltration layer that contains a minimum of eighteen inches (18") of earthen material, with a coefficient of permeability of 1×10^{-5} cm/sec or less; and

C. Vegetation shall be established within one (1) year of initial seeding or within an alternative schedule approved by the department;

3. The cover system integrity must be maintained throughout the operational and post closure periods;

4. Surface grades and side slopes need to promote maximum runoff, without excessive erosion, and to minimize infiltration. Final side slopes shall not exceed twenty-five percent (25%) unless it has been demonstrated in a detailed slope stability analysis approved by the department that the slopes can be constructed and maintained throughout the entire operational life and post-closure period of the landfill. No active or final slope shall exceed thirty-three and one-third percent (33 1/3%);

5. Procedures to establish and maintain vegetative growth to combat erosion and improve appearance of idle and completed areas. Procedures shall include: seeding rate, fertilizer rate, soil conditioning rate, and provisions for mulching;

5. Procedures to maintain cover integrity, for example, regrading, and recovering;

7. Methods for borrow areas to be reclaimed so as to restore aesthetic qualities and prevent excessive erosion;

8. The final slope of the top of the utility waste or CCR landfill shall have a minimum slope of one percent (1%); and

9. The department may approve the use of an alternative final cover system provided that the owner/operator can demonstrate to the department that the alternative design will be at least equivalent to the final cover system described in this section.

(15) Post-Closure Care Requirements.

(A) Post-closure care maintenance requirements. Following closure of the utility waste or CCR landfill, the owner/operator must conduct post-closure care for the utility waste or CCR landfill, which must consist of at least the following:

1. Maintain the integrity and effectiveness of the final cover system, including making repairs to the final cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, and preventing run-on and run-off from eroding or otherwise damaging the final cover;

2. Maintain the integrity and effectiveness of the leachate collection and removal system and operate the leachate collection and removal system in accordance with the approved plans; and

3. Maintain the groundwater monitoring system and monitor the groundwater in accordance with the approved plans.

(B) Post-closure care period.

1. The owner/operator of the utility waste or CCR landfill must conduct post-closure care for thirty (30) years. However, the post-closure care period may be:

A. Decreased by the department if the owner/operator demonstrates that the reduced period is sufficient to protect human health and the environment and this demonstration is approved by the department; or

B. Increased by the department if determined that the lengthened period is necessary to protect human health and the environment.

2. If at the end of the post-closure care period the owner/operator of the utility waste or CCR landfill is operating under assessment monitoring then post-closure care shall continue until the owner/operator returns to detection monitoring.

3. Written post-closure plan.

A. Contents of the plan. The owner/operator of a utility waste or CCR landfill must prepare a written post-closure plan that includes, at a minimum, the information specified below:

(I) A description of the monitoring and maintenance activities required and the frequency at which these activities will be performed;

(II) The name, address, telephone number, and email address of the person or office to contact about the facility during the post-closure care period;

(III) A description of the planned uses of the property during the post-closure period. Post-closure use of the property shall not disturb the integrity of the final cover, liner(s), or any other component of the containment system, or the function of the monitoring systems unless corrective action is necessary as approved by the department; and

(IV) No other disturbance is allowed, unless the owner/operator of the utility waste or CCR landfill demonstrates that disturbance of the final cover, liner, or other component of the containment system, including any removal of CCR, will not increase the potential threat to human health or the environment. The demonstration must be certified by a professional engineer, and submitted to the department for approval.

B. Amendment of a written post-closure plan. The owner/operator may amend the initial or any subsequent written post-closure plan developed pursuant to approval by the department.

(C) Completion of post closure.

1. No later than sixty (60) days following completion of the post closure care period, the owner/operator of a utility waste or CCR landfill must submit a notification to the department verifying the post closure care has been completed. The notification must include a certification by a professional engineer verifying that post closure care has been completed in compliance with the post-closure plan specified in this section and 10 CSR 80-2.030.

(16) Safety. The utility waste or CCR landfill shall be designed, constructed, and operated in a manner so as to protect the health and safety of personnel and others associated with and affected by the operation. Access to the facility must be controlled and appropriate safety equipment required.

(17) Records.

(A) The owner/operator of a utility waste or CCR landfill shall maintain records and monitoring data as specified by the department in their operating record and file appropriate documents with the county recorder(s) of deeds.

1. Records shall be maintained at the facility site. Records five (5) years old or older may be stored at an alternate site, if approved by the department; such stored records must be made available at the landfill upon request of department personnel.

2. An owner/operator with more than one (1) utility waste or CCR landfill that is subject to the provisions of this rule may comply with the requirements of this section by using a single recordkeeping system provided the system identifies each file by the name of each utility waste or CCR landfill. The files may be maintained on electronic media accessible by a computer using common software. Records must cover at least the following:

A. Copies of the approved permit documents and plans, and the current permit;

B. Major operational problems, complaints, and difficulties;

C. Any demonstration, certification, finding, monitoring, testing, or analytical data required under this rule;

D. The current fugitive dust control plan and annual report, as well as dust and litter control efforts;

E. Closure and post-closure care plans and any monitoring, testing, or analytical data;

F. Most recently approved cost estimates and financial assurance documentation; and

G. Records associated with corrective measures.

3. Upon closing of the utility waste or CCR landfill, the existence of the utility waste or CCR landfill shall be recorded with the recorder(s) of deeds in the county(ies) where the utility waste or CCR landfill is located. The owner/operator may request permission from the department to remove the notation from the deed if all wastes are removed from the facility.

A. A survey and plat meeting the requirements of the current Missouri Standards for Property Boundary Surveys, 2 CSR 90-60, and detailed description of the utility waste or CCR landfill shall be prepared by a land surveyor. The survey plat and detailed description, at a minimum, shall contain the following information:

(I) The name of the property owner as it appears on the property deed;

(II) The detailed description of the property;

(III) The general types and location of the wastes and the depth(s) of fill within the property; and

(IV) The location of any leachate control or water monitoring systems, which shall be maintained after closure, and the length of time that these systems are to be maintained.

B. The owner/operator shall—

(I) Obtain approval from the department of the survey plat and detailed description;

(II) Have the plat notarized by a lawful notary public;

(III) File the survey plat and description with the county recorder of deeds within thirty (30) days of department approval; and

(IV) Submit to the department within thirty (30) days of filing, two (2) copies of the notarized and properly recorded survey plat and detailed description showing the recorder of deeds' seal or stamp, the book and page numbers, and the date of filing.

(18) Self-Certification.

(A) Existing CCR landfills must within thirty (30) days of the effective date of this rule or thirty (30) days of request by the department, provide to the department for review and approval a self-certification report verifying compliance with the requirements of subsection (18)(B) and additionally include the following:

1. The name and address of the owner/operator or permitee of the CCR landfill; the name associated with the CCR landfill; and the permit number of the CCR landfill if one has been assigned;

2. The location of the CCR landfill identified on the most recent United States Geological Survey (USGS) seven and one half (7 1/2) minute or fifteen (15) minute topographic quadrangle map, or a topographic map of equivalent scale if a USGS map is not available;

3. A statement of the purpose for which the CCR landfill is being used;

4. The name and size in acres of the watershed within which the CCR landfill is located;

5. Describe the groundwater monitoring network and plan, and summarize the data obtained;

6. Upon request, provide all groundwater monitoring data in a digital format specified by the department;

7. Provide any initial or interim closure plan and post closure plan prepared prior to the effective date of this rule;

8. Identify the groundwater statistical procedure chosen and background values;

9. Identify whether a SSI exists over background values;

10. Identify any planned additional groundwater investigations, including a schedule; and

11. Provide a schedule for future detection or assessment monitoring. The department may consider all relevant data whether or not it was collected from a groundwater monitoring network installed as a requirement of Title 40 CFR 257 subtitle D.

(B) Certifications. Certifications from a professional engineer, professional or registered geologist, or toxicologist as appropriate shall be submitted to the department certifying for the following technical assessments that:

1. The location restrictions meet the requirements of this rule;

2. The design of the composite liner or alternative composite liner meets the requirements of this rule, and the cover system meets the requirements of this rule;

3. The design and construction of the groundwater monitoring system and statistical analysis plan meets the requirements of this rule;

4. The design and construction of the closure and post-closure plan meets the requirements of this rule; and

5. A compiled history of construction for the CCR landfill that, to the extent feasible, contains—

A. A description of the physical and engineering properties of the foundation and abutment materials on which the CCR landfill is constructed;

B. A statement of the type, size, range, and physical and engineering properties of the materials used in constructing each phase or stage of the CCR landfill; the method of site preparation and construction of each zone of the CCR landfill; and the approximate dates of construction of each successive stage of the CCR landfill;

C. At a scale that details engineering structures and appurtenances relevant to the design, construction, operation, and maintenance of the CCR landfill, detailed dimensional drawings of the CCR landfill, including a plan view and cross sections of the length and width of the CCR landfill, showing all zones, foundation improvements, drainage provisions, spillways, diversion ditches, outlets, instrument locations, and slope protection, and any identifiable natural or manmade features that could adversely affect operation of the CCR landfill due to malfunction or misoperation;

D. A description of the type, purpose, and location of existing instrumentation;

E. A description of each diversion design feature and capacities and calculations used in their determination;

F. The construction specifications and provisions for surveillance, maintenance, and repair of the CCR landfill; and

G. Any record or knowledge of structural instability of the CCR landfill.

(C) Application for department approval and assessment of fees.

1. By October 1, 2019, all owner/operator of existing CCR landfills must submit to the department an application for review and approval of completeness of the reports, data, and assessments required in subsections (18)(A) and (B).

2. The application for review and approval will include the following:

A. A request to the department to review the documents that the owner/operator has certified;

B. Agreement to pay fees as provided by section 260.242,

RSMo.

3. Within sixty (60) days of receipt of the application, the department shall issue a letter approving or approving with conditions receipt of a complete application and accepting the CCR landfill into the state review process.

4. The owner/operator of CCR landfills shall submit engineering drawings or plans to the department detailing the manner and timing of closure. Such engineering drawings and plans shall be submitted ninety (90) days prior to commencement of closure.

(19) Closure of CCR Landfills.

(A) Closure of a CCR landfill or any lateral expansion of a CCR landfill must be completed either by leaving the CCR in place and installing a final cover system or through removal of the CCR and decontamination of the CCR landfill, as described in subsections (19)(B) through (J).

(B) Written Closure Plan.

1. Content of the plan. The owner/operator of a CCR landfill must prepare a written closure plan that describes the steps necessary to close the CCR landfill at any point during the active life of the CCR landfill consistent with recognized and generally accepted good engineering practices. The written closure plan must include the following information:

A. A narrative description of how the CCR landfill will be closed in accordance with this section;

B. If closure of the CCR landfill will be accomplished through removal of CCR, a description of the procedures to remove the CCR and decontaminate the CCR landfill in accordance with subsection (19)(C);

C. If closure of the CCR landfill will be accomplished by leaving CCR in place, a description of the final cover system, designed in accordance with subsection (19)(D), and the methods and procedures to be used to install the final cover. The closure plan must also discuss how the final cover system will achieve the performance standards specified in subsection (19)(D);

D. An estimate of the maximum inventory of CCR ever on site over the active life of the CCR landfill;

E. An estimate of the largest area of the CCR landfill ever requiring a final cover as required by subsection (19)(D) at any time during the CCR landfill's active life; and

F. A schedule for completing all activities necessary to satisfy the closure criteria in this section, including an estimate of the year in which all closure activities for the CCR landfill will be completed. The schedule should provide sufficient information to describe the sequential steps that will be taken to close the CCR landfill, including identification of major milestones such as coordinating with and obtaining necessary approvals and permits from other agencies, installation of the final cover system, and the estimated timeframes to complete each step or phase of CCR landfill closure. When preparing the written closure plan, if the owner/operator of a CCR landfill estimates that the time required to complete closure will exceed the timeframes specified in paragraph (19)(F)1., the written closure plan must include the site-specific information, factors, and considerations that would support any time extension sought under paragraph (19)(F)2.

2. Timeframes for preparing the initial written closure plan.

A. Existing utility waste or CCR landfills. The owner/operator of the CCR landfill must provide the initial written closure plan prepared pursuant to 40 CFR 257 and place the plan in the facility's operating record.

B. After the effective date of this rule, new CCR landfills or lateral expansions of a CCR landfill must submit a written closure plan to the department for review and approval as part of the new construction permit application that is consistent with the requirements listed in paragraph (19)(B)1.

3. Amendment of a written closure plan.

A. The owner/operator may amend the initial or any subsequent written closure plan developed pursuant to section (19) at any time.

B. The owner/operator must amend the written closure plan whenever—

(I) There is a change in the operation of the CCR landfill that would substantially affect the written closure plan in effect; or

(II) Before or after closure activities have commenced, unanticipated events necessitate a revision of the written closure plan.

C. The owner/operator must amend the closure plan and receive department approval prior to an operational change at the facility or CCR landfill. If a closure plan requires revision after closure activities have commenced for a CCR landfill, the owner/operator must submit the amendment to the department for review and approval no later than thirty (30) days following the triggering event.

4. The owner/operator of the CCR landfill must obtain a written approval from the department for any closure plan or amendment of a closure plan. Closure plans must meet the requirements of this section.

(C) Closure by removal of CCR. An owner/operator may elect to close a CCR landfill by removing and decontaminating all areas affected by releases from the CCR landfill. CCR removal and decontamination are complete when constituent concentrations throughout the CCR landfill and any areas affected by releases have been removed and groundwater monitoring concentrations do not exceed the groundwater protection standard established pursuant to paragraph (10)(F)8. for constituents listed in Appendix II. CCR landfills closed by removing the CCR are not subject to the post-closure criteria contained in section (15).

(D) Closure performance standard when leaving CCR in place.

1. The owner/operator of a CCR landfill must ensure that, at a minimum, the CCR landfill is closed in a manner that will—

A. Control, minimize, or eliminate, to the maximum extent feasible, post-closure infiltration of liquids into the waste and releases of CCR, leachate, or contaminated run-off to the ground or surface waters or to the atmosphere;

B. Preclude the probability of future impoundment of water, sediment, or slurry;

C. Include measures that provide for major slope stability to prevent the sloughing or movement of the final cover system during the closure and post-closure care period;

D. Minimize the need for further maintenance of the CCR landfill; and

E. Be completed in the shortest amount of time consistent with recognized and generally accepted good engineering practices.

2. Final cover system. If a CCR landfill is closed by leaving CCR in place, the owner/operator must install a final cover system, or an alternative final cover system, that is designed to minimize infiltration and erosion, and at a minimum, meets the following requirements:

A. The design of the final cover system must be included in the written closure plan required by subsection (19)(B). The final cover system must be designed and constructed to meet the criteria provided in section (14);

B. The owner/operator may select an alternative final cover system design, provided the alternative final cover system is designed and constructed to meet the performance criteria in section (14). The design of the final cover system must be included in the written closure plan required by subsection (19)(B).

(I) The design of the final cover system must include an infiltration layer that achieves an equivalent reduction in infiltration as the infiltration layer specified in section (14).

(II) The design of the final cover system must include an erosion layer that provides equivalent protection from wind or

water erosion as the erosion layer specified in section (14).

(III) The disruption of the integrity of the final cover system must be minimized through a design that accommodates settling and subsidence; and

C. For final cover systems installed prior to the effective date of this rule, the owner/operator of the CCR landfill must obtain a written certification from a professional engineer that the design of the final cover system meets the requirements of 40 CFR 257.102. Final cover systems installed after the effective date must meet the criteria contained in this section. The department will receive documentation in accordance with section (18).

(E) Initiation of closure activities. Except as provided for in paragraph (19)(E)4. and section (20), the owner/operator of a CCR landfill must commence closure no later than the applicable timeframes specified in either paragraph (19)(E)1. or 2., the CCR landfill owner/operator must also notify the department one hundred and eighty (180) days prior to initiating closure.

1. The owner/operator must commence closure of the CCR landfill no later than thirty (30) days after the date on which the CCR landfill either:

A. Receives the known final receipt of waste, either CCR or any non-CCR waste stream; or

B. Removes the known final volume of CCR from the CCR landfill for the purpose of beneficial use of CCR.

2. Initiation of closure activities timeframes.

A. Except as provided by subparagraph (19)(E)2.B., the owner/operator must commence closure of a CCR landfill that has not received CCR or any non-CCR waste stream or is no longer removing CCR for the purpose of beneficial use within two (2) years of the last receipt of waste or within two (2) years of the last removal of CCR material for the purpose of beneficial use.

B. Notwithstanding subparagraph (19)(E)2.A. the owner/operator of the CCR landfill may petition the department for an additional two (2) years to initiate closure of the idle utility waste or CCR landfill provided the owner/operator provides written documentation that the CCR landfill will continue to accept wastes or will start removing CCR for the purpose of beneficial use. The documentation must be supported by, at a minimum, the information specified in parts (19)(E)2.B.(I) and (II). The owner/operator may obtain two (2) two- (2-) year extensions provided the owner/operator continues to be able to demonstrate that there is reasonable likelihood that the CCR landfill will accept wastes in the foreseeable future or will remove CCR from the landfill for the purpose of beneficial use. The owner/operator must submit to the department for approval each completed demonstration, if more than one (1) time extension is sought prior to the end of any two- (2-) year period including:

(I) Information documenting that the CCR landfill has remaining storage or disposal capacity or that the CCR landfill can have CCR removed for the purpose of beneficial use; and

(II) Information demonstrating that that there is a reasonable likelihood that the CCR landfill will resume receiving CCR or non-CCR waste streams in the foreseeable future or that CCR can be removed for the purpose of beneficial use. The narrative must include a best estimate as to when the CCR landfill will resume receiving CCR or non-CCR waste streams. The situations listed in subparts (19)(E)2.B.(II)(a) through (d) are examples of situations that would support a determination that the CCR landfill will resume receiving CCR or non-CCR waste streams in the foreseeable future:

(a) Normal plant operations include periods during which the CCR landfill does not receive CCR or non-CCR waste streams, such as the alternating use of two (2) or more CCR landfills whereby at any point in time one (1) CCR landfill is receiving CCR while CCR is being removed from a second CCR landfill after its dewatering;

(b) The CCR landfill is dedicated to a coal-fired boiler unit that is temporarily idled (e.g., CCR is not being generated) and there is a reasonable likelihood that the coal-fired boiler will resume operations in the future;

(c) The CCR landfill is dedicated to an operating coal-fired boiler (i.e., CCR is being generated); however, no CCR are being placed in the CCR landfill because the CCR are being entirely diverted to beneficial uses, but there is a reasonable likelihood that the CCR landfill will again be used in the foreseeable future; and

(d) The CCR landfill currently receives only non-CCR waste streams and those non-CCR waste streams are not generated for an extended period of time, but there is a reasonable likelihood that the CCR landfill will again receive non-CCR waste streams in the future.

C. In order to obtain additional time extension(s) to initiate closure of a CCR landfill beyond the two (2) years provided by subparagraph (19)(E)2.A., the owner/operator of the CCR landfill must include with the demonstration required by subparagraph (19)(E)2.B. the following statement signed by the owner/operator or an authorized representative:

(I) "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this demonstration and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

3. For purposes of this paragraph, closure of the CCR landfill has commenced if the owner/operator has ceased placing waste and completes any of the following actions or activities:

A. Taken any steps necessary to implement the written closure plan required by subsection (19)(B);

B. Submitted a completed application for any required state or agency permit or permit modification; or

C. Taken any steps necessary to comply with any state or other agency standards that are a prerequisite, or are otherwise applicable, to initiating or completing the closure of a CCR landfill.

4. The timeframes specified in paragraphs (19)(E)1. and 2. do not apply to an owner/operator of an existing CCR landfill closing the CCR landfill for failure to meet the criteria in subsection (1)(B).

(F) Completion of closure activities.

1. Except as provided for in paragraph (19)(F)2., for existing and new CCR landfills and any lateral expansion of a CCR landfill, the owner/operator must complete closure of the CCR landfill within six (6) months of commencing closure activities or another timeframe as approved by the department as part of the official closure plan.

2. Extensions of closure timeframes following approval of the official closure plan.

A. The timeframes for completing closure of a CCR landfill specified under paragraph (19)(F)1. may be extended if the owner/operator can demonstrate that it was not feasible to complete closure of the CCR landfill within the required timeframes due to factors beyond the facility's control. If the owner/operator is seeking a time extension beyond the time specified in the written closure plan as required by paragraph (19)(B)1., the demonstration must include a narrative discussion providing the basis for additional time beyond that specified in the closure plan. Factors that may support such a demonstration include:

(I) Complications stemming from the climate and weather, such as unusual amounts of precipitation or a significantly shortened construction season;

(II) The geology and terrain surrounding the CCR landfill will affect the amount of material needed to close the CCR landfill; or

(III) Time required or delays caused by the need to

coordinate with and obtain necessary approvals and permits from state and local agencies.

B. Maximum time extensions. CCR landfills may extend the timeframe to complete closure of the CCR landfill multiple times, in one- (1-) year increments. For each one- (1-) year extension sought, the owner/operator must substantiate the factual circumstances demonstrating the need for the extension. No more than a total of two (2) one- (1-) year extensions may be obtained for any CCR landfill.

C. In order to obtain additional time extension(s) to complete closure of a CCR landfill beyond the times provided by paragraph (19)(F)1., the owner/operator must submit to the department for review and approval, the demonstration required by subparagraph (19)(F)2.A. along with the following statement signed by the owner/operator or an authorized representative:

(I) "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this demonstration and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

3. Upon completion, the owner/operator of the CCR landfill must obtain a certification from a professional engineer verifying that closure has been completed in accordance with the closure plan specified in subsection (19)(B) and the requirements of this section and submit the certification to the department for review and approval.

(G) No later than the date the owner/operator initiates closure of a CCR landfill, the owner/operator must submit a closure notification to the department.

(H) Within thirty (30) days of completion of closure of the CCR landfill or within a timeframe agreed to by the department, the owner/operator must submit a closure notification to the department. The notification must include the certification by a professional engineer as required by paragraph (19)(F)3.

(I) Deed notations – See section (17) and 10 CSR 2.030. An owner/operator that closes a CCR landfill through closure by removal in accordance with subsection (19)(C) is not subject to the deed notation requirements of subsection (19)(I).

(J) The owner/operator of the CCR landfill must comply with the closure recordkeeping requirements specified in section (17).

(20) Alternative Closure Requirements.

(A) The owner/operator of a CCR landfill, or any lateral expansion of a CCR landfill that is subject to closure pursuant to subsection (1)(B) may continue to receive CCR in the landfill provided the owner/operator meets the requirements of either subsection (20)(A) or (B) and receives department approval.

1. No alternative CCR disposal capacity. Notwithstanding the provisions of (1)(B), a CCR landfill may continue to receive CCR if the owner/operator of the CCR landfill certifies that the CCR must continue to be managed in that CCR landfill due to the absence of alternative disposal capacity both on site and off site of the facility. To qualify under this paragraph, the owner/operator of the CCR landfill must document that all of the following conditions have been met:

A. No alternative disposal capacity is available on site or off site. An increase in costs or the inconvenience of existing capacity is not sufficient to support qualification under this section;

B. The owner/operator has made, and continues to make, efforts to obtain additional capacity. Qualification under this subsection lasts only as long as no alternative capacity is available. Once alternative capacity is identified, the owner/operator must arrange to use such capacity as soon as feasible;

C. The owner/operator must remain in compliance with all other requirements of this rule, including the requirement to conduct any necessary corrective action; and

D. The owner/operator must prepare an annual progress report documenting the continued lack of alternative capacity and the progress towards the development of alternative CCR disposal capacity.

2. Once alternative capacity is available, the CCR landfill must cease receiving CCR and initiate closure following the timeframes in section (19).

3. If no alternative capacity is identified within five (5) years after the initial certification, the CCR landfill must cease receiving CCR and close in accordance with the timeframes in section (19).

(B) Permanent cessation of a coal-fired boiler(s) by a date certain. Notwithstanding the provisions of subsection (1)(B), a CCR landfill may continue to receive CCR if the owner/operator certifies that the facility will cease operation of the coal-fired boilers within the timeframes specified in paragraph (20)(B)4., but in the interim period (prior to closure of the coal-fired boiler), the facility must continue to use the CCR landfill due to the absence of alternative disposal capacity both on-site and off-site of the facility. To qualify under this subsection, the owner/operator of the CCR landfill must document that all of the following conditions have been met and submit such documentation to the department for review and approval:

1. No alternative disposal capacity is available on site or off site. An increase in costs or the inconvenience of existing capacity is not sufficient to support qualification under this section;

2. The owner/operator must remain in compliance with all other requirements of this subsection, including the requirement to conduct any necessary corrective action;

3. The owner/operator must prepare an annual progress report documenting the continued lack of alternative capacity and the progress towards the closure of the coal-fired boiler; and

4. For a CCR landfill, the coal-fired boiler must cease operation, and the CCR landfill must complete closure no later than April 19, 2021.

(C) Required notices and progress reports. An owner/operator of a CCR landfill that closes in accordance with subsection (20)(A) or (B) must complete and submit the notices and progress reports to the department specified in paragraphs (2)(C)1. and 2.

1. Within six (6) months of becoming subject to closure pursuant to subsection (1)(B), the owner/operator must prepare and submit to the department a notification of intent to comply with the alternative closure requirements of this section. The notification must describe why the CCR landfill qualifies for the alternative closure provisions under either subsection (20)(A) or (B), in addition to providing the documentation and certifications required by subsection (20)(A) or (B).

2. The owner/operator must prepare the periodic progress reports required by subparagraph (20)(A)1.D. or paragraph (20)(B)3., in addition to describing any problems encountered and a description of the actions taken to resolve the problems. The annual progress reports must be completed according to the following schedule:

A. The first annual progress report must be prepared and submitted to the department for approval no later than thirteen (13) months after receiving department approval of the alternative closure requirements.

B. The second annual progress report must be prepared and submitted to the department for approval no later than twelve (12) months after completing the first annual progress report. Additional annual progress reports must be prepared and submitted to the department for approval within twelve (12) months of completing the previous annual progress report.

C. The owner/operator has completed the progress reports specified in paragraph (20)(C)2. when the reports are submitted to the department for approval, determined complete

by the department, and the reports have been placed in the facility's operating record.

D. An owner/operator of a CCR landfill must also prepare the notification of intent to close a CCR landfill as required by section (19).

E. The owner/operator of the CCR landfill must comply with the recordkeeping requirements specified in section (17).

Appendix I—Constituents for Detection Monitoring
Boron
Calcium
Chloride
Fluoride
pH
Sulfate
Total Dissolved Solids (TDS)

Appendix II—Constituents for Assessment Monitoring
Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Fluoride
Lead
Lithium
Mercury
Molybdenum
Selenium
Thallium
Radium 226 and 228 combined

*AUTHORITY: section 260.225, RSMo [(Cum. Supp. 1996)] **2016**. Original rule filed Oct. 10, 1996, effective July 30, 1997. Amended: Filed Dec. 31, 2018.*

PUBLIC COST: This proposed amendment will cost state agencies or political subdivisions seven hundred and four thousand six hundred and forty-one dollars ($704,641) in aggregate.

PRIVATE COST: This proposed amendment will cost private entities approximately seven hundred and twenty thousand dollars ($720,000) in the aggregate.

NOTICE OF PUBLIC HEARING AND NOTICE TO SUBMIT COMMENTS: Anyone may file a statement in support of or in opposition to this proposed amendment with the Missouri Department of Natural Resources, 1101 Riverside Drive, Jefferson City, MO. To be considered, comments will be received until March 28, 2019. A public hearing is scheduled for 1:00 p.m. March 21, 2019, at the LaCharrette Conference Room, 1101 Riverside Drive, Jefferson City, Missouri.

FISCAL NOTE

PUBLIC COST

I. RULE NUMBER

10 CSR 80-11.010 Utility Waste and Coal Combustion Residuals Landfills
Amendment

II. SUMMARY OF FISCAL IMPACT

Affected Agency or Political Subdivision	Estimated Cost of Compliance in the Aggregate
Missouri Department of Natural Resources	$704,641.00
No other public entities should incur cost	

III. Worksheet

I. Fund Costs by Category	FY 2019	FY 2020	FY 2021	Total per Rule
Salaries	$165,330.00	$333,967.00	$337,306.00	
Fringe Benefits	$103,043.00	$163,916.00	$164,908.00	
Equipment and Expense	$75,804.00	$32,103.00	$32,905.00	
Local Assistance	$0.00	$0.00	$0.00	
Other Fund Costs	$0.00	$0.00	$0.00	
TOTAL FUND COSTS - ALL CATEGORIES	**$344,177.00**	**$529,986.00**	**$535,119.00**	
Divided in Half per rule	**$172,088.50**	**$264,993.00**	**$267,559.50**	**$704,641.00**

IV. Assumptions

1. The totals in the worksheet above are divided for the two CCR rules (landfill and impoundment) evenly.

Position	FTE	Duties
Environmental Engineer I/II (at $58,896 annually)	2	Permit modifications, groundwater monitoring reviews, groundwater corrective action planning and oversight, Inspections, website review, new cell construction review and analysis
Environmental Specialist I/II/III (at $52,116 annually)	1	Groundwater monitoring, groundwater report reviews, inspections as needed
Environmental Specialist I/II/III (at $52,116 annually)	2	Quarterly inspections for each of the 37 ponds, beneficial use inspections, investigation efforts
Geologist I/II/III (at $56,520 annually)	1	Groundwater monitoring, groundwater corrective action, and geological and hydrological assessments for the siting of new CCR units

FISCAL NOTE

PRIVATE COST

I. RULE NUMBER

10 CSR 80-11.010 Utility Waste and Coal Combustion Residuals Landfills
Amendment

II. SUMMARY OF FISCAL IMPACT

Estimate of the number of entities by class which would likely be affected by the adoption of the proposed rule:	Classification by types of the business entities which would likely be affected:	Estimate in the aggregate as to the cost of compliance with the rule by the affected entities:
Electrical Generating Coal Fired Power Plants that have CCR Landfills	Corporations (9)	$720,000 for the first three years

III. Worksheet

Landfills

Name	Owner/Operator	County	Status	One-Time Fee	Annual Fee
Labadie	Ameren	Franklin	Active	N/A	$15,000
Ameren Sioux Plant	Ameren	St. Charles	Active	N/A	$15,000
Iatan	KCPL	Platte	Active	N/A	$15,000
James River Power Station	CUS	Greene	Active	N/A	$15,000
KCPL Montrose*	KCPL	Henry	Active	N/A	$15,000
New Madrid	AECI	New Madrid	Active	N/A	$15,000
Sibley*	KCPL	Jackson	Active	N/A	$15,000
John Twitty Energy Center	CUS	Greene	Active	N/A	$15,000
Empire Asbury	Empire	Jasper	Not constructed Est cell completion 2018	N/A	$15,000
				$0	$135,000

Financial Assurance Instrument Preparation Cost		
Lanfill Facilities Sites	FAI Cost	Total Cost
9	$5,000.00	$45,000.00

Cost Totals	Number of CCR Landfills	2019	2020	2021
Annual fee ($15,000/ unit)	9	$135,000	$135,000	$135,000
FAI Cost	9	$45,000	$0	$0
		$180,000	**$135,000**	**$135,000**

Construction QA/QC after Closure for Report		
Cost ($30,000 per landfill)	9	$270,000

IV. Assumptions

1. The fee is based on an annual fee of $15,000.00 per facility.
2. There are nine (9) facilities subject to the annual fee.
3. All facilities used for this calculation are Coal Combustion Residual Landfills as defined by 40 CFR 257.
4. Fee will be paid annually until the facility is approved for release from post closure by the Department of Natural Resources.
5. It is assumed that all facilities will not conduct closure by removal (i.e. facilities plan to leave CCR material in place as part of closure) and will pay the annual fees through the post closure period.
6. 40 CFR Part 257 was effective on October 19, 2015 the regulatory requirements mirror the federal regulations except that FAIs and construction quality assurance/ construction quality control (QA/QC) are state requirements.
7. FAIs will require the development of a financial worksheet and the submittal of a financial test. It is assumed that all Electrical Generating Coal Fired Power Plants that have CCR Landfills will use a financial test as their FAI mechanism due to the great asset versus debt ratios these entities typically have.
8. QA/QC will require the submittal of a summary report after closure. 40 CFR 257 has requirements for the Professional Engineer (PE) certification of all work completed at the CCR impoundment. The Department will require the submittal of a PE certified report summarizing the P.E.'s oversight of the work.
9. The QA/QC Cost will be incurred after the facilities close. We are unsure about closure dates.

Title 10—DEPARTMENT OF NATURAL RESOURCES
Division 80—Solid Waste Management
Chapter 12—Coal Combustion Residuals Surface Impoundments

PROPOSED RULE

10 CSR 80-12.010 Design and Operation – Coal Combustion Residuals Surface Impoundments. This rule provides design, operation, and closure requirements for CCR surface impoundments similar to those contained in "Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments," part 257, subpart D of title 40, *Code of Federal Regulations*.

PURPOSE: This rule pertains to the design, construction, and operation of coal combustion residuals (CCR) surface impoundments. The requirements of this rule ensure the operation of CCR surface impoundments have no adverse effects on human health or the environment.

PUBLISHER'S NOTE: The secretary of state has determined that the publication of the entire text of the material which is incorporated by reference as a portion of this rule would be unduly cumbersome or expensive. This material as incorporated by reference in this rule shall be maintained by the agency at its headquarters and shall be made available to the public for inspection and copying at no more than the actual cost of reproduction. This note applies only to the reference material. The entire text of the rule is printed here.

(1) General Provisions. This rule applies to new CCR surface impoundments constructed after the effective date of this rule and to existing CCR surface impoundments that did not certify final closure prior to October 19, 2015, under part 257, subpart D of title 40, *Code of Federal Regulations*. Applicable provisions contained in 10 CSR 80-2 also apply. In the event of a conflict between 10 CSR 80-2 and this rule, this rule shall prevail.

(A) If standards or techniques other than those listed in this rule are used, it is the obligation of the CCR surface impoundment owner/operator to demonstrate to the department in advance that the standards or techniques to be employed will be at least as protective as the criteria in this rule. Procedures for the standards or techniques shall be submitted to the department in writing and approved by the department in writing prior to being employed. Notwithstanding any other provision of these rules, when it is found necessary, the department may require changes in design and/or operation as the condition warrants.

(B) Existing CCR surface impoundments that do not meet the performance standards of paragraphs (3)(B)1., 3., 4., 5., or 6., subsection (5)(B) or (C), section (7), or fail to make the demonstrations required by section (18) must submit closure plans per regulation 10 CSR 80-2.030 and sections (19) and (20) of this rule and initiate closure within six (6) months on the effective date of this rule. Existing CCR surface impoundments that do not meet the performance standards of paragraph (3)(B)2. must submit closure plans per 10 CSR 80-2.030 and sections (19) and (20) of this rule and shall initiate closure by October 31, 2020. Closure schedules shall be approved by the department and shall include as part of the closure plan, site-specific information, factors, and considerations that would support any time extension requested. Until closure is achieved CCR surface impoundments shall continue to operate in compliance with this rule.

(C) The standards set forth in ASTM International, ASTM method D422-63(2007), 2007, ASTM Test D2487-11, 2011, ASTM D-5084-16, 2016, ASTM D1140-17 and ASTM method D4318-17, 2017, as published by ASTM International, West Conshohocken, PA 19428, are incorporated by reference. The standards set forth in the Endangered Species Act, as published by the United States Government Publishing Office, 732 N. Capital Street NW, Washington, D.C. 20401, 1973, are incorporated by reference. This rule does not incorporate any subsequent amendments or additions.

(2) Solid Waste Accepted. Fly ash, bottom ash, boiler slag or other slag waste, and flue gas emission control waste generated primarily from the combustion of coal or other fossil fuels; coal residuals; clean fill; and department approved solidification additives used during closure of a CCR surface impoundment may be accepted.

(3) Site Selection.

(A) Site selection and utilization shall include a study and evaluation of geologic and hydrologic conditions and soils at the proposed CCR surface impoundment and an evaluation of the environmental effect upon the projected use of the completed CCR surface impoundment. Applications for CCR surface impoundment construction permits received on or after the effective date of this rule shall document compliance with all applicable siting restriction requirements contained in paragraphs (3)(B)1. through 6.

(B) Location restrictions.

1. Owners/operators of CCR surface impoundments, located in one hundred (100)-year floodplains shall demonstrate to the department that the CCR surface impoundment will not restrict the flow of the one hundred (100)-year flood, reduce the temporary water storage capacity of the floodplain, or result in release of waste or leachate so as to pose a hazard to public health or the environment.

2. Placement above the uppermost aquifer. CCR surface impoundments constructed or operated after October 19, 2015, including lateral expansions, must be constructed with a base that is located no less than 1.52 meters (five feet) above the upper limit of the uppermost aquifer, or must demonstrate that there will not be an intermittent, recurring, or sustained hydraulic connection between any portion of the base of the CCR surface impoundment and the uppermost aquifer due to normal fluctuations in groundwater elevations (including the seasonal high water table).

3. Wetlands. CCR surface impoundments shall not be located in wetlands, unless the owner/operator can make the following demonstrations to the department:

A. The presumption that a practicable alternative to the proposed CCR surface impoundment is available which does not involve wetlands is clearly rebutted;

B. The construction and operation of the CCR surface impoundment will not—

(I) Cause or contribute to violations of any applicable state water quality standard;

(II) Violate any applicable toxic effluent standard or prohibition under section 307 of the federal Clean Water Act of the U.S. Environmental Protection Agency;

(III) Violate any requirement under the Marine Protection, Research, and Sanctuaries Act of 1972 for the protection of a marine sanctuary;

C. The CCR surface impoundment will not cause or contribute to significant degradation of wetlands. The owner/operator shall demonstrate the integrity of the CCR surface impoundment and its ability to protect ecological resources by addressing the following factors:

(I) Erosion, stability, and migration potential of native wetland soils, muds and deposits used to support the CCR surface impoundment;

(II) Erosion, stability, and migration potential of dredged and fill materials used to support the CCR surface impoundment;

(III) The volume and chemical nature of the waste disposed of in the CCR surface impoundment;

(IV) Impacts on fish, wildlife, and other aquatic resources and their habitat from potential release of waste from the CCR surface impoundment;

(V) The potential effects of contamination of the wetland and the resulting impacts on the environment; and

(VI) Any additional factors, as necessary, to demonstrate that ecological resources in the wetland are sufficiently protected.

D. Steps have been taken to attempt to achieve no net loss of wetlands (as defined by acreage and function) by first avoiding impacts to wetlands to the maximum extent practicable as required by paragraph (3)(B)3., then minimizing unavoidable impacts to the maximum extent practicable, and finally offsetting remaining unavoidable wetland impacts through all appropriate and practicable compensatory mitigation actions (for example, restoration of existing degraded wetlands or creation of man-made wetlands); and

E. The requirements of paragraph (3)(B)3. may be satisfied by the owner/operator obtaining a United States Army Corps of Engineers permit for construction in a wetland or by demonstrating that the wetland is not regulated by the United States Army Corps of Engineers or other appropriate agency.

4. Fault areas. CCR surface impoundments located in a seismic impact zone shall not be located within two hundred feet (200') of a fault that has had displacement in Holocene time unless that owner/operator demonstrates to the department that an alternative setback distance of less than two hundred feet (200') will prevent damage to the structural integrity of the CCR surface impoundment and will be protective of human health and the environment.

5. Seismic impact zones. CCR surface impoundments must not be located in seismic impact zones unless the owner/operator demonstrates that all structural components including liners, leachate collection and removal systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site.

6. Unstable areas. The owner/operator of a CCR surface impoundment located in an unstable area shall demonstrate to the department that the CCR surface impoundment's design ensures that the integrity of the structural components of the CCR surface impoundment will not be disrupted. The owner/operator shall consider the following factors, at a minimum, when determining whether an area is unstable:

A. On-site or local rock or soil conditions that may result in failure or significant differential settling;

B. On-site or local geologic or geomorphologic features; and

C. On-site or local man-made features or events (both surface and subsurface).

7. Endangered species. CCR surface impoundments shall not—

A. Cause or contribute to the taking of any endangered or threatened species of plants, fish, or wildlife listed in section 4 of the Endangered Species Act; or

B. Result in the direct or indirect alteration of critical habitat which appreciably diminishes the likelihood of the survival and recovery of threatened or endangered species using that habitat of endangered or threatened species as identified in 50 CFR part 17.

8. Surface water. CCR surface impoundments shall operate in accordance with the Missouri Clean Water Law, corresponding rules, and permits and shall not—

A. Cause a discharge of pollutants into waters of the United States that is in violation of the requirements of the National Pollutant Discharge Elimination System (NPDES) under section 402 by the U.S. Environmental Protection Agency;

B. Cause a discharge of dredged material or fill material to waters of the United States that is in violation of the requirements under section 404; and

C. Cause non-point source pollution of waters of the United States that violates applicable legal requirements implementing an area-wide or statewide water quality management plan that has been approved by the administrator under section 208.

9. An owner/operator of a CCR surface impoundment may submit to the department for review and approval alternative location restrictions or requirements other than those listed in (3)(B)4., 5., and 6. if the owner/operator establishes through technical analysis and an engineering demonstration that adverse effects are not reasonably probable given the design, construction, and/or operation of the CCR surface impoundment in such location.

(4) Plans for new CCR surface impoundments shall include:

(A) A map showing initial and proposed topographies at contour intervals of five feet (5') or less having a scale of not less than one inch (1") equal to one hundred feet (100'). If the entire site cannot be illustrated on one (1) plan sheet, additional plan sheets should be included with appropriate horizontal and vertical scales in addition to the full site map;

(B) A map having a scale of not less than one inch (1") equals four hundred feet (400') identifying the land use and zoning within one-fourth (1/4) mile of the CCR surface impoundment including location of all residences, buildings, wells, water courses, springs, lakes, rock outcroppings, caves, sinkholes, and soil or rock borings. All electric, gas, water, sewer, and other utility easements or lines that are located on, under, or over the CCR surface impoundment shall be shown on the map;

(C) A description of the projected use of the closed CCR surface impoundment. In addition to maintenance programs and provisions, where necessary for monitoring and controlling leachate, the plans shall specify appropriate design, construction, and operating provisions for the CCR surface impoundment to complement the projected future use;

(D) An evaluation of the characteristics and quantity of available on-site soil with respect to its suitability for CCR surface impoundment operations. The engineering properties and quantity estimates of the on-site soil shall be discussed and shall include:

1. Texture. Sieve and hydrometer analyses shall be performed to determine grain size distribution of representative soil samples. Texture may be determined by using the procedures described in ASTM method D422-63(2007) (ASTM International, 100 Barr Harbor, West Conshohocken, PA 19428 Publication date 2007);

2. Plasticity. The liquid limit, plastic limit, and plasticity index of representative soil samples shall be determined. Plasticity may be determined by using the procedures described in ASTM method D4318-17 (ASTM International, 100 Barr Harbor, West Conshohocken, PA 19428 Publication date 2017);

3. Hydraulic conductivity. Laboratory hydraulic conductivity tests shall be performed upon undisturbed representative soil samples using a flexible wall permeameter as described in ASTM D-5084-16 (ASTM International, 100 Barr Harbor, West Conshohocken, PA 19428 Publication date 2016). If an aquifer is found to be laterally continuous across the anticipated limit of the proposed CCR surface impoundment, the hydraulic conductivity of each significant continuous geologic unit must be determined. Examples of accepted field tests are in situ slug or pump tests, which isolate the geologic unit of interest; and

4. Areal extent and depth. The areal extent and depth of soil suitable for CCR surface impoundment construction shall be determined, clearly describing variations in soil depth; and

(E) A demonstration by the owner/operator of a proposed CCR surface impoundment of how adverse geologic and hydrologic conditions may be altered or compensated for via surface water drainage diversion, underdrains, sumps, and other structural components. All alterations of the site shall be detailed in the plans. Precipitation, evapotranspiration, and climatological conditions shall be considered in site selection and design.

(5) Design.

(A) Plans, addendums, as-built drawings, or other documents which describe the design, construction, operation, or closure of a CCR surface impoundment or which request a design modification for the CCR surface impoundment shall:

1. Be prepared, sealed, and signed by the professional engineer and submitted to the department for review and approval;

2. Contain a minimum of a one hundred foot (100')-buffer zone between the CCR surface impoundment operations and any property line(s) or any right(s) of way of adjoining road(s) when the property line(s) is inside the right(s) of way to provide for assessment and/or remedial actions;

3. Consider precipitation, evapotranspiration, and climatological conditions in site selection and design;

4. Include all computer models used in the design and list the limitations and assumptions of each model;

5. Include stability analyses for all stages of construction, as well as all liner and leachate system components, and on all final cover system components, include an evaluation of the effect of waste settlement on the final cover system components, side slope liner system components, and surface water management system components;

6. Perform settlement and bearing capacity analyses on the in-place foundation material beneath the disposal area;

7. Analyze the effect of foundation material settlement on the liner and leachate collection systems;

8. Analyze leachate collection pipe material and drainage media to demonstrate that these components possess structural strength to support maximum loads imposed by overlying waste materials and equipment; and

9. Include phase development drawings.

(B) Liner system requirement. A composite liner shall be placed on all surfaces to minimize the migration of leachate from the CCR surface impoundment. A composite liner shall be required at all CCR surface impoundments applying for a construction permit after the effective date of this rule that includes:

1. A composite liner must consist of two (2) components: the upper component consisting of, at a minimum, a 30-mil geomembrane liner (GM), and the lower component consisting of at least a two-foot (2') layer of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} centimeters per second (cm/sec). GM components consisting of high-density polyethylene (HDPE) must be at least 60-mil thick. The GM or upper liner component must be installed in direct and uniform contact with the compacted soil or lower liner component. The compacted soil liner component at a minimum shall be—

A. Constructed of six to eight-inch (6 - 8") lifts;

B. Compacted to ninety-five percent (95%) of standard Proctor density with the moisture content between optimum moisture content and four percent (4%) above the optimum moisture content, or within other ranges of density and moisture such that are shown to provide for the liner to have a hydraulic conductivity no more than 1×10^{-7} cm/sec.;

C. Protected from the adverse effects of desiccation or freeze/thaw cycles after construction, but prior to placement of waste;

D. Soils used for this purpose shall meet the following minimum specifications:

(I) Be classified under the Unified Soil Classification Systems as CL, CH, or SC (ASTM Test D2487-11 ASTM International, 100 Barr Harbor, West Conshohocken, PA 19428 Publication date 2011);

(II) Allow more than thirty percent (30%) passage through a No. 200 sieve (ASTM Test D1140-17 ASTM International, 100 Barr Harbor, West Conshohocken, PA 19428 Publication date 2017);

(III) Have a liquid limit equal to or greater than twenty (20) (ASTM Test D4318-17 ASTM International, 100 Barr Harbor, West Conshohocken, PA 19428 Publication date 2017);

(IV) Have a plasticity index equal to or greater than ten (10) (ASTM Test D4318-17 ASTM International, 100 Barr Harbor, West Conshohocken, PA 19428 Publication date 2017);

(V) Have a minimum bottom slope in any direction of flow of at least one percent (1%); and

E. Constructed of materials that:

(I) Have appropriate chemical properties and sufficient strength and thickness to prevent failure due to: pressure gradients (including static head and external hydrogeologic forces), physical contact with the CCR or leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation;

(II) Provide appropriate shear resistance of the upper and lower component interface to prevent sliding of the upper component including on slopes;

(III) Are placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression, or uplift; and

(IV) Are installed to cover all surrounding earth likely to be in contact with the CCR or leachate.

2. A test pad shall be constructed at the site and tested to verify that the proposed soils, construction, and quality assurance/quality control (QA/QC) procedures are adequate to ensure that the soil component of the composite liner system will meet the requirements listed above.

A. Construction and QA/QC procedures to be used during test pad construction shall be described in detail in the approved engineering report, and shall be identical to those proposed for liner construction with the following additions:

(I) At least two (2) laboratory hydraulic conductivity tests shall be performed on undisturbed samples of the completed test pad;

(II) At least one (1) in-situ hydraulic conductivity test (i.e. Boutwell) shall be performed on the completed test pad; and

(III) At least two (2) test pits shall be excavated into the completed test pad to observe inter-lift bonding.

B. If test pad construction and testing shows that the proposed methods are not sufficient to meet the requirements of this rule, a new test pad shall be constructed using revised procedures approved by the department.

C. For phased construction, only one (1) test pad will be required for a particular soil source and type, and equipment type.

D. A final report shall be submitted to the department, which describes in detail the construction and QA/QC procedures, which were used to achieve satisfactory test pad performance.

(I) The report must be approved by the department prior to beginning construction of any portion of the composite liner system in the disposal area.

(II) The report shall serve as guidance for construction of the soil component of the composite liner system.

E. The requirement for a test pad may be waived provided the applicant can demonstrate to the department's satisfaction the construction and QA/QC procedures are identical to those described in the approved engineering report and will result in construction of a liner which meets the requirements of this rule, and the soils proposed for liner construction meet the following minimum specifications:

(I) Have a plasticity index greater than fifteen (15) and less than thirty (30) (ASTM test D4318-17 ASTM International, 100 Barr Harbor, West Conshohocken, PA 19428, Publication date 2017);

(II) Allow more than fifty percent (50%) passage through a number two hundred (200) sieve (ASTM D1140-17 ASTM International, 100 Barr Harbor, West Conshohocken, PA 19428, Publication date 2017); and

(III) Have less than ten percent (10%) by weight particle sizes greater than two (2) millimeters.

(C) Alternative composite liners. An alternative composite liner shall meet all of the following requirements:

1. An alternative composite liner must consist of two (2) components: the upper component consisting of, at a minimum, a 30-mil GM, and a lower component, that is not a geomembrane, with a liquid flow rate no greater than the liquid flow rate of two feet (2') of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec. GM components consisting of HDPE must be at least 60-mil thick. If the lower component of the alternative liner is compacted soil, the GM must be installed in direct and uniform contact with the compacted soil;

2. The owner/operator must obtain certification from a professional engineer that the liquid flow rate through the lower component of the alternative composite liner is no greater than the liquid flow

rate through two feet (2') of compacted soil with a hydraulic conductivity of 1×10^{-7} cm/sec. The hydraulic conductivity for the two feet (2') of compacted soil used in the comparison shall be no greater than 1×10^{-7} cm/sec. The hydraulic conductivity of any alternative to the two feet (2') of compacted soil must be determined using recognized and generally accepted methods. The liquid flow rate comparison must be made using Equation 1 of this section, which is derived from Darcy's Law for gravity flow through porous media.

(Eq. 1) $$\frac{Q}{A} = q = k\left(\frac{h}{t} + 1\right)$$

Where,

Q = flow rate (cubic centimeters/second);

A = surface area of the liner (squared centimeters);

q = flow rate per unit area (cubic centimeters/second/squared centimeter);

k = hydraulic conductivity of the liner (centimeters/second);

h = hydraulic head above the liner (centimeters); and

t = thickness of the liner (centimeters); and

3. The alternative composite liner must meet the performance requirements specified in parts (5)(B)1.E.(I) through (IV).

(6) Quality Assurance/Quality Control. The construction, operation, and closure of the CCR surface impoundment shall include QA/QC measures to ensure compliance with approved plans and all applicable federal, state, and local requirements. The owner/operator shall be responsible for ensuring that the QA/QC supervision is conducted by a qualified professional.

(A) Plans shall include a detailed description of the QA/QC testing procedures that will be used for every major phase of construction. The description must include at a minimum, the frequency of inspections, field testing, laboratory testing, equipment to be utilized, the limits for test failure, a description of the procedures to be used upon test failure, and a detailed procedure for the reporting and recording of QA/QC activities and testing results; and

(B) For the following components:

1. Liner. The liner specified by section (5) of this rule shall be constructed in accordance with the approved design specifications. The QA/QC procedures shall include:

A. Evidence that the liner material(s) utilized meet the minimum design specifications;

B. Evidence that field construction techniques are resulting in the minimum design specifications (for example, soil density tests);

C. Evidence that the liner construction is proceeding as designed through regular verification using a predetermined system of horizontal and vertical survey controls; and

D. Oversight of the liner construction and QA/QC procedures by a professional engineer. This shall include reports prepared, or approved, by the professional engineer transmitting the results of the QA/QC procedures and stating that the liner was constructed according to design or describing any deviations from the design.

2. All QA/QC reports shall be reviewed and approved by a professional engineer.

(C) At a minimum QA/QC testing shall include:

1. Testing of each lift of the soil component of the final cover and CCR surface impoundment liner for field density and field moisture once per every ten thousand square feet (10,000 ft^2) and providing relatively uniform coverage over the CCR surface impoundment surface;

2. Laboratory hydraulic conductivity testing of the soil used for liner construction once for every five thousand cubic yards (5,000 yds^3) of liner constructed;

3. Continuous visual classification of borrow soil during CCR surface impoundment construction by qualified QA/QC inspector(s) or certifying professional engineer; and

4. Measuring the elevations of the final cover and the CCR surface impoundment liner on a maximum spacing of one hundred foot (100') centers and at one hundred foot (100') intervals along each line where a break in slope occurs.

A. CCR surface impoundment liner. Measuring the elevations of the top and bottom of the CCR surface impoundment liner;

B. Final cover. Measuring the elevations of the top and bottom of the CCR surface impoundment cover:

(I) The compacted clay layer; and

(II) The soil layer supporting vegetative growth.

5. For a geomembrane:

A. Nondestructive testing of all seams of the geomembrane in the CCR surface impoundment liner; and

B. Random destructive testing of the seams of the geomembrane liner in the CCR surface impoundment liner on an average frequency of at least one (1) every five hundred (500) linear feet of seams.

6. All testing shall be performed under the direction of qualified QA/QC inspectors for every major phase of construction.

(7) Structural integrity criteria for new and existing CCR surface impoundments.

(A) Periodic hazard potential classification assessments. The owner/operator of the CCR surface impoundment must submit the initial and conduct periodic hazard potential classification assessments no less than every five (5) years. The owner/operator must document both the classification of, and basis for, each CCR surface impoundment as either a high hazard, significant hazard, or a low hazard potential CCR surface impoundment.

(B) Emergency Action Plan (EAP).

1. For CCR surface impoundments categorized as either a high hazard or a significant hazard potential CCR surface impoundment, the owner/operator must prepare, maintain, and amend as necessary a written EAP in the operating record. At a minimum, the EAP must:

A. Define the events or circumstances involving the CCR surface impoundment that represent a safety emergency, along with a description of the procedures that will be followed to detect a safety emergency in a timely manner;

B. Define responsible persons, their respective responsibilities, and notification procedures in the event of a safety emergency involving the CCR surface impoundment;

C. Provide contact information of emergency responders;

D. Document an annual face-to-face meeting or exercise between representatives of the owner/operator of the CCR surface impoundment and local emergency responders;

E. Include a map which delineates the downstream area which would be affected in the event of a CCR surface impoundment failure and a physical description of the CCR surface impoundment.

2. Amendment of the plan.

A. The owner/operator must amend the written EAP whenever there is a change in conditions that would substantially affect the EAP in effect.

B. The written EAP must be evaluated, at a minimum, every five (5) years to ensure the information required in paragraph (7)(B)1. is accurate.

(C) Changes in hazard potential classification.

1. If during a periodic hazard potential assessment, the owner/operator determines that the CCR surface impoundment high hazard or a significant hazard potential classification no longer applies, then the written EAP requirements no longer apply.

2. If a low hazard potential CCR surface impoundment is properly re-classified as either a high hazard potential or significant hazard potential CCR surface impoundment, then the owner/operator must prepare a written EAP for the CCR surface impoundment within six (6) months of completing such periodic hazard potential assessment.

(D) Periodic structural stability assessments. The owner/operator of the CCR surface impoundment must submit the initial and conduct periodic structural stability assessments and document whether the

design, construction, conduct operation, and maintenance of the CCR surface impoundment is consistent with recognized and generally accepted good engineering practices for the maximum volume of CCR wastewater which can be impounded therein. The assessment must, at a minimum, document whether the CCR surface impoundment has been designed, constructed, operated, and maintained with—

1. Stable foundations and abutments;

2. Adequate slope protection to protect against surface erosion, wave action, and adverse effects of sudden drawdown;

3. Dikes mechanically compacted to a density sufficient to withstand the range of loading conditions in the CCR surface impoundment;

4. Vegetated slopes of dikes and surrounding areas sufficient to prevent or mitigate erosion, except for slopes which have an alternate form or forms of slope protection;

5. A single spillway or a combination of spillways. The combined capacity of all spillways must be designed, constructed, operated, and maintained to adequately manage flow during and following the peak discharge from a one hundred (100)-year, one thousand (1,000)-year or probable maximum flood event, depending upon the CCR surface impoundment's hazard classification;

6. Spillways that are either—

A. Of non-erodible construction and designed to carry sustained flows; or

B. Earth or grass-lined and designed to carry short-term, infrequent flows at non-erosive velocities where sustained flows are not expected.

7. Spillways with a combined capacity that adequately manages flow during and following the peak discharge from a:

A. Probable maximum flood (PMF) for a high hazard potential CCR surface impoundment;

B. One thousand (1,000)-year flood for a significant hazard potential CCR surface impoundment; or

C. One hundred (100)-year flood for a low hazard potential CCR surface impoundment;

8. Hydraulic structures underlying the base of the CCR surface impoundment or passing through the dike of the CCR surface impoundment that maintain structural integrity and are free of significant deterioration, deformation, distortion, bedding deficiencies, sedimentation, and debris which may negatively affect the operation of the hydraulic structure; and

9. For CCR surface impoundments with downstream slopes which can be inundated by the pool of an adjacent water body, such as a river, stream or lake, downstream slopes that maintain structural stability during low pool of the adjacent water body or sudden drawdown of the adjacent water body.

10. The periodic assessment must identify any structural stability deficiencies associated with the CCR surface impoundment in addition to recommending corrective measures. If a deficiency or a release is identified during the periodic assessment, the owner/operator of the CCR surface impoundment must remedy the deficiency or release as soon as feasible and prepare documentation detailing the corrective measures taken.

(E) Periodic safety factor assessments. The owner/operator must submit the initial and conduct periodic safety factor assessments no less than every five (5) years for each CCR surface impoundment and document whether the calculated factors of safety for each CCR surface impoundment achieve the minimum safety factors specified for the critical cross section of the embankment anticipated to be the most susceptible to structural failure based on appropriate engineering considerations, including loading conditions. The safety factor assessments must be supported by appropriate engineering calculations. The calculated static factor of safety under the long-term, maximum storage pool loading condition must equal or exceed 1.50.

1. The calculated static factor of safety under the maximum surcharge pool loading condition must equal or exceed 1.40.

2. The calculated seismic factor of safety must equal or exceed 1.00.

3. For dikes constructed of soils that have susceptibility to liquefaction, the calculated liquefaction factor of safety must equal or exceed 1.20.

(F) Inflow design flood control system plan. The owner/operator must design, construct, operate an initial, and maintain a periodic inflow design flood control system plan no less than every five (5) years for each CCR surface impoundment that:

1. Adequately manages flow into the CCR surface impoundment during and following the peak discharge of the inflow design flood.

2. Adequately manages flow from the CCR surface impoundment to collect and control the peak discharge resulting from the inflow design flood.

3. The inflow design flood is—

A. For a high hazard potential CCR surface impoundment;

B. For a significant hazard potential CCR surface impoundment;

C. For a low hazard potential CCR surface impoundment; or

D. For an incised CCR surface impoundment, the twenty-five (25)-year flood.

(8) Survey Control. Benchmarks, horizontal controls, and boundary markers shall be established and maintained by a registered land surveyor to check and mark the location and elevations of the CCR surface impoundment ensuring compliance with design plans, phasing plans, and applicable conditions within the approved construction permit. At a minimum, a survey of the entire permitted acreage shall be conducted in accordance with the current Missouri Standards for Property Boundary Surveys, 2 CSR 90-60, and identify the permanent monument used as a benchmark. All site information must be reported in the State Plane Coordination System.

(9) Run-on and Run-off Controls. All Water Protection Program permits and approvals necessary to comply with requirements of the Missouri Clean Water Law and corresponding rules shall be obtained from the department.

(A) The owner/operator of an existing or new CCR surface impoundment or any lateral expansion must design, construct, operate, and maintain—

1. A run-on control system to prevent flow onto the active portion of the CCR surface impoundment during the peak discharge from a twenty-four (24)-hour, twenty-five (25)-year storm; and

2. On-site drainage, collection, and control structures and channels shall be designed to accommodate at a minimum the stormwater volume from a twenty-four (24)-hour, twenty-five (25)-year storm. The engineering calculations and assumptions shall be included and explained in the engineering report submitted to the department.

(B) The quantity of water coming in contact with solid waste shall be minimized by the daily operational practices. Water, which comes in contact with the waste, shall be managed as leachate in accordance with the approved plans. Stormwater runoff from the CCR surface impoundment shall be controlled on-site and not be allowed to discharge off the CCR surface impoundment property or discharge into the waters of the state, except in accordance with the approved plans and the Missouri Clean Water Law and corresponding rules.

(10) Groundwater Monitoring.

(A) The owner/operator of a CCR surface impoundment shall implement a groundwater monitoring program capable of determining the impact on the quality of groundwater underlying the CCR surface impoundment. The downgradient monitoring system must be installed at the relevant point of compliance specified by the department. When physical obstacles preclude installation of groundwater monitoring wells at the relevant point of compliance, the downgradient monitoring system may be installed at the closest practicable distance hydraulically downgradient specified by the department that ensures detection of groundwater contamination in the uppermost

aquifer.

1. All CCR surface impoundments permitted after the effective date of this rule must be in compliance with all groundwater monitoring requirements of this section.

2. All CCR surface impoundments constructed and operated prior to the effective date of this rule, but that did not certify closure prior to October 19, 2015, must comply with this section.

3. The owner/operator of a CCR surface impoundment shall establish the potential for migration of fluid generated by the CCR surface impoundment into the groundwater by an evaluation of—

A water balance of precipitation, evapotranspiration, runoff, and infiltration; and

B. At a minimum, the following characteristics:

(I) Geologic materials;

(II) Description of soil and bedrock to a depth adequate to allow evaluation of water quality protection provided by the soil and bedrock;

(III) Groundwater elevation;

(IV) Proposed separation between the lowest point of the lowest cell and the maximum water table elevation;

(V) Proximity of the CCR surface impoundment to water supply wells or surface water;

(VI) Rate and direction of groundwater flow; and

(VII) Current and projected use of water resources in the potential zone of influence of the CCR surface impoundment.

4. Groundwater monitoring wells shall be installed based upon site specific technical information that considers the following when determining the number, spacing, and depths of monitoring systems:

A. Aquifer thickness, groundwater flow rate, groundwater flow direction including seasonal and temporal fluctuations in groundwater flow; and

B. Saturated and unsaturated geologic units and fill materials overlying the uppermost aquifer, materials comprising the uppermost aquifer, and materials comprising the confining unit defining the lower boundary of the uppermost aquifer including, but not limited to, thicknesses, stratigraphy, lithology, hydraulic conductivities, and porosities.

5. Groundwater monitoring well locations shall be based on site specific technical information and be capable of yielding groundwater samples for analysis, effectively monitor the site, and shall consist of at least one (1) well installed hydraulically upgradient; that is, in the direction of increasing static head from the CCR surface impoundment and at least three (3) wells installed hydraulically downgradient; that is, in the direction of decreasing hydraulic head. The numbers, locations, and depths shall be based on site-specific technical information and be sufficient to yield groundwater samples that:

A. Represents background water quality in the groundwater upgradient of the CCR surface impoundment;

B. Detect any significant amounts of fluids generated by the CCR surface impoundment that migrate from the CCR surface impoundment to the groundwater; and

C. Monitor all saturated zones down to and including the uppermost aquifer.

6. All monitoring wells shall be—

A. Designed, constructed, developed, and decommissioned in accordance with 10 CSR 23-4;

B. Designed and installed under the observation and supervision of a qualified groundwater scientist, who certifies installation, and then approved by the department; and

C. Operational prior to the acceptance of wastes, unless other arrangements are approved by the department.

(B) Sampling and reporting.

1. Each groundwater monitoring program must include consistent sampling and analysis procedures that are designed to ensure monitoring results that provide an accurate representation of groundwater quality at monitoring wells installed in compliance with this section. The owner/operator must submit the sampling and analysis program to the department for approval. The program must include procedures and techniques for:

A. Monitoring well maintenance;

B. Monitoring well redevelopment;

C. Monitoring well depth measurement and hydraulic levels;

D. Monitoring well purging and sampling utilizing dedicated equipment;

E. Equipment calibration;

F. Decontamination and field blanks;

G. Sample collection;

H. Sample preservation;

I. Sample labeling;

J. Sample handling;

K. Field measurements;

L. Field documentation;

M. Chain of custody control;

N. Sample shipment;

O. Analytical procedures;

P QA/QC control—field and laboratory; and

Q. Statistical testing strategy for each parameter's concentrations.

2. Each groundwater monitoring program shall include sampling and analytical methods that are appropriate for groundwater sampling and that accurately measure hazardous constituents and other monitoring parameters in groundwater samples. Analysis shall be performed on unfiltered samples.

3. The owner/operator shall determine the rate and direction of groundwater flow each time groundwater is sampled. Groundwater elevations in wells that monitor the same CCR surface impoundment shall be measured within a period of time short enough to avoid temporal variations in groundwater flow, which could preclude an accurate determination of groundwater flow rate and direction.

4. Each groundwater monitoring program shall include: a map, aerial image, or diagram showing the CCR surface impoundment and all background (or upgradient) and downgradient monitoring wells, to include the well identification numbers that are part of the groundwater monitoring program for the CCR surface impoundment.

5. Suspension of groundwater monitoring requirements.

A. The department may suspend or modify in whole or in part for up to ten (10) years the groundwater monitoring requirements for a CCR surface impoundment if the owner/operator provides written documentation that there is no potential for risk to human health or the environment or migration of the constituents listed in Appendices I and II to this section during the active life of the CCR surface impoundment and the post-closure care period. In making this decision to suspend groundwater monitoring requirements in whole or in part and in making remedy decisions, the department may consider the impact of activity and use limitations that have been placed on the property and any affected off-site area. This demonstration must be certified by a qualified professional engineer and approved by the department, and must be based upon—

(I) Site-specific field collected measurements, sampling, and analysis of physical, chemical, and biological processes affecting contaminant fate and transport; and

(II) Contaminant fate and transport predictions that maximize contaminant migration and consider impacts on potential receptors.

(C) Background monitoring. The owner/operator shall establish background groundwater quality for each of the monitoring parameters or constituents required in Appendix I and Appendix II. To establish background, a minimum of eight (8) samples of statistically independent sample data shall be obtained and analyzed from all monitoring wells. Additional background samples may be required based upon the statistical methodology used.

(D) Detection monitoring.

1. The owner/operator shall obtain and analyze water samples from the groundwater monitoring wells during the months of May and November of each calendar year for Appendix I constituents

unless an alternative schedule is approved by the department.

2. The water level in each well shall be measured at the time the sample is taken.

3. The sample results must be submitted electronically in a format specified by the department, and any results of statistical analysis determining a statistically significant increase (SSI) for any parameter shall be submitted to the department in one (1) report within ninety (90) days of when samples are collected, unless the department approves an alternative schedule.

4. In the case of all detection monitoring requirements previously listed, the department may specify an appropriate alternative frequency for repeated sampling and analysis during the active life of the CCR surface impoundment, including during the closure and post-closure periods. The alternative frequency during the active life including closure shall be no less than annual. The alternative frequency shall be based on consideration of the following factors:

A. Lithology of the aquifer and unsaturated zone;

B. Hydraulic conductivity of the aquifer and unsaturated zone;

C. Groundwater flow rates;

D. Minimum distance between the upgradient edge of the CCR surface impoundment and the downgradient monitoring well screen (minimum distance of travel); and

E. Resource value of the aquifer.

5. If the owner/operator determines, pursuant to subsection (10)(E), that there is a SSI over background for one or more of the constituents listed in Appendix I, the owner/operator:

A. Must, within fourteen (14) days of this finding, notify the department indicating which constituents have shown statistically significant changes from background levels; and

B. Must establish an assessment monitoring program meeting the requirements of subsection (10)(F) within ninety (90) days except as provided for in subparagraph (10)(D)6.

6. May demonstrate that a source other than the CCR surface impoundment caused the contamination or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. A report documenting this demonstration must be certified by a qualified groundwater scientist and submitted to the department for review and approval. If a successful demonstration is made and documented, the owner/operator may continue detection monitoring as specified in this subsection. If, after ninety (90) days, a successful demonstration is not made, the owner/operator must initiate an assessment monitoring program as specified in subsection (10)(F).

(E) Statistical method. The owner/operator shall specify one (1) or more statistical method(s) to be used in evaluating groundwater monitoring data for each monitoring constituent.

1. The statistical method used to evaluate groundwater monitoring data shall be appropriate for the distribution of the concentration data for the chemical parameters or hazardous constituents and approved by the department. If the distribution of the concentration data for the chemical parameters or hazardous constituents is shown by the owner/operator to be inappropriate for a normal data distribution theory test, then the data should be transformed or a distribution-free (nonparametric) theory test should be used. If the concentration data distributions for the constituents of each well differ, more than one (1) statistical method will be needed.

2. If an individual well comparison procedure is used to compare an individual compliance well constituent concentration with background constituent concentration or a groundwater protection standard, as defined below in paragraph (10)(F)7., the test shall be done at a Type I error rate no less than 0.01 for each testing period. If a multiple comparisons procedure is used, the Type I experiment-wide error rate for each testing period shall be no less than 0.05, however, the Type I error rate of no less than 0.01 for individual well comparisons shall be maintained. This performance standard does not apply to tolerance intervals, prediction intervals, or control charts.

3. If a control chart approach is used to evaluate groundwater monitoring data, the specific type of control chart and its associated parameter values shall be protective of human health and the environment. The selection of this method shall be determined after considering the number of samples in the background database, the data distribution, and the range of the concentration values for each constituent of concern.

4. If a confidence interval, tolerance interval, or a prediction interval is used to evaluate groundwater monitoring data, then the level of confidence for each interval, and the percentage of the population that each interval contains, shall be protective of human health and the environment. Selection of one (1) or more of these methods shall be determined after considering the number of samples in the background database, the data distribution, and the range of the concentration values for each constituent of concern.

5. The statistical method shall account for data below the limit of detection with one (1) or more statistical procedures that are protective of human health and the environment. Any practical quantization limit that is used in the statistical method shall be the lowest concentration level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions that are available to the facility.

6. If necessary, the statistical method shall include procedures to control or correct for seasonal and spatial variability as well as temporal correlation in the data.

(F) Response to statistical analysis/assessment monitoring.

1. Assessment monitoring is required whenever a SSI over background levels has been detected for one (1) or more of the constituents listed in Appendix I.

2. Within ninety (90) days of triggering an assessment monitoring program, and annually thereafter, the owner/operator of the CCR surface impoundment must sample and analyze the groundwater for all constituents listed in Appendix II of this rule. The number of samples collected and analyzed for each well during each sampling event must be consistent with subsection (10)(B), and must account for any unique characteristics of the site, but must include at least one (1) sample from each well.

3. The owner/operator of a CCR surface impoundment may submit to the department for review and approval a demonstration for an alternative monitoring frequency for repeated sampling and analysis for constituents listed in Appendix II during the active life and the post-closure care period based on the availability of groundwater. If there is not adequate groundwater flow to sample wells semiannually, the alternative frequency shall be no less than annual. The need to vary monitoring frequency must be evaluated on a site-specific basis. The demonstration must be supported by, at a minimum, the following information:

A. Information documenting the need for less frequent sampling. The alternative frequency must be based on consideration of the following factors:

(I) Lithology of the aquifer and unsaturated zone;

(II) Hydraulic conductivity of the aquifer and unsaturated zone; and

(III) Groundwater flow rates;

B. Information documenting that the alternative frequency will be no less effective in ensuring that any leakage from the CCR surface impoundment will be discovered within a timeframe that will not materially delay the initiation of any necessary remediation measures; and

C. The owner/operator must obtain a certification from a professional engineer and submit it to the department for review and approval, stating that the demonstration for an alternative groundwater sampling and analysis frequency meets the requirements of this section. The owner/operator must include the demonstration providing the basis for the alternative monitoring frequency and the certification by a professional engineer in the annual groundwater monitoring and corrective action report required by section (10).

4. After obtaining the results from the initial and subsequent

sampling events required in paragraph (10)(F)2., the owner/operator must—

A. Within ninety (90) days of obtaining the results, and on at least a semiannual basis thereafter, resample all wells that were installed pursuant to the requirements of section (10), conduct analyses for all constituents in Appendix I and for those constituents in Appendix II that are detected in response to subparagraph (10)(F)4.B. submit the sampling and analysis to the department for review and approval and record their concentrations in the facility operating record. The number of samples collected and analyzed for each background well and downgradient well during subsequent semiannual sampling events must be consistent with subsection (10)(D), and must account for any unique characteristics of the site, but must include at least one (1) sample from each background and downgradient well;

B. Establish groundwater protection standards for all constituents detected pursuant to paragraph (10)(F)2. or subparagraph (10)(F)4.A. The groundwater protection standards must be established in accordance with paragraph(10)(F)8.; and

C. Include the recorded concentrations required by paragraph (10)(F)8. identify the background concentrations established under subsection (10)(C), and identify the groundwater protection standards established under subparagraph (10)(F)4.B. in the annual groundwater monitoring and corrective action report. The owner/operator must submit the annual groundwater monitoring and corrective action report to the department for review and approval.

5. If the concentrations of all constituents listed in Appendices I and II are shown to be at or below background values, using the statistical procedures in subsection (10)(E), for two (2) consecutive sampling events, the owner/operator may return to detection monitoring of the CCR surface impoundment. The owner/operator must prepare and submit a notification to the department for review and approval requesting that detection monitoring resume for the CCR surface impoundment. The owner/operator has completed the notification when the approved notification is placed in the facility's operating record.

6. If the concentrations of any constituent in Appendices I and II are above background values, but all concentrations are below the groundwater protection standard established under paragraph (10)(F)8. using the statistical procedures in subsection (10)(E), the owner/operator must continue assessment monitoring in accordance with this section.

7. If one (1) or more constituents in Appendix II of this rule are detected at statistically significant levels above the groundwater protection standard established under paragraphs (10)(F)4. and 8. in any sampling event, the owner/operator must prepare a notification identifying the constituents in Appendix II to this rule that have exceeded the groundwater protection standard. The owner/operator has completed the notification when the notification is submitted to the department for approval and the approved notification is placed in the facility's operating record. The owner/operator of the CCR surface impoundment also must—

A. Characterize the nature and extent of the release and any relevant site conditions that may affect the remedy ultimately selected. The characterization must be sufficient to support a complete and accurate assessment of the corrective measures necessary to effectively clean up all releases from the CCR surface impoundment pursuant to section (11). Characterization of the release includes the following minimum measures:

(I) Install additional monitoring wells necessary to define the contaminant plume(s);

(II) Collect data on the nature and estimated quantity of material released including specific information on the constituents listed in Appendix II of this rule and the levels at which they are present in the material released;

(III) Install at least one (1) additional monitoring well at the facility boundary in the direction of contaminant migration and sample this well in accordance with subparagraph (10)(F)4.A.; and

(IV) Sample all wells in accordance with subparagraph (10)(F)4.A. to characterize the nature and extent of the release;

B. Notify all persons who own the land or reside on the land that directly overlies any part of the plume of contamination if contaminants have migrated off site if indicated by sampling of wells in accordance with subparagraph (10)(F)7.A. The owner/operator has completed the notifications when they are submitted to the department for approval and the approved notification is placed in the facility's operating record;

C. Within ninety (90) days of finding that any of the constituents listed in Appendix II to this rule have been detected at a statistically significant level exceeding the groundwater protection standards must either—

(I) Initiate an assessment of corrective measures as required by subsection (11)(A); or

(II) Demonstrate that a source other than the CCR surface impoundment caused the contamination, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Any such demonstration must be supported by a report that includes the factual or evidentiary basis for any conclusions and must be certified to be accurate by a professional engineer. If a successful demonstration is made to the department, the owner/operator must continue monitoring in accordance with the assessment monitoring program pursuant to this section, and may return to detection monitoring if the constituents in Appendices I and II of this rule are at or below background as specified in paragraph (10)(F)5. The owner/operator must also include the demonstration in the annual groundwater monitoring and corrective action report submitted to the department for review and approval in addition to the certification by a professional engineer; and

D. If a successful demonstration has not been made at the end of the ninety (90)-day period provided by part (10)(F)7.C.(II), initiate the assessment of corrective measures requirements under subsection (11)(A).

E. If an assessment of corrective measures is required under subsection (11)(A). by either part (10)(F)7.C.(I) or subparagraph (10)(F)7.D., then the CCR surface impoundment is subject to the closure requirements under 40 CFR 257.101(a) to retrofit or close. In addition, the owner/operator must prepare a notification stating that an assessment of corrective measures has been initiated.

8. The owner/operator of the CCR surface impoundment must establish a groundwater protection standard for each constituent in Appendix II of this rule detected in the groundwater. The groundwater protection standard shall be—

A. For constituents for which a maximum contaminant level (MCL) has been established pursuant to the National Primary Drinking Water Regulations 40 CFR 141.62 (June 29, 2004) and 40 CFR 141.66 (December 7, 2000), the MCL for that constituent;

B. For the following constituents:

(I) Cobalt 6 micrograms per liter (μg/l)

(II) Lead 15 μg/l

(III) Lithium 40 μg/l

(IV) Molybdenum 100 μg/l; or

C. For constituents for which the background level is higher than the levels identified under subparagraphs (10)(F)8.A. and B., use the background concentration.

(11) Corrective Action. The owner/operator of a CCR surface impoundment that shows one (1) or more constituents listed in Appendix II of this rule being detected at levels above the groundwater protection standard as established under paragraph (10)(F)8. shall proceed with corrective action measures outlined in subsections (11)(A) through (C) below.

(A) Assessment of corrective measures.

1. Within ninety (90) days of finding that any of the constituents listed in Appendix II of this rule have been detected at a statistically significant level exceeding the groundwater protection standards listed under paragraphs (10)(F)4 and 8., or immediately upon detection

of a release from a CCR surface impoundment, the owner/operator shall initiate an assessment of corrective measures to prevent further releases, to remediate any releases, and to restore the affected area(s) to original conditions. This assessment of corrective measures shall be completed within ninety (90) days, unless the owner/operator demonstrates the need for additional time to complete the assessment of corrective measures due to site-specific conditions or circumstances. The owner/operator must obtain a certification from a professional engineer attesting that the demonstration is accurate. The ninety (90)-day deadline to complete the assessment of corrective measures may be extended by the department for no longer than sixty (60) days. The owner/operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by subsection (10)(D), in addition to the certification by a professional engineer. Further, a report describing the assessment of corrective measures shall be submitted to the department for review and approval.

2. The owner/operator shall continue to monitor in accordance with the assessment monitoring program as specified in paragraph (10)(F)2.

3. The assessment shall include an analysis of the effectiveness of potential corrective measures in meeting all of the requirements and objectives of the remedy as described in this rule, addressing at least the following:

A. The performance, reliability, ease of implementation, and potential impacts of appropriate potential remedies, including safety impacts, cross-media impacts, and control of exposure to any residual contamination;

B. The time required to begin and complete the remedy; and

C. The institutional requirements such as state or local permit requirements or other environmental or public health requirements that may substantially affect implementation of the remedy(ies).

4. The owner/operator must place the completed assessment of corrective measures in the facility's operating record and submit to the department for review and approval. The assessment has been completed when it is approved by the department.

5. The owner/operator shall discuss the results of the corrective measures assessment at least thirty (30) days prior to the selection of remedy, in a public meeting with interested and affected parties.

(B) Selection of remedy.

1. The department may determine that remediation of a release of a constituent listed in Appendix II from a CCR surface impoundment is not necessary if the owner/operator demonstrates to the satisfaction of the department that—

A. The groundwater is additionally contaminated by substances that have originated from a source other than a CCR surface impoundment and those substances are present in concentrations such that cleanup of the release from the CCR surface impoundment would provide no significant reduction in risk to actual or potential receptors;

B. The constituent(s) is present in groundwater that—

(I) Is not currently or reasonably expected to be a source of drinking water; and

(II) Is not hydraulically connected with a potential drinking water source to which the constituent(s) is migrating or are likely to migrate in a concentration(s) that would exceed the groundwater protection standards established under paragraph (10)(F)8.;

C. Remediation of the release(s) is technically impracticable; or

D. Remediation results in unacceptable cross-media impacts.

2. Notwithstanding a determination by the department pursuant to paragraph (11)(B)1., the department may require the owner/operator to undertake source control measures or other measures (including closure if triggered) that may be necessary to eliminate or minimize further releases to the groundwater, to prevent exposure to the groundwater, or to remediate the groundwater to concentrations that are technically feasible and significantly reduce threats to human health or the environment.

3. Based on the results of the corrective measures assessment conducted in accordance with subsection (11)(A), the owner/operator must, as soon as feasible, select a remedy that, at a minimum, meets the standards listed in paragraph (11)(B)4. This requirement applies to, not in place of, any applicable standards under the Occupational Safety and Health Act. The owner/operator must prepare a semiannual report describing the progress in selecting and designing the remedy. Upon selection of a remedy, the owner/operator must prepare a final report describing the selected remedy and how it meets the standards specified in paragraph (11)(B)4. and submit this report to the department for review and approval. The owner/operator must obtain a certification from a professional engineer that the remedy selected meets the requirements of this section. The owner/operator shall submit the final report to the department within fourteen (14) days of selecting a proposed remedy. The report is complete once the report is approved by the department and the owner/operator has placed it in the operating record.

4. Remedies shall—

A. Be protective of the public health and the environment;

B. Attain the groundwater protection standard specified in paragraph (10)(F)8.;

C. Control the source(s) of releases so as to reduce or eliminate, to the maximum extent feasible, further releases of constituents listed in Appendix II of this rule into the environment that may pose a threat to human health or the environment;

D. Remove from the environment as much of the contaminated material that was released from the CCR surface impoundment as is feasible, taking into account factors such as avoiding inappropriate disturbance of sensitive ecosystems; and

E. Comply with standards for management of wastes as specified in paragraph (11)(C)3.

5. In selecting a remedy that meets the standards of paragraph (11)(B)4. the owner/operator, and in approving a remedy, the department, shall consider the following evaluation factors:

A. The long- and short-term effectiveness and protectiveness of the potential remedy, along with the degree of certainty that the remedy will prove successful based on consideration of the following:

(I) Magnitude of reduction of existing risks;

(II) Magnitude of residual risks in terms of likelihood of further releases due to waste remaining following implementation of the proposed remedy;

(III) The type and degree of long-term management required, including monitoring, operation, and maintenance;

(IV) Short-term risks that might be posed to the community, workers or the environment during implementation of the remedy, including potential threats to human health and the environment associated with excavation, transportation, redisposal, or containment;

(V) Time until full protection is achieved;

(VI) Potential for exposure of humans and environmental receptors to remaining wastes, considering the potential threat to human health and the environment associated with excavation, transportation, redisposal, or containment;

(VII) Long-term reliability of the engineering and institutional controls; and

(VIII) Potential need for replacement of the remedy;

B. The effectiveness of the remedy in controlling the source to reduce further releases based on consideration of the following factors:

(I) The extent to which containment practices will reduce further releases; and

(II) The extent to which treatment technologies may be used;

C. The ease or difficulty of implementing the potential remedy(ies) based on consideration of the following types of factors:

(I) Degree of difficulty associated with constructing the remedy technology;

(II) Expected operational reliability of the proposed technologies;

(III) Need to coordinate with and obtain necessary approvals and permits from other agencies;

(IV) Availability of necessary equipment and specialists; and

(V) Available capacity and location of needed treatment, storage, and disposal services; and

D. The degree to which community concerns are addressed by the proposed remedy(ies).

6. The owner/operator shall specify as part of the proposed remedy a schedule(s) for initiating, implementing, and completing remedial activities. This schedule must require the completion of remedial activities within a reasonable period of time taking into consideration the factors set forth in subparagraphs (11)(B)6.A. through H. The owner/operator shall consider the following factors in determining, and the department will consider the following factors in approving, the schedule of remedial activities:

A. Extent and nature of contamination as determined by the characterization required pursuant to subsection (10)(F);

B. Reasonable probabilities of remedial technologies in achieving compliance with groundwater protection standards established in paragraph (10)(F)8. and other objectives of the remedy;

C. Availability of treatment or disposal capacity for CCR managed during implementation of the remedy;

D. Desirability of utilizing technologies that are not currently available, but which may offer significant advantages over already available technologies in terms of effectiveness, reliability, safety, or ability to achieve remedial objectives;

E. Potential risks to human health and the environment from exposure to contamination prior to completion of the remedy;

F. Resource value of any affected aquifer including:

(I) Current and future uses;

(II) Proximity and withdrawal rate of users;

(III) Groundwater quantity and quality;

(IV) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to the waste constituent;

(V) The hydrogeologic characteristic of the facility and surrounding land; and

(VI) The availability of alternative water supplies;

G. Practicable capability of the owner/operator; and

H. Other relevant factors.

(C) Implementation of the corrective action program.

1. If required to select a remedy pursuant to subsection (11)(B), the owner/operator must initiate remedial activities within ninety (90) days. Based on the schedule established pursuant to subsection (11)(B) for initiation, implementation, and completion of remedial activities the owner/operator shall—

A. Establish and implement a corrective action groundwater monitoring program that—

(I) At a minimum, meets the requirements of an assessment monitoring program of subsection (11)(F);

(II) Indicates the effectiveness of the corrective action remedy; and

(III) Demonstrates compliance with groundwater protection standards pursuant to paragraph (10)(F)8.;

B. Implement the corrective action remedy selected under subsection (11)(B); and

C. Take any interim measures necessary, any measures determined to be necessary by the department, or both, to reduce the contaminants from leaching from the CCR surface impoundment, and/or potential exposures to human or ecological receptors. Interim measures shall, to the greatest extent feasible, be consistent with the objectives of and contribute to the performance of any remedy that may be required pursuant to subsection (11)(B). The following factors shall be considered by an owner/operator, and will be considered by the department, in determining whether interim measures are necessary:

(I) Time required to develop and implement a final remedy;

(II) Actual or potential exposure of nearby populations or environmental receptors to hazardous constituents listed in Appendix II;

(III) Actual or potential contamination of drinking water supplies or sensitive ecosystems;

(IV) Further degradation of the groundwater that may occur if remedial action is not initiated expeditiously;

(V) Weather conditions that may cause hazardous constituents to migrate or be released;

(VI) Potential for exposure to any of the constituents listed in Appendix II to this rule as a result of an accident or failure of a container or handling system;

(VII) Risks of fire or explosion, or potential for exposure to hazardous constituents as a result of an accident or failure of a container or handling system; and

(VIII) Other situations that may pose threats to human health and the environment.

2. The department may determine, based on information developed after implementation of the remedy has begun or other information, that compliance with requirements of subsection (11)(B). are not being achieved through the remedy selected. In those cases, the owner/operator shall implement other methods or techniques that could feasibly achieve compliance with the requirements. Remedies selected pursuant to subsection (11)(B) shall be considered complete when:

A. The owner/operator complies for three (3) consecutive years with the groundwater protection standards established pursuant to paragraph (10)(F)8. at all points within the plume of contamination that lie beyond the groundwater monitoring well system established pursuant to section (10);

B. Compliance with the groundwater protection standards established pursuant to paragraph (10)(F)8. has been achieved within the plume of contamination that lies beyond the groundwater monitoring well system following a risk assessment, or at a compliance point otherwise established by the department; and

C. All actions required to complete the remedy have been completed.

3. All CCR that are managed pursuant to a remedy required under subsection (11)(B), or an interim measure required under subparagraph (11)(C)1.C. shall be managed in a manner that complies with all applicable Resource Conservation Recovery Act requirements.

4. Upon completion of the remedy, the owner/operator shall submit a certification to the department within fourteen (14) days after the remedy has been completed in compliance with the requirements of subsection (11)(C). The certification shall be signed by the owner/operator and by a professional engineer prior to review and approval by the department. The report has been completed when it is placed in the operating record after department approval.

5. When, upon completion of the certification, the owner/operator and the department determine that the corrective action remedy has been completed in accordance with the requirements under subsection (11)(C), the owner/operator shall be released from the requirements for financial assurance for corrective action.

(12) Air Quality.

(A) The design, construction, and operation of the CCR surface impoundment shall minimize environmental hazards and shall conform to applicable ambient air quality and source control regulations. Fugitive dust control plan. The owner/operator must prepare and operate in accordance with a fugitive dust control plan as specified below:

1. The fugitive dust control plan must identify and describe measures the owner/operator will use to minimize CCR from becoming airborne at the facility. The owner/operator must select, and include in the fugitive dust control plan, measures that are most

appropriate for site conditions, along with an explanation of how the measures selected are applicable and appropriate for site conditions and periodically assess the effectiveness of the control plan.

2. The fugitive dust control plan must include procedures to emplace CCR as conditioned CCR. Conditioned CCR means wetting CCR with water to a moisture content that will prevent wind dispersal, but will not result in free liquids. In lieu of water, CCR conditioning may be accomplished with an appropriate chemical dust suppression agent approved by the department.

3. Amendment of the plan. The owner/operator must amend the written plan whenever there is a change in conditions that would substantially affect the written plan in effect and submit the revised plan to the department for review and approval.

(13) Aesthetics. The CCR surface impoundment shall be designed and operated at all times in an aesthetically acceptable manner. Wastes that are easily moved by wind shall be covered, as necessary, to prevent becoming airborne and scattered. On-site vegetation should be cleared only as necessary. Natural windbreaks, such as green belts, should be maintained where they will improve the appearance and operation of the CCR surface impoundment. Mining operations for the purpose of removing waste for beneficial reuse shall be conducted in such a manner as to not detract from the appearance of the CCR surface impoundment and receive prior approval from the department. All Water Protection Program permits and approvals necessary to comply with the Missouri Clean Water Law and corresponding rules shall be obtained from the department.

(14) Cover.

(A) Cover shall be applied to: minimize infiltration of precipitation, prevent fugitive dust, and provide final cover as outlined below—

1. The permeability of the final cover system must be less than or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than 1×10^{-5} cm/sec, whichever is less;

2. This final cover consists of component layers, in order from top to bottom, as follows:

A. Six inches (6") of soil capable of sustaining vegetative growth;

B. An infiltration layer that contains a minimum of eighteen inches (18") of earthen material, with a coefficient of permeability of 1×10^{-5} cm/sec or less; and

C. Vegetation shall be established within one (1) year of initial seeding or within an alternative schedule approved by the department;

3. The cover system integrity must be maintained throughout the operational and post closure periods;

4. Surface grades and side slopes need to promote maximum runoff, without excessive erosion, and to minimize infiltration. Final side slopes shall not exceed twenty-five percent (25%) unless it has been demonstrated in a detailed slope stability analysis approved by the department that the slopes can be constructed and maintained throughout the entire operational life and post-closure period of the CCR surface impoundment. No active or final slope shall exceed thirty-three and one-third percent (33 1/3%);

5. Procedures to establish and maintain vegetative growth to combat erosion and improve appearance of idle and completed areas. Procedures shall include: seeding rate, fertilizer rate, soil conditioning rate, and provisions for mulching;

6. Procedures to maintain cover integrity, for example, regrading and recovering;

7. Methods for borrow areas to be reclaimed so as to restore aesthetic qualities and prevent excessive erosion;

8. The final slope of the top of the CCR surface impoundment shall have a minimum slope of one percent (1%); and

9. The department may approve the use of an alternative final cover system provided that the owner/operator can demonstrate to the department that the alternative design will be at least equivalent to the final cover system described in this section.

(15) Post-Closure Care Requirements.

(A) Post-closure care maintenance requirements. Following closure of the CCR surface impoundment, the owner/operator must conduct post-closure care for the CCR surface impoundment, which must consist of at least the following:

1. Maintain the integrity and effectiveness of the final cover system, including making repairs to the final cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, and preventing run-on and run-off from eroding or otherwise damaging the final cover;

2. Maintain the integrity and effectiveness of the leachate collection and removal system and operate the leachate collection and removal system in accordance with the approved plans; and

3. Maintain the groundwater monitoring system and monitor the groundwater in accordance with the approved plans.

(B) Post-closure care period.

1. The owner/operator of the CCR surface impoundment must conduct post-closure care for thirty (30) years. However, the post-closure care period may be:

A. Decreased by the department if the owner/operator demonstrates that the reduced period is sufficient to protect human health and the environment and this demonstration is approved by the department; or

B. Increased by the department if determined that the lengthened period is necessary to protect human health and the environment.

2. If at the end of the post-closure care period the owner/operator of the CCR surface impoundment is operating under assessment monitoring then post-closure care shall continue until the owner/operator returns to detection monitoring.

3. Written post-closure plan.

A. Contents of the plan. The owner/operator of a CCR surface impoundment must prepare a written post-closure plan that includes, at a minimum, the information specified below:

(I) A description of the monitoring and maintenance activities required and the frequency at which these activities will be performed;

(II) The name, address, telephone number, and email address of the person or office to contact about the facility during the post-closure care period;

(III) A description of the planned uses of the property during the post-closure period. Post-closure use of the property shall not disturb the integrity of the final cover, liner(s), or any other component of the containment system, or the function of the monitoring systems unless corrective action is necessary as approved by the department; and

(IV) No other disturbance is allowed, unless the owner/operator of the CCR surface impoundment demonstrates that disturbance of the final cover, liner, or other component of the containment system, including any removal of CCR, will not increase the potential threat to human health or the environment. The demonstration must be certified by a professional engineer, and submitted to the department for approval.

B. Amendment of a written post-closure plan. The owner/operator may amend the initial or any subsequent written post-closure plan developed pursuant to approval by the department.

(C) Completion of post closure.

1. No later than sixty (60) days following completion of the post closure care period, the owner/operator of a CCR surface impoundment must submit a notification to the department verifying the post closure care has been completed. The notification must include a certification by a professional engineer verifying that post closure care has been completed in compliance with the post-closure plan specified in this section and 10 CSR 80-2.030.

(16) Safety. The CCR surface impoundment shall be designed, constructed, and operated in a manner so as to protect the health and safety of personnel and others associated with and affected by the operation. Access to the facility must be controlled and appropriate safety equipment required.

(17) Records.

(A) The owner/operator of a CCR surface impoundment shall maintain records and monitoring data as specified by the department in their operating record and file appropriate documents with the county recorder(s) of deeds.

1. Records shall be maintained at the facility site. Records five (5) years old or older may be stored at an alternate site if approved by the department; such stored records must be made available at the CCR surface impoundment upon request of department personnel.

2. An owner/operator with more than one (1) CCR surface impoundment that is subject to the provisions of this rule may comply with the requirements of this section by using a single recordkeeping system provided the system identifies each file by the name of each CCR surface impoundment. The files may be maintained on electronic media accessible by a computer using common software. Records must cover at least the following:

A. Copies of the certifications, notifications, approved plans, and documents;

B. Major operational problems, complaints, and difficulties;

C. Any demonstration, certification, finding, monitoring, testing, or analytical data required under this rule;

D. The current fugitive dust control plan and annual report, as well as dust and litter control efforts;

E. Closure and post-closure care plans and any monitoring, testing, or analytical data; and

F. Records associated with corrective measures.

3. Upon closing of the CCR surface impoundment, the existence of the CCR surface impoundment shall be recorded with the recorder(s) of deeds in the county(ies) where the CCR surface impoundment is located. The owner/operator may request permission from the department to remove the notation from the deed if all wastes are removed from the facility.

A. A survey and plat meeting the requirements of the current Minimum Standards of Property Boundary Survey 2 CSR 90-60 and detailed description of the CCR surface impoundment shall be prepared by a land surveyor. The survey plat and detailed description, at a minimum, shall contain the following information:

(I) The name of the property owner as it appears on the property deed;

(II) The detailed description of the property;

(III) The general types and location of the wastes and the depth(s) of fill within the property; and

(IV) The location of any water monitoring systems, which shall be maintained after closure, and the length of time that these systems are to be maintained.

B. The owner/operator shall—

(I) Obtain approval from the department of the survey plat and detailed description;

(II) Have the plat sealed by a lawful notary public;

(III) File the survey plat and description with the county recorder of deeds within thirty (30) days of department approval; and

(IV) Submit to the department within thirty (30) days of filing, two (2) copies of the sealed and properly recorded survey plat and detailed description showing the recorder of deeds' seal or stamp, the book and page numbers, and the date of filing.

4. The owner/operator of a CCR surface impoundment as a part of closure shall—

A. Execute an easement with the department, which allows the department, its agents or its contractors to enter the premises to complete work specified in the closure plan, to monitor or maintain the solid waste disposal area, or take corrective action during post-closure period; and

B. Submit evidence to the department that a notice and covenant running with the land has been recorded with the recorder of deeds in the county where the CCR surface impoundment is located. The notice and covenant shall specify the following:

(I) That the property has been permitted as a CCR surface impoundment; and

(II) That use of the land in any manner which interferes with closure plans and post-closure plans filed with the department, is prohibited.

(18) Self-Certification.

(A) Existing CCR surface impoundments must, within thirty (30) days of the effective date of this rule or thirty (30) days of request by the department, provide to the department for review and approval a self-certification report verifying compliance with the requirements of subsection (18)(B) and additionally include the following:

1. The name and address of the owner/operator or permitee of the CCR surface impoundment; the name associated with the CCR surface impoundment; and the identification number of the CCR surface impoundment if one has been assigned;

2. The location of the CCR surface impoundment identified on the most recent United States Geological Survey (USGS) seven and one half (7 ½) minute or fifteen (15) minute topographic quadrangle map, or a topographic map of equivalent scale if a USGS map is not available;

3. A statement of the purpose for which the CCR surface impoundment is being used;

4. The name and size in acres of the watershed within which the CCR surface impoundment is located;

5. Describe the groundwater monitoring network and plan and summarize the data obtained;

6. Upon request, provide all groundwater monitoring data in a digital format specified by the department;

7. Provide any initial or interim closure plan, and post-closure plan prepared prior to the effective date of this rule;

8. Identify the groundwater statistical procedure chosen and background values;

9. Identify whether a SSI exists over background values;

10. Identify any planned additional groundwater investigations, including a schedule; and

11. Provide a schedule for future detection or assessment groundwater monitoring. The department may consider all relevant data whether or not it was collected from a groundwater monitoring network installed as a requirement of Title 40 CFR 257 subtitle D.

(B) Certifications. Certifications from a professional engineer, professional or registered geologist, or toxicologist as appropriate shall be submitted to the department certifying for the following technical assessments that:

1. The location restrictions meet the requirements of this rule;

2. The design of the composite liner or alternative composite liner meets the requirements of this rule and the cover system meets the requirements of this rule;

3. The EAP, if required, and any subsequent amendment of the EAP meet the requirements of this rule;

4. The initial and periodic structural stability assessments meet the requirements of this rule;

5. The initial and periodic hazard potential classification and any subsequent periodic classification meet the requirements of this rule;

6. The initial and periodic safety factor assessments meet the requirements of this rule;

7. The initial and periodic inflow design flood control system plans meet the requirements of this rule;

8. The design and construction of the groundwater monitoring system and statistical analysis plan meet the requirements of this rule;

9. The design and construction of the closure and post-closure plan meet the requirements of this rule; and

10. A compiled history of construction for the CCR surface impoundment that to the extent feasible contains—

A. A description of the physical and engineering properties of the foundation and abutment materials on which the CCR surface impoundment is constructed;

B. A statement of the type, size, range, and physical and engineering properties of the materials used in constructing each zone or stage of the CCR surface impoundment, the method of site preparation and construction of each zone of the CCR surface impoundment; and the approximate dates of construction of each successive stage of the CCR surface impoundment;

C. At a scale that details engineering structures and appurtenances relevant to the design, construction, operation, and maintenance of the CCR surface impoundment, detailed dimensional drawings of the CCR surface impoundment, including a plan view and cross sections of the length and width of the CCR surface impoundment, showing all zones, foundation improvements, drainage provisions, spillways, diversion ditches, outlets, instrument locations, and slope protection, in addition to the normal operating pool surface elevation and the maximum pool surface elevation following peak discharge from the inflow design flood, the expected maximum depth of CCR within the CCR surface impoundment, and any identifiable natural or manmade features that could adversely affect operation of the CCR surface impoundment due to malfunction or misoperation;

D. A description of the type, purpose, and location of existing instrumentation.

E. Area-capacity curves for the CCR surface impoundment;

F. A description of each spillway and diversion design features and capacities and calculations used in their determination;

G. The construction specifications and provisions for surveillance, maintenance, and repair of the CCR surface impoundment; and

H. Any record or knowledge of structural instability of the CCR surface impoundment.

(C) Application for department approval and assessment of fees.

1. By October 1, 2019, all owner/operators of existing CCR surface impoundments must submit to the department an application for review and approval of completeness of the reports, data, and assessments required in subsections (18)(A) and (B).

2. The application for review and approval will include the following:

A. A letter from the applicant that includes a list of the existing CCR surface impoundments to be closed pursuant to this rule;

B. A request to the department to review the documents that the owner/operator has certified;

C. Agreement to pay fees as provided by section 260.242, RSMo;

3. Within sixty (60) days of receipt of the application, the department shall issue a letter approving or approving with conditions receipt of a complete application and accepting the CCR surface impoundments into the state review process; and

4. The owner/operator of a CCR surface impoundment shall submit engineering drawings or plans to the department detailing the manner and timing of closure. Such engineering drawings and plans shall be submitted ninety (90) days prior to commencement of closure.

(19) Closure or Retrofit of CCR Surface Impoundments.

(A) Closure of a CCR surface impoundment, or any lateral expansion of a CCR surface impoundment must be completed either by leaving the CCR in place and installing a final cover system or through removal of the CCR and decontamination of the CCR surface impoundment, as described in subsections (19)(B) through (J). Retrofit of a CCR surface impoundment must be completed in accordance with the requirements in subsection (19)(K).

(B) Written closure plan.

1. Content of the plan. The owner/operator of a CCR surface impoundment must prepare a written closure plan that describes the steps necessary to close the CCR surface impoundment at any point during the active life of the CCR surface impoundment consistent with recognized and generally accepted good engineering practices. The written closure plan must include the following information:

A. A narrative description of how the CCR surface impoundment will be closed in accordance with this section;

B. If closure of the CCR surface impoundment will be accomplished through removal of CCR, a description of the procedures to remove the CCR and decontaminate the CCR surface impoundment in accordance with subsection (19)(C);

C. If closure of the CCR surface impoundment will be accomplished by leaving CCR in place, a description of the final cover system, designed in accordance with subsection (19)(D) and the methods and procedures to be used to install the final cover. The closure plan must also discuss how the final cover system will achieve the performance standards specified in subsection (19)(D);

D. An estimate of the maximum inventory of CCR ever on site over the active life of the CCR surface impoundment;

E. An estimate of the largest area of the CCR surface impoundment ever requiring a final cover as required by subsection (19)(D) at any time during the CCR surface impoundment's active life; and

F. A schedule for completing all activities necessary to satisfy the closure criteria in this section, including an estimate of the year in which all closure activities for the CCR surface impoundment will be completed. The schedule should provide sufficient information to describe the sequential steps that will be taken to close the CCR surface impoundment, including identification of major milestones such as coordinating with and obtaining necessary approvals and permits from other agencies, the dewatering and stabilization phases of CCR surface impoundment closure, or installation of the final cover system, and the estimated timeframes to complete each step or phase of CCR surface impoundment closure. When preparing the written closure plan, if the owner/operator of a CCR surface impoundment estimates that the time required to complete closure will exceed the timeframes specified in paragraph (19)(F)1. the written closure plan must include the site-specific information, factors, and considerations that would support any time extension sought under paragraph (19)(F)2.

2. Timeframes for preparing the initial written closure plan.

A. Existing CCR surface impoundments. The owner/operator of the CCR surface impoundment must provide the initial written closure plan prepared pursuant to 40 CFR 257 and placed the plan in the facility's operating record.

B. New CCR surface impoundments and any lateral expansion of a CCR surface impoundment. Prior to construction of a new CCR surface impoundment or lateral expansion of an existing CCR surface impoundment, the owner/operator must prepare and submit for approval to the department an initial written closure plan or amendment to an existing closure plan consistent with the requirements specified in paragraph (19)(B)1.

C. The owner/operator has completed the written closure plan when the plan, including the certification required by paragraph (19)(B)4., has been placed in the facility's operating record and made available to the department upon request.

3. Amendment of a written closure plan.

A. The owner/operator may amend the initial or any subsequent written closure plan developed pursuant to section (19) at any time.

B. The owner/operator must amend the written closure plan whenever:

(I) There is a change in the operation of the CCR surface impoundment that would substantially affect the written closure plan in effect; or

(II) Before or after closure activities have commenced, unanticipated events necessitate a revision of the written closure plan.

C. The owner/operator must amend the closure plan and receive department approval prior to an operational change at the

facility or CCR surface impoundment. If a closure plan requires revisions after closure activities have commenced for a CCR surface impoundment, the owner/operator must submit the amendment to the department for review and approval no later than thirty (30) days following the triggering event.

4. The owner/operator of the CCR surface impoundment must obtain a written certification from a professional engineer that the initial and any amendment of the written closure plan meets the requirements of this section.

(C) Closure by removal of CCR. An owner/operator may elect to close a CCR surface impoundment by removing and decontaminating all areas affected by releases from the CCR surface impoundment. CCR removal and decontamination are complete when constituent concentrations throughout the CCR surface impoundment and any areas affected by releases from the CCR surface impoundment have been removed and groundwater monitoring concentrations do not exceed the groundwater protection standard established pursuant to subparagraph (10)(F)3.D. for constituents listed in Appendix II. CCR surface impoundments closed by removing the CCR are not subject to the post-closure criteria contained in section (15).

(D) Closure performance standard when leaving CCR in place.

1. The owner/operator of a CCR surface impoundment must ensure that, at a minimum, the CCR surface impoundment is closed in a manner that will—

A. Control, minimize, or eliminate, to the maximum extent feasible, post-closure infiltration of liquids into the waste and releases of CCR, leachate, or contaminated run-off to the ground or surface waters or to the atmosphere;

B. Preclude the probability of future impoundment of water, sediment, or slurry;

C. Include measures that provide for major slope stability to prevent the sloughing or movement of the final cover system during the closure and post-closure care period;

D. Minimize the need for further maintenance of the CCR surface impoundment; and

E. Be completed in the shortest amount of time consistent with recognized and generally accepted good engineering practices.

2. Drainage and stabilization of CCR surface impoundments. The owner/operator of a CCR surface impoundment or any lateral expansion of a CCR surface impoundment must meet the requirements below prior to installing the final cover system required under paragraph (19)(D)3.

A. Free liquids must be eliminated by removing liquid wastes or solidifying the remaining wastes and waste residues.

B. Remaining wastes must be stabilized sufficient to support the final cover system.

3. Final cover system. If a CCR surface impoundment is closed by leaving CCR in place, the owner/operator must install a final cover system, or an alternative final cover system, that is designed to minimize infiltration and erosion and, at a minimum, meets the following requirements:

A. The design of the final cover system must be included in the written closure plan required by subsection (19)(B). The final cover system must be designed and constructed to meet the criteria provided in section (14);

B. The owner/operator may select an alternative final cover system design, provided the alternative final cover system is designed and constructed to meet the performance criteria in section (14). The design of the final cover system must be included in the written closure plan required by subsection (19)(B).

(I) The design of the final cover system must include an infiltration layer that achieves an equivalent reduction in infiltration as the infiltration layer specified in section (14).

(II) The design of the final cover system must include an erosion layer that provides equivalent protection from wind or water erosion as the erosion layer specified in section (14).

(III) The disruption of the integrity of the final cover system must be minimized through a design that accommodates settling and subsidence; and

C. For final cover systems installed prior to the effective date of this rule, the owner/operator of the CCR surface impoundment must obtain a written certification from a professional engineer that the design of the final cover system meets the requirements of 40 CFR 257.102. Final cover systems installed after the effective date must meet the criteria contained in this section. The department will receive documentation in accordance with section (18).

(E) Initiation of closure activities. Except as provided for in paragraph (19)(E)4. and section (20), the owner/operator of a CCR surface impoundment must commence closure of the CCR surface impoundment no later than the applicable timeframes specified in either paragraph (19)(E)1. or 2. The CCR surface impoundment owner/operator must also notify the department one hundred and eighty (180) days prior to initiating closure.

1. The owner/operator must commence closure of the CCR surface impoundment no later than thirty (30) days after the date on which the CCR surface impoundment either:

A. Receives the known final receipt of waste, either CCR or any non-CCR waste stream; or

B. Removes the known final volume of CCR from the CCR surface impoundment for the purpose of beneficial use of CCR.

2. Initiation of closure activities timeframes.

A. Except as provided by subparagraph (19)(E)2.B., the owner/operator must commence closure of a CCR surface impoundment that has not received CCR or any non-CCR waste stream or is no longer removing CCR for the purpose of beneficial use within two (2) years of the last receipt of waste or within two (2) years of the last removal of CCR material for the purpose of beneficial use.

B. Notwithstanding subparagraph (19)(E)2.A., the owner/operator of the CCR surface impoundment may petition the department for an additional two (2) years to initiate closure of the idle CCR surface impoundment provided the owner/operator provides written documentation that the CCR surface impoundment will continue to accept wastes or will start removing CCR for the purpose of beneficial use. The documentation must be supported by, at a minimum, the information specified in parts (19)(E)2.B.(I) and (II). The owner/operator may obtain two (2)-year extensions provided the owner/operator continues to be able to demonstrate that there is reasonable likelihood that the CCR surface impoundment will accept wastes in the foreseeable future or will remove CCR from the CCR surface impoundment for the purpose of beneficial use. The owner/operator must submit to the department for approval each completed demonstration, if more than one (1) time extension is sought, prior to the end of any two (2)-year period.

(I) Information documenting that the CCR surface impoundment has remaining storage or disposal capacity or that the CCR surface impoundment can have CCR removed for the purpose of beneficial use; and

(II) Information demonstrating that that there is a reasonable likelihood that the CCR surface impoundment will resume receiving CCR or non-CCR waste streams in the foreseeable future or that CCR can be removed for the purpose of beneficial use. The narrative must include a best estimate as to when the CCR surface impoundment will resume receiving CCR or non-CCR waste streams. The situations listed in subparts (19)(E)2.B.(II)(a) through (d) are examples of situations that would support a determination that the CCR surface impoundment will resume receiving CCR or non-CCR waste streams in the foreseeable future.

(a) Normal plant operations include periods during which the CCR surface impoundment does not receive CCR or non-CCR waste streams, such as the alternating use of two (2) or more CCR surface impoundments whereby at any point in time one (1) CCR surface impoundment is receiving CCR while CCR is being removed from a second CCR surface impoundment after its dewatering;

(b) The CCR surface impoundment is dedicated to a coal-fired boiler impoundment that is temporarily idled (e.g., CCR

is not being generated) and there is a reasonable likelihood that the coal-fired boiler will resume operations in the future;

(c) The CCR surface impoundment is dedicated to an operating coal-fired boiler (i.e., CCR is being generated); however, no CCR are being placed in the CCR surface impoundment because the CCR are being entirely diverted to beneficial uses, but there is a reasonable likelihood that the CCR surface impoundment will again be used in the foreseeable future; and

(d) The CCR surface impoundment currently receives only non-CCR waste streams as defined by section (2) and those non-CCR waste streams are not generated for an extended period of time, but there is a reasonable likelihood that the CCR surface impoundment will again receive non-CCR waste streams in the future.

C. In order to obtain additional time extension(s) to initiate closure of a CCR surface impoundment beyond the two (2) years provided by subparagraph (19)(E)2.A., the owner/operator of the CCR surface impoundment must include with the demonstration required by subparagraph (19)(E)2.B. the following statement signed by the owner/operator or an authorized representative:

(I) I certify under penalty of law that I have personally examined and am familiar with the information submitted in this demonstration and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

3. For purposes of this paragraph, closure of the CCR surface impoundment has commenced if the owner/operator has ceased placing waste and completes any of the following actions or activities:

A. Taken any steps necessary to implement the written closure plan required by subsection (19)(B);

B. Submitted a completed application for any required state or agency permit or permit modification; or

C. Taken any steps necessary to comply with any state or other agency standards that are a prerequisite, or are otherwise applicable, to initiating or completing the closure of a CCR surface impoundment.

4. The timeframes specified in paragraphs (19)(E)1. and 2. do not apply to an owner/operator of an existing CCR surface impoundment closing as required by subsection (1)(B).

(F) Completion of closure activities.

1, Except as provided for in paragraph (19)(F)2., existing and new CCR surface impoundments and any lateral expansion of a CCR surface impoundment, the owner/operator must complete closure of the CCR surface impoundment within six (6) months of commencing closure activities or other timeframe as approved by the department as part of the official closure plan.

A. Extensions listed in (19)(F)2. are only applicable to CCR surface impoundments that have demonstrated they meet the liner requirements.

2. Extensions of closure timeframes following approval of the official closure plan.

A. The timeframes for completing closure of a CCR surface impoundment specified under paragraph (19)(F)1. may be extended if the owner/operator can demonstrate that it was not feasible to complete closure of the CCR surface impoundment within the required timeframes due to factors beyond the facility's control. If the owner/operator is seeking a time extension beyond the time specified in the written closure plan, the demonstration must include a narrative discussion providing the basis for additional time beyond that specified in the closure plan. Factors that may support such a demonstration include:

(I) Complications stemming from the climate and weather, such as unusual amounts of precipitation or a significantly shortened construction season;

(II) Time required to dewater a CCR surface impoundment due to the volume of CCR contained in the CCR surface impoundment or the characteristics of the CCR in the CCR surface impoundment;

(III) The geology and terrain surrounding the CCR surface impoundment will affect the amount of material needed to close the CCR surface impoundment; or

(IV) Time required or delays caused by the need to coordinate with and obtain necessary approvals and permits from a state and local agencies.

B. Maximum time extensions.

(I) CCR surface impoundments of forty (40) acres or smaller may extend the time to complete closure by no longer than two (2) years.

(II) CCR surface impoundments larger than forty (40) acres may extend the timeframe to complete closure of the CCR surface impoundment multiple times, in two (2)-year increments. For each two (2)-year extension sought, the owner/operator must substantiate the factual circumstances demonstrating the need for the extension. No more than a total of five (5) two (2)-year extensions may be obtained for any CCR surface impoundment.

C. In order to obtain additional time extension(s) to complete closure of a CCR surface impoundment beyond the times provided by paragraph (19)(F)1., the owner/operator must submit to the department for review and approval, the demonstration required by subparagraph (19)(F)2.A. along with the following statement signed by the owner/operator or an authorized representative:

(I) I certify under penalty of law that I have personally examined and am familiar with the information submitted in this demonstration and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

3. Upon completion, the owner/operator of the CCR surface impoundment must obtain a certification from a professional engineer verifying that closure has been completed in accordance with the closure plan specified in subsection (19)(B) and the requirements of this section and submit the certification to the department for approval.

(G) No later than the date the owner/operator initiates closure of a CCR surface impoundment, the owner/operator must submit a closure notification to the department.

(H) Within thirty (30) days of completion of closure of the CCR surface impoundment or within a timeframe agreed to by the department, the owner/operator must submit a closure notification to the department. The notification must include the certification by a professional engineer as required by paragraph (19)(F)3.

(I) Deed notations—See section (17) and 10 CSR 2.030. An owner/operator that closes a CCR surface impoundment through closure by removal in accordance with subsection (19)(C) is not subject to the deed notation requirements of subsection (19)(I).

(J) The owner/operator of the CCR surface impoundment must comply with the closure recordkeeping requirements specified in section (17).

(K) Criteria to retrofit an existing CCR surface impoundment.

1. To retrofit an existing CCR surface impoundment, the owner/operator must—

A. First remove all CCR, including any contaminated soils and sediments from the CCR surface impoundment;

B. Comply with the requirements in subsection (5)(B); and

C. A CCR surface impoundment undergoing a retrofit remains subject to all other requirements of this subpart, including the requirement to conduct any necessary corrective action.

2. Written retrofit plan.

A. Content of the plan. The owner/operator must prepare a written retrofit plan that describes the steps necessary to retrofit the CCR surface impoundment consistent with recognized and generally accepted good engineering practices. The written retrofit plan must

include, at a minimum, all of the following information:

(I) A narrative description of the specific measures that will be taken to retrofit the CCR surface impoundment in accordance with this section;

(II) A description of the procedures to remove all CCR and contaminated soils and sediments from the CCR surface impoundment;

(III) An estimate of the maximum amount of CCR that will be removed as part of the retrofit operation;

(IV) An estimate of the largest area of the CCR surface impoundment that will be affected by the retrofit operation; and

(V) A schedule for completing all activities necessary to satisfy the retrofit criteria in this section, including an estimate of the year in which retrofit activities of the CCR surface impoundment will be completed.

B. Timeframes for preparing the initial written retrofit plan. No later than sixty (60) days prior to date of initiating retrofit activities, the owner/operator must prepare an initial written retrofit plan consistent with the requirements specified in paragraph (19)(K)2. for submittal to and approval by the department. For purposes of this subparagraph, initiation of retrofit activities has commenced if the owner/operator has ceased placing waste in the CCR surface impoundment and completes any of the following actions or activities:

(I) Taken any steps necessary to implement the written retrofit plan;

(II) Submitted a completed application for any required state or agency permit or permit modification; or

(III) Taken any steps necessary to comply with any state or other agency standards that are a prerequisite, or are otherwise applicable, to initiating or completing the retrofit of a CCR surface impoundment.

(IV) The owner/operator has completed the written retrofit plan when the plan, including the certification required by subparagraph (19)(K)2.D., has been submitted to and approved by the department and placed in the facility's operating record.

C. Amendment of a written retrofit plan.

(I) The owner/operator may amend the initial or any subsequent written retrofit plan at any time with approval from the department.

(II) The owner/operator must amend the written retrofit plan whenever:

(a) There is a change in the operation of the CCR surface impoundment that would substantially affect the written retrofit plan in effect; or

(b) Before or after retrofit activities have commenced, unanticipated events necessitate a revision of the written retrofit plan.

(III) The owner/operator must amend the retrofit plan at least sixty (60) days prior to a planned change in the operation of the facility or CCR surface impoundment, or no later than sixty (60) days after an unanticipated event requires the revision of an existing written retrofit plan. If a written retrofit plan is revised after retrofit activities have commenced for a CCR surface impoundment, the owner/operator must amend the current retrofit plan no later than thirty (30) days following the triggering event.

D. The owner/operator of the CCR surface impoundment must obtain a written certification from a professional engineer that the activities outlined in the written retrofit plan, including any amendment of the plan, meet the requirements of this section. This certification must be submitted to the department for review and approval.

3. Deadline for completion of activities related to the retrofit of a CCR surface impoundment. Any CCR surface impoundment that is being retrofitted must complete all retrofit activities within the same time frames and procedures specified for the closure of a CCR surface impoundment in this section or, where applicable, section (20).

4. Upon completion, the owner/operator must obtain a certification from a professional engineer verifying that the retrofit activities have been completed in accordance with the retrofit plan specified in paragraph (19)(K)2. and the requirements of this section.

5. No later than the date the owner/operator initiates the retrofit of a CCR surface impoundment, the owner/operator must prepare a notification of intent to retrofit a CCR surface impoundment. The owner/operator has completed the notification when it has been placed in the facility's operating record as required.

6. Within thirty (30) days of completing the retrofit activities specified in paragraph (19)(K)1., the owner/operator must prepare a notification of completion of retrofit activities. The notification must include the certification by a professional engineer as required by paragraph (19)(K)4. and submitted to the department for review and approval. The owner/operator has completed the notification when it has been placed in the facility's operating record.

7. At any time after the initiation of a CCR surface impoundment retrofit, the owner/operator may cease the retrofit and initiate closure of the CCR surface impoundment in accordance with the requirements in section (19).

(20) Alternative closure requirements.

(A) The owner/operator of a CCR surface impoundment, or any lateral expansion of a CCR surface impoundment that is subject to closure pursuant to subsection (1)(B) may continue to receive CCR in the CCR surface impoundment provided the owner/operator meets the requirements of either subsection (20)(A) or (B) and receives department approval.

1. No alternative CCR disposal capacity. Notwithstanding the provisions of (1)(B), a CCR surface impoundment may continue to receive CCR if the owner/operator of the CCR surface impoundment certifies that the CCR must continue to be managed in that CCR surface impoundment due to the absence of alternative disposal capacity both on site and off site of the facility. To qualify under this paragraph, the owner/operator of the CCR surface impoundment must document that all of the following conditions have been met:

A. No alternative disposal capacity is available on site or off site. An increase in costs or the inconvenience of existing capacity is not sufficient to support qualification under this section;

B. The owner/operator has made, and continues to make, efforts to obtain additional capacity. Qualification under this subsection lasts only as long as no alternative capacity is available. Once alternative capacity is identified, the owner/operator must arrange to use such capacity as soon as feasible;

C. The owner/operator must remain in compliance with all other requirements of this rule, including the requirement to conduct any necessary corrective action; and

D. The owner/operator must prepare an annual progress report documenting the continued lack of alternative capacity and the progress towards the development of alternative CCR disposal capacity.

2. Once alternative capacity is available, the CCR surface impoundment must cease receiving CCR and initiate closure following the timeframes in section (19).

3. If no alternative capacity is identified within five (5) years after the initial certification, the CCR surface impoundment must cease receiving CCR and close in accordance with the timeframes in section (19).

(B) Permanent cessation of a coal-fired boiler(s) by a date certain. Notwithstanding the provisions of subsection (1)(B), a CCR surface impoundment may continue to receive CCR if the owner/operator certifies that the facility will cease operation of the coal-fired boilers within the timeframes specified in paragraphs (20)(B)4. and 5., but in the interim period (prior to closure of the coal-fired boiler), the facility must continue to use the CCR surface impoundment due to the absence of alternative disposal capacity both on site and off site of the facility. To qualify under this subsection, the owner/operator of the CCR surface impoundment must document that all of the following conditions have been met and submit such documentation to

the department for review and approval:

1. No alternative disposal capacity is available on site or off site. An increase in costs or the inconvenience of existing capacity is not sufficient to support qualification under this section;

2. The owner/operator must remain in compliance with all other requirements of this subsection, including the requirement to conduct any necessary corrective action; and

3. The owner/operator must prepare an annual progress report documenting the continued lack of alternative capacity and the progress towards the closure of the coal-fired boiler.

4. For a CCR surface impoundment that is forty (40) acres or smaller, the coal-fired boiler must cease operation and the CCR surface impoundment must have completed closure no later than October 17, 2023.

5. For a CCR surface impoundment that is larger than forty (40) acres, the coal-fired boiler must cease operation, and the CCR surface impoundment must complete closure no later than October 17, 2028.

(C) Required notices and progress reports. An owner/operator of a CCR surface impoundment that closes in accordance with subsections (20)(A) or (B) must complete and submit the notices and progress reports to the department specified in paragraphs (20)(C)1. and 2.

1. Within six (6) months of becoming subject to closure pursuant to subsection (1)(B), the owner/operator must prepare and submit to the department a notification of intent to comply with the alternative closure requirements of this section. The notification must describe why the CCR surface impoundment qualifies for the alternative closure provisions under either subsections (20)(A) or (B), in addition to providing the documentation and certifications required by subsections (20)(A) or (B).

2. The owner/operator must prepare the periodic progress reports required by subparagraph (20)(A)1.D. or paragraph (20)(B)3., in addition to describing any problems encountered and a description of the actions taken to resolve the problems. The annual progress reports must be completed according to the following schedule:

A. The first annual progress report must be prepared and submitted to the department for approval no later than thirteen (13) months after receiving department approval of the alternative closure requirements.

B. The second annual progress report must be prepared and submitted to the department for approval no later than twelve (12) months after completing the first annual progress report. Additional annual progress reports must be prepared and submitted to the department for approval within twelve (12) months of completing the previous annual progress report.

C. The owner/operator has completed the progress reports specified in paragraph (20)(C)2. when the reports are submitted to the department for approval, determined complete by the department, and the reports have been placed in the facility's operating record.

D. An owner/operator of a CCR surface impoundment must also prepare the notification of intent to close a CCR surface impoundment as required by section (19).

E. The owner/operator of the CCR surface impoundment must comply with the recordkeeping requirements specified in section (17).

Appendix I—Constituents for Detection Monitoring
Boron
Calcium
Chloride
Fluoride
pH
Sulfate
Total Dissolved Solids (TDS)

Appendix II—Constituents for Assessment Monitoring
Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Fluoride
Lead
Lithium
Mercury
Molybdenum
Selenium
Thallium
Radium 226 and 228 combined

AUTHORITY: section 260.225, RSMo 2016. Original rule filed Dec. 31, 2018.

PUBLIC COST: This proposed rule will cost state agencies or political subdivisions seven hundred and four thousand six hundred and forty-one dollars ($704,641) in aggregate.

PRIVATE COST: This proposed rule will cost private entities approximately three million and four hundred and seven thousand dollars ($3,407,000) in the aggregate.

NOTICE OF PUBLIC HEARING AND NOTICE TO SUBMIT COMMENTS: Anyone may file a statement in support of or in opposition to this proposed rule with the Missouri Department of Natural Resources, 1101 Riverside Drive, Jefferson City, MO. To be considered, comments will be received until March 28, 2019. A public hearing is scheduled for 1:00 p.m. March 21, 2019, at the LaCharrette Conference Room, 1101 Riverside Drive, Jefferson City, Missouri.

FISCAL NOTE

PUBLIC COST

I. RULE NUMBER

10 CSR 80-12.010 Coal Combustion Residuals Surface Impoundment
New Rule

II. SUMMARY OF FISCAL IMPACT

Affected Agency or Political Subdivision	Estimated Cost of Compliance in the Aggregate
Missouri Department of Natural Resources	$704,641.00
No other public entities should incur cost	

III. Worksheet

I. Fund Costs by Category	FY 2019	FY 2020	FY 2021	Total per Rule
Salaries	$165,330.00	$333,967.00	$337,306.00	
Fringe Benefits	$103,043.00	$163,916.00	$164,908.00	
Equipment and Expense	$75,804.00	$32,103.00	$32,905.00	
Local Assistance	$0.00	$0.00	$0.00	
Other Fund Costs	$0.00	$0.00	$0.00	
TOTAL FUND COSTS - ALL CATEGORIES	**$344,177.00**	**$529,986.00**	**$535,119.00**	
Divided in Half per rule	**$172,088.50**	**$264,993.00**	**$267,559.50**	**$704,641.00**

IV. Assumptions

1. The totals in the worksheet above are divided for the two CCR rules (landfill and impoundment) evenly.

Position	FTE	Duties
Environmental Engineer I/II (at $58,896 annually)	2	Permit modifications, groundwater monitoring reviews, groundwater corrective action planning and oversight, Inspections, website review, new cell construction review and analysis
Environmental Specialist I/II/III (at $52,116 annually)	1	Groundwater monitoring, groundwater report reviews, inspections as needed
Environmental Specialist I/II/III (at $52,116 annually)	2	Quarterly inspections for each of the 37 ponds, beneficial use inspections, investigation efforts
Geologist I/II/III (at $56,520 annually)	1	Groundwater monitoring, groundwater corrective action, and geological and hydrological assessments for the siting of new CCR units

FISCAL NOTE

PRIVATE COST

I. RULE NUMBER

10 CSR 80-12.010 Coal Combustion Residual Surface Impoundment
New Rule

II. SUMMARY OF FISCAL IMPACT

Estimate of the number of entities by class which would likely be affected by the adoption of the proposed rule:	Classification by types of the business entities which would likely be affected:	Estimate in the aggregate as to the cost of compliance with the rule by the affected entities:
Electrical Generating Coal Fired Power Plants that have CCR Impoundments	Corporations and Municipalities	$3,407,000 for first three years

III. Worksheet

Impoundments

Facility Name	Owner/Operator	Impoundment I.D.	Status	Closure	5-Year Type Fee	Annual
AECI New Madrid	AECI	Ash pond #004	Operating		$62,000	$15,000
AECI New Madrid	AECI	Ash pond #003	Operating		$62,000	$15,000
AECI New Madrid	AECI	Lined ash pond	Operating		$62,000	$15,000
AECI Thomas Hill	AECI	Slag pond 001, cell 1	Operating		$62,000	$15,000
AECI Thomas Hill	AECI	Slag pond 001, cell 3	Operating		$62,000	$15,000
AECI Thomas Hill	AECI	Slag pond 001, cell 4	Operating		$62,000	$15,000
Ameren Labadie	Ameren	Flyash pond	Operating		$62,000	$15,000
Ameren Labadie	Ameren	Bottom ash pond	Operating		$62,000	$15,000
Ameren Meramec	Ameren	Pond 498	Operating		$62,000	$15,000
Ameren Meramec	Ameren	Pond 492	Operating		$62,000	$15,000
Ameren Meramec	Ameren	Pond 493	Operating		$62,000	$15,000
Ameren Meramec	Ameren	Pond 496	Operating		$62,000	$15,000
Ameren Meramec	Ameren	Pond 490	Operating		$62,000	$15,000
Ameren Meramec	Ameren	Pond 491	Operating		$62,000	$15,000
Ameren Meramec	Ameren	Pond 494	Operating		$62,000	$15,000
Ameren Meramec	Ameren	Pond 495	Closure in progress	In Place	$48,000	N/A
Ameren Rush Island	Ameren	Ash pond	Operating		$62,000	$15,000
Ameren Sioux	Ameren	Bottom ash pond	Operating		$62,000	$15,000
Ameren Sioux	Ameren	Flyash pond	Operating		$62,000	$15,000
Ameren Sioux	Ameren	Permitted LF (wet)	Operating		$62,000	$15,000
Empire Asbury	Empire	Upper, Lower, and South ponds	Operating		$62,000	$15,000
KCPL Montrose	KCPL	North ash pond	Operating		$62,000	$15,000
KCPL Montrose	KCPL	South ash pond (primary and secondary)	Operating		$62,000	$15,000
KCPL Sibley	KCPL	Flyash pond	Operating		$62,000	$15,000
KCPL Sibley	KCPL	Slag settling pond	Operating		$62,000	$15,000
Sikeston BMU	Sikeston	Bottom ash pond	Operating		$62,000	$15,000
Sikeston BMU	Sikeston	Flyash pond	Operating		$62,000	$15,000
Ameren Meramec	Ameren	Pond 489	Closed	In Place Dec 2017	$48,000	N/A
IPL Blue Valley	IPL	North and South bottom ash ponds	Closed	In Place 12-19-17 (Partial) Clean 12-19-17	$48,000	N/A
IPL Blue Valley	IPL	South flyash pond	Closed	In Place 12-19-17	$48,000	N/A
IPL Blue Valley	IPL	North flyash pond	Closed	In Place 12-19-17	$48,000	N/A
					$1,852,000	$390,000

	Number of CCR Impoundments	2019	2020	2021
One-time fee ($48,000/ unit)	5	$240,000	0	0
One-time fee ($62,000/ unit)	26	$1,612,000	0	0
Annual fee ($15,000/ unit)	26	$390,000	$390,000	$390,000
		$2,242,000	**$390,000**	**$390,000**

Financial Assurance Instrument Preparation Cost		
Impoundment Facilite Sites	FAI Cost	Total Cost
11	$5,000.00	$55,000.00

Construction QA/QC after Closure for Report		
($30,000 per impoundment group)	11	$330,000

IV. Assumptions

1. The fee is based on an annual fee of $15,000.00 per facility, a one-time enrollment fee of $48,000.00 for facilities that complete closure in place prior to December 31, 2018, and a one-time enrollment fee of $62,000.00 for facilities that do not close by January 1, 2019.
2. There are twenty six (26) impoundments subject to the annual fee.
3. There are 11 sites with impoundments which can be grouped for development of the Financial Assurance Instruments (FAI)s.
4. All facilities used for this calculation are Coal Combustion Residual Impoundments as defined by 40 CFR part 257.
5. The fee will be paid annually until the facility is approved for release from post closure by the Department of Natural Resources.
6. It is assumed that all facilities will not conduct closure by removal (i.e. facilities plan to leave CCR material in place as part of closure) and will pay the annual fees through the post closure period.
7. 40 CFR Part 257 was effective on October 19, 2015 the regulatory requirements mirror the federal regulations except that FAIs and construction quality assurance/ construction quality control (QA/QC) are state requirements.
8. FAIs will require the development of a financial worksheet and the submittal of a financial test. It is assumed that all Electrical Generating Coal Fired Power Plants that have CCR Impoundments will use a financial test as their FAI mechanism due to the great asset versus debt ratios these entities typically have.
9. QA/QC will require the submittal of a summary report after closure. 40 CFR 257 has requirements for the Professional Engineer (PE) certification of all work completed at the CCR impoundment. The Department will require the submittal of a PE certified report summarizing the P.E.'s oversight of the work.
10. The QA/QC Cost will be incurred after the facilities close. We are unsure about closure dates.

Title 13—DEPARTMENT OF SOCIAL SERVICES
Division 70—MO HealthNet Division
Chapter 3—Conditions of Provider Participation, Reimbursement and Procedure of General Applicability

PROPOSED RULE

13 CSR 70-3.280 Home and Community-Based Services Waiver Definitions

PURPOSE: This rule defines terms used in 13 CSR 70-3.290, which implements federal regulatory requirements promulgated by the United States Department of Health and Human Services, Centers for Medicare and Medicaid Services at 42 CFR 441.301(c)(4). These requirements must be met for settings in which home and community-based services are provided under a 1915(c) HCBS Waiver Program.

(1) "Enroll/Enrollment" is the process that Missouri Medicaid Audit and Compliance (MMAC) uses to establish eligibility to receive a Medicaid billing number and/or Medicaid billing privileges. The process includes—

(A) Identification of a provider;

(B) Validation of the provider's eligibility to provide items or services to Medicaid beneficiaries;

(C) Identification and confirmation of the provider's practice location(s) and owner(s); and

(D) Granting the provider Medicaid billing privileges and/or a Medicaid billing number.

(2) "Heightened Scrutiny" is a process whereby a provider submits information to Department of Social Services (DSS), or its designee, to overcome the presumption that the setting has the qualities of an institution. If DSS or its designee, based on the information presented by the provider, determines that the setting does have the qualities of a home and community-based setting, the evidence will be sent to the Centers for Medicare and Medicaid Services. The Centers for Medicare and Medicaid Services will review evidence submitted by the state and make a final determination as to whether the evidence is sufficient to overcome the presumption that the setting has the qualities of an institution. These settings include those in a publicly or privately-owned facility that provide inpatient treatment; are on the grounds of, or are immediately adjacent to, a public institution; or that have the effect of isolating individuals receiving Medicaid-funded Home and Community-Based Services (HCBS) from the broader community of individuals not receiving Medicaid-funded HCBS.

(3) "Home and Community-Based Services" are MO HealthNet Division covered services provided to individuals in their own home or community rather than in a hospital, nursing home, or intermediate care facility for individuals with intellectual disabilities.

(4) "Home and Community-Based Services Waiver" is a program approved by the Centers for Medicare and Medicaid Services under the authority of Section 1915(c) of the Social Security Act that provides home and community based services.

(5) "Hospital" is a facility licensed by the Missouri Department of Health and Senior Services, or by the appropriate state agency for facilities located in another state, as an acute care, psychiatric or rehabilitation hospital.

(6) "Institution for Mental Diseases (IMD)" is a hospital, nursing facility, or other institution of seventeen (17) beds or more that is primarily engaged in providing diagnosis, treatment, or care of people with mental diseases.

(7) "Intermediate Care Facilities for individuals with Intellectual disability (ICF/IID)" is a facility as defined at 19 CSR 30-83.010(24).

(8) "Missouri Medicaid Audit and Compliance Unit (MMAC)" is the unit within the Department of Social Services that is responsible for the oversight and auditing of compliance for the Medicaid Title XIX, CHIP Title XXI, and Waiver Program in Missouri, which includes the oversight and auditing of compliance of MO HealthNet providers and Medicaid participants through the lock-in program. MMAC is charged with the responsibility of detecting, investigating, and preventing fraud, waste, and abuse of the Missouri Medicaid Title XIX, CHIP Title XXI, and Waiver Programs.

(9) "MO HealthNet" is the division within the Department of Social Services, pursuant to sections 208.001 and 208.201, RSMo, that administers the Medicaid Title XIX, CHIP Title XXI, and waiver programs, approves claims from MO HealthNet providers for services or merchandise provided to eligible Medicaid participants, and authorizes and disburses payment for those services or merchandise accordingly.

(10) "MO HealthNet Program" is a program operated pursuant to Title XIX of the Social Security Act, Title XXI of the Social Security Act and/or waiver programs authorized by the United States Department of Health and Human Services.

(11) "Licensed Nursing Home" is a skilled nursing facility as defined at 19 CSR 30-83.010(49).

(12) "Person-Centered Service Plan" is a document that is the result of a planning process which identifies the strengths, capacities, preferences, needs, goals, and desired personal outcomes of the individual.

(13) "Provider" is a person or entity who enters into a contract or provider agreement with MMAC for the purpose of providing items or services to Missouri Medicaid participants. Provider includes ordering and referring physicians, dentists, and non-physician practitioners.

(14) "Provider Owned or Controlled Residential Setting" is a physical place where an individual resides and is owned, co-owned, and/or operated by a provider of HCBS. A setting is considered provider owned or controlled if the HCBS provider leases from a third party or owns the property. If the HCBS provider does not lease or own the property but has a direct or indirect financial relationship with the property owner, the setting is considered provider controlled unless the property owner or provider establishes that the nature of the relationship did not affect either the care provided or the financial conditions applicable to tenants.

(15) "Residential Setting" is a physical place to live where an individual has services and supports, ranging from twenty-four- (24-) hour supervision to on-call assistance, to live as independently as possible.

(16) "Revalidation" is a requirement that all existing MO HealthNet Program providers must go through in accordance with 13 CSR 65-2 to continue to be a MO HealthNet Program provider.

(17) "Setting" is the place where a home and community-based service or support is provided.

AUTHORITY: sections 208.153, 208.201, and 660.017, RSMo 2016. Original rule filed Dec. 21, 2018.

PUBLIC COST: This proposed rule will not cost state agencies or political subdivisions more than five hundred dollars ($500) in the

aggregate.

PRIVATE COST: This proposed rule will not cost private entities more than five hundred dollars ($500) in the aggregate.

NOTICE TO SUBMIT COMMENTS: Anyone may file a statement in support of or in opposition to this proposed rule with the Department of Social Services, Legal Services Division-Rulemaking, PO Box 1527, Jefferson City, MO 65102-1527, or by email to Rules.Comment@dss.mo.gov. To be considered, comments must be received within thirty (30) days after publication of this notice in the ***Missouri Register****. No public hearing is scheduled.*

Title 13—DEPARTMENT OF SOCIAL SERVICES
Division 70—MO HealthNet Division
Chapter 3—Conditions of Provider Participation, Reimbursement and Procedure of General Applicability

PROPOSED RULE

13 CSR 70-3.290 Home and Community-Based Services Waiver Setting Requirements

PURPOSE: This rule implements federal regulatory requirements promulgated by the United States Department of Health and Human Services, Centers for Medicare and Medicaid Services at 42 CFR 441.301(c)(4) establishing the requirements that must be met for settings in which home and community-based services are provided under a 1915(c) HCBS Waiver Program. 1915(c) Home and Community-Based Services (HCBS) Waiver Programs are programs that provide home and community based services to individuals who, in the absence of those services, require the level of care provided in a hospital, a nursing facility, or an ICF/IID. To offer a 1915(c) HCBS Waiver Program the state must submit a waiver application for approval to the Centers for Medicare and Medicare Services, who, on behalf of the Secretary of Health and Human Services, determines if the waiver meets the statutory and regulatory requirements found in 42 CFR 441.301—441.310.

(1) Home and Community-Based Setting Requirements. Home and community-based settings must have all of the following qualities based on the needs of individuals as indicated in their person-centered service plans:

(A) The setting is integrated in and supports full access of individuals receiving Medicaid Home and Community-Based Services (HCBS) to the greater community, including providing opportunities to seek employment and work in competitive integrated settings, engage in community life, control personal resources, and receive services in the community, to the same degree of access as individuals not receiving Medicaid HCBS;

(B) The setting is selected by the individual from setting options, including non-disability specific settings and an option for a private unit in a residential setting. The setting options are identified and documented in the person-centered service plan and are based on the individual's needs, preferences, and, for residential settings, resources available for room and board;

(C) The setting ensures the individual's rights of privacy, dignity, and respect, and freedom from coercion and restraint;

(D) The setting optimizes, but does not regiment, individual initiative, autonomy, and independence in making life choices, including but not limited to, daily activities, physical environment, and with whom to interact;

(E) The setting facilitates individual choice regarding services and supports, and who provides them; and

(F) In a provider-owned or controlled residential setting, in addition to the qualities at 13 CSR 70-3.290 (1)(A) through (E), the following additional conditions must be met:

1. The unit or dwelling is a physical place that can be owned, rented, or occupied under a legally enforceable agreement by the individual receiving services, and the individual has, at a minimum, the same responsibilities and protections from eviction that tenants have under the landlord/tenant law of the State of Missouri, county, city, or other designated entity. For settings in which landlord/tenant laws do not apply, a lease, residency agreement, or other form of written agreement must be in place for each HCBS participant, and that document must provide protections that address eviction processes and appeals comparable to those provided under the jurisdiction's landlord tenant law;

2. Individuals have privacy in their sleeping or living unit including:

A. Units have entrance doors lockable by the individual, with only appropriate staff having keys to doors;

B. Individuals sharing units have a choice of roommates in that setting;

C. Individuals have the freedom to furnish and decorate their sleeping or living units within the lease or other agreement;

3. Individuals have the freedom and support to control their own schedules and activities, and have access to food at any time;

4. Individuals are able to have visitors of their choosing at any time;

5. The setting is physically accessible to the individual; and

6. Any modification of the additional conditions, under (1)(F)1. through 4. of this rule, must be supported by a specific assessed need and justified in the person-centered service plan. If any modifications are made, the following requirements must be documented in the person-centered service plan:

A. A specific and individualized assessed need;

B. Positive interventions and supports used prior to any modifications to the person-centered service plan;

C. Less intrusive methods of meeting the need that have been tried but did not work;

D. A clear description of the condition that is directly proportionate to the specific assessed need;

E. Regular collection and review of data to measure the ongoing effectiveness of the modification;

F. Established time limits for periodic reviews to determine if the modification is still necessary or can be terminated;

G. The informed consent of the individual; and

H. An assurance that interventions and supports will cause no harm to the individual.

(2) Settings that are not Home and Community-Based. Home and community-based settings do not include the following:

(A) A nursing facility;

(B) An institution for mental diseases;

(C) An intermediate care facility for individuals with intellectual disabilities;

(D) A hospital; or

(E) Any other locations that have qualities of an institutional setting, as determined by the Department of Social Services (DSS) or its designee.

(3) Heightened Scrutiny process. Any setting that is located in a building that is also a publicly or privately operated facility that provides inpatient institutional treatment, or in a building on the grounds of, or immediately adjacent to, a public institution, or any other setting that has the effect of isolating individuals receiving Medicaid HCBS from the broader community of individuals not receiving Medicaid HCBS, will be presumed to be a setting that has the qualities of an institution and is not a home and community based setting. The provider may submit information to DSS or its designee as evidence that the setting does have the qualities of a home and community-based setting. If DSS or its designee, based on the information presented by the provider, determines that the setting does have the qualities of a home and community-based setting, the evidence will

be sent to the Centers for Medicare and Medicaid Services to make the final determination as to whether the evidence is sufficient to overcome the presumption that the setting has the qualities of an institution.

(4) Provider Enrollment.

(A) Prior to enrolling with MO HealthNet, HCBS providers will need to certify in writing on forms provided by the Missouri Medicaid Audit and Compliance Unit (MMAC) that they understand and will comply with the requirements of this rule. Providers will certify by the signature of an authorized agent of the business as part of their MO HealthNet application documentation. Providers that refuse to certify shall be denied enrollment with MO HealthNet.

(B) HCBS providers shall be subject to a pre-enrollment site visit per 13 CSR 65-2.020(9)(B)(2)(B). Enrolling HCBS providers who are non-compliant with sections (1)-(3) of this rule shall be denied enrollment with MO HealthNet.

1. Providers who request in writing an extension to their application process in order to become compliant with sections (1)-(3) of this rule shall be granted thirty (30) calendar days to become compliant, without paying an additional application fee per 13 CSR 65-2.020(5). This thirty- (30-) day time period is in accordance with the provisions of 13 CSR 70-3.020(2)(D) and MMAC shall notify the provider in writing of the thirty- (30-) day extension accordingly. If, at the end of the thirty- (30-) day extension, the provider is still non-compliant, the provider shall be denied enrollment.

(5) Provider Revalidation. All MO HealthNet providers must revalidate in accordance with 13 CSR 65-2.020(4). HCBS providers must be compliant with sections (1)-(3) of this rule upon revalidation or they shall not be entitled to continued MO HealthNet participation. If an enrolled HCBS provider is found to be out of compliance during its revalidation process, the provider shall be granted thirty (30) days to come into compliance or shall be denied continued enrollment in the MO HealthNet program.

(6) Providers enrolled with MO HealthNet on or after March 17, 2014, must be in compliance and maintain continued compliance with all the requirements of this regulation upon publication of the regulation.

(7) Providers enrolled with MO HealthNet prior to March 17, 2014, that do not meet the requirements of this regulation, must come into compliance within ninety (90) days of the publication of this regulation or submit and have approved a remediation plan to come into compliance with the requirements of this regulation. The remediation plan must be submitted and approved by DSS or its designee. All providers must be in compliance with the requirements of this regulation no later than March 17, 2022.

(8) Sanctions. Enrolled providers that are non-compliant with sections (1)-(7) of this rule, during their participation with MO HealthNet, are subject to sanctions per 13 CSR 70-3.030.

(A) DSS or its designee shall inform enrolled providers of non-compliance in writing by e-mail or U.S. Mail.

(B) Enrolled providers shall submit a plan to remediate areas of non-compliance ("transition plan") to DSS or its designee within forty-five (45) calendar days of the notice of non-compliance.

(C) Remediation must be complete within one hundred twenty (120) days of the notice of non-compliance or the provider shall be subject to sanctions per 13 CSR 70-3.030 (5)(A).

AUTHORITY: sections 208.153, 208.201, and 660.017, RSMo 2016. Original rule filed Dec. 21, 2018.

PUBLIC COST: This proposed rule will not cost state agencies or political subdivisions more than five hundred dollars ($500) in the aggregate.

PRIVATE COST: This proposed rule will not cost private entities more than five hundred dollars ($500) in the aggregate.

*NOTICE TO SUBMIT COMMENTS: Anyone may file a statement in support of or in opposition to this proposed rule with the Department of Social Services, Legal Services Division-Rulemaking, PO Box 1527, Jefferson City, MO 65102-1527, or by email to Rules.Comment@dss.mo.gov. To be considered, comments must be received within thirty (30) days after publication of this notice in the **Missouri Register**. No public hearing is scheduled.*

Title 13—DEPARTMENT OF SOCIAL SERVICES
Division 110—Division of Youth Services
Chapter 8—Youth Finances

PROPOSED RULE

13 CSR 110-8.010 Division of Youth Services Trust Fund Program

PURPOSE: This rule provides a program for youth in the Division of Youth Services (DYS) residential care to access funds, for reasonable purposes, as deemed appropriate by the division, in the DYS Trust Fund created by section 219.095, RSMo. The DYS Trust Fund is a special class of trust funds to be used to account for all wages earned by residential youth and for other funds provided for the use and benefit of residential youth, excluding monies received by the DYS on behalf of youth from the Social Security Administration. This rule describes how the DYS establishes and maintains bank accounts to account for monies received for residential youth, except for monies received from the Social Security Administration.

(1) As used in this regulation, unless the context clearly indicates otherwise, the following terms mean:

(A) "Residential Youth" means a youth who has been committed to the DYS in the manner authorized by law, and who is placed in residential care;

(B) "Trust Fund" means a bank account established by the Division of Youth Services (DYS) for the receipt and disbursement of youth monies received while in residential placement, excluding payments made to youth in DYS custody by the social security administration; and

(C) "Youth" means a person under twenty-one (21) years of age committed to the custody of DYS.

(2) When a youth is placed in the legal custody of the DYS, DYS shall receive and hold all youth wages or other monies provided to residential youth, excluding monies received by the Social Security Administration, in a DYS Trust Fund for the duration of the time that the youth is in DYS residential care.

(3) A DYS Trust Fund will be established for each DYS residential facility to hold all youth wages or other monies provided to residential youth, excluding payments made to youth in DYS custody by the Social Security Administration.

(A) The DYS Trust Fund, whenever possible, shall be a non-interest bearing checking account.

(B) The Director of DYS or the Director's designee shall authorize opening of each account and shall be the opening signatory on each account.

(C) Each facility will designate two (2) employees to be authorized to sign for the deposit and withdrawal of funds after an account is established. The director shall approve the designated employees.

(4) Each DYS Trust Fund shall have the following process for the receipt and the tracking of funds:

(A) There shall be a general fund ledger to track all deposits and

all withdrawals from the trust fund;

(B) There shall be individual ledgers for each residential youth who has monies deposited into the fund.

1. Wages from the any program established under section 219.091, RSMo, will be received by DYS on behalf of the youth and will be deposited into the trust fund. Each youth will be provided a receipt showing the deposit of funds in the trust fund.

2. Residential youth will also be provided a receipt for any other monies deposited into the DYS Trust fund on their behalf while residing in the facility; and

(C) Each facility shall have one (1) receipt book to track deposits into the DYS Trust Fund. An entry detailing the date, time amount, source of funds, and identification of the youth on whose behalf the monies are deposited will be made in the receipt book every time money is received on behalf of the youth.

(5) Each trust fund shall have the following process for the withdrawal of funds:

(A) Residential youth may withdraw monies with the approval of their group leader to ensure appropriate use and alignment with the comprehensive individual treatment plan;

(B) Each facility shall have one ledger to track all withdrawals from the DYS Trust Fund. An entry detailing the date, time, amount, name of the youth, and purpose for the transaction shall be made in the ledger every time money is disbursed from the fund; and

(C) Upon release into the community, a check for the full balance shall be provided to the youth for the balance of funds on the youth's individual ledger.

(6) Reconciliation:

(A) The trust fund's receipt book and general ledger shall be reconciled on a monthly basis with the bank statement;

(B) Each individual ledger shall be reconciled on a monthly basis with the general ledger; and

(C) DYS and the Division of Finance and Administrative Services of the Department of Social Services may audit the books of each trust fund at any time.

(7) Each DYS youth involved in residential treatment services will participate in a personal finance curriculum, which will focus on wise money management.

(8) Unclaimed Trust Fund Balance. DYS shall promptly disburse any balance of monies accumulated in the youth's account in the manner required by law when the youth is released from DYS residential care or upon death of the youth.

AUTHORITY: sections 219.016, 219.036, 219.091, and 660.017, RSMo 2016. Original rule filed Dec. 19, 2018.

PUBLIC COST: This proposed rule will not cost state agencies or political subdivisions more than five hundred dollars ($500) in the aggregate.

PRIVATE COST: This proposed rule will not cost private entities more than five hundred dollars ($500) in the aggregate.

NOTICE TO SUBMIT COMMENTS: Anyone may file a statement in support of or in opposition to this proposed rule with the Department of Social Services, Legal Services Division-Rulemaking, PO Box 1527, Jefferson City, MO 65102-1527, or by email to Rules.Comment@dss.mo.gov. To be considered, comments must be received within thirty (30) days after publication of this notice in the ***Missouri Register****. No public hearing is scheduled.*

Title 13—DEPARTMENT OF SOCIAL SERVICES
Division 110—Division of Youth Services
Chapter 8—Youth Finances

PROPOSED RULE

13 CSR 110-8.020 Division of Youth Services Child Benefits Program

PURPOSE: The purpose of this rule is to account for monies received by the Division of Youth Services (DYS) from the Social Security Administration when the DYS has been named the representative payee of a residential youth. The DYS Child Benefits Fund is established within the State Treasury for depositing of payments from the Social Security Administration to youth in DYS custody. Monies deposited in this fund shall be used only for the purposes specified by federal or state law or by these regulations. Monies in this special trust fund are not deemed to be state funds.

(1) As used in this regulation, unless the context clearly indicates otherwise, the following terms mean:

(A) "Benefit" means monies received on behalf of a youth from the Social Security Administration;

(B) "Youth" means a person under twenty-one (21) years of age committed to the custody of the Division of Youth Services (DYS); and

(C) "Residential Youth" means a youth who has been committed to the DYS in the manner provided by law, and who is placed in residential care.

(2) The Fiscal Liaison for the DYS is responsible for establishing centralized methods to oversee the accounting of receipts and disbursements from this fund. Such methods require that—

(A) There shall be an individual ledger for each youth receiving benefits when DYS has been appointed as Representative Payee for a youth in custody. The ledger shall contain all deposits and withdrawals of the youth's money;

(B) There shall also be a control ledger to track all deposits and withdrawals from the fund; and

(C) The control ledger shall be reconciled monthly with the individual ledger and the fund balance.

(3) Receipts from the Social Security Administration.

(A) All funds directly received by DYS as payee for a residential youth shall be deposited into the DYS Child Benefits Fund.

(B) Any checks received by the DYS from the Social Security Administration will be sent to the Division of Finance and Administrative Services (DFAS) for deposit into the DYS Child Benefits Fund.

(4) Utilization of the Child Benefits Fund.

(A) Monies deposited in this fund shall be used only for the purposes authorized by federal and state law, or by regulation of the DYS.

(B) Each facility with a youth receiving a Social Security benefit shall be issued a purchasing card designated solely for the use of the Social Security benefits of a youth in custody.

(C) Authorized DYS facility staff may make purchases for the youth receiving benefits up to the amount held in the youth's fund based on need. All purchases shall be approved by the facility manager or his or her designee. Youth will not be provided with cash.

(5) Payments from the Child Benefits Fund include:

(A) Facility staff for each facility shall submit monthly purchasing card statements to DYS Central Office, along with copies of receipts from purchases;

(B) If funds are available, payments from the DYS Child Benefits Fund shall be made to off-set any purchases made for the youth in

custody with the purchasing card; and

(C) All expenditures shall be posted to the applicable individual ledgers and the control ledger.

(6) Removal of DYS as Representative Payee.

(A) DYS will resign as representative payee upon the release of a youth from residential care.

(B) DYS will submit to the Social Security Administration a written request to resign as representative payee, along with a check for the remaining balance in the youth's individual ledger and any documentation requested by the Social Security Administration concerning all account activity as may be required by federal law.

AUTHORITY: sections 219.016, 219.036, and 660.017, RSMo 2016. Original rule filed Dec. 19, 2018.

PUBLIC COST: This proposed rule will not cost state agencies or political subdivisions more than five hundred dollars ($500) in the aggregate.

PRIVATE COST: This proposed rule will not cost private entities more than five hundred dollars ($500) in the aggregate.

*NOTICE TO SUBMIT COMMENTS: Anyone may file a statement in support of or in opposition to this proposed rule with the Department of Social Services, Legal Services Division-Rulemaking, PO Box 1527, Jefferson City, MO 65102-1527, or by email to Rules.Comment@dss.mo.gov. To be considered, comments must be received within thirty (30) days after publication of this notice in the **Missouri Register**. No public hearing is scheduled.*

Title 19—DEPARTMENT OF HEALTH AND SENIOR SERVICES
Division 20—Division of Community and Public Health
Chapter 60—Maternal and Neonatal Care

PROPOSED RULE

19 CSR 20-60.010 Levels of Maternal and Neonatal Care Designations

PURPOSE: This rule establishes criteria and procedures for reporting standardized assessments and levels of maternal and neonatal care designations for birthing facilities.

PUBLISHER'S NOTE: The secretary of state has determined that the publication of the entire text of the material which is incorporated by reference as a portion of this rule would be unduly cumbersome or expensive. This material as incorporated by reference in this rule shall be maintained by the agency at its headquarters and shall be made available to the public for inspection and copying at no more than the actual cost of reproductions. This note applies only to the reference material. The entire text of the rule is printed here.

(1) The following definitions shall apply throughout this rule:

(A) "Birthing facility" means any hospital, as defined under section 197.020 RSMo, with more than one licensed obstetric bed or a neonatal intensive care unit, a hospital operated by a state university, or a birthing center licensed under sections 197.200 to 197.240, RSMo;

(B) "Department" means the Missouri Department of Health and Senior Services; and

(C) "LOCATe" or "CDC Maternal and Neonatal Levels of Care Assessment Tool" refers to a web-based tool created by the Centers for Disease Control and Prevention (CDC) that assists in creating standardized assessments of levels of maternal and neonatal care. LOCATe is based on the most recent guidelines and policy statements issued by the American Academy of Pediatrics, the American College of Obstetricians and Gynecologists, and the Society for Maternal-Fetal Medicine.

(2) By January 31, 2019, each birthing facility shall complete the CDC Maternal and Neonatal Levels of Care Assessment Tool (LOCATe) based upon the assessment of the facility as of December 31, 2018. For each succeeding year thereafter, each birthing facility shall use LOCATe to reassess its designation as of December 31st preceding the due date of January 31. The LOCATe tool (version 0.8.0) is incorporated by reference in this rule as published by the Centers for Disease Control and Prevention and available at www.health.mo.gov. This rule does not incorporate any subsequent amendments or additions. The completed assessment shall be sent to the Department of Health and Senior Services, PO Box 570, Jefferson City, MO 65102-0570 by January 31 each year.

(3) The level of care designation for neonatal care selected by the birthing facility within LOCATe shall be based upon the most current standards published by the American Academy of Pediatrics (AAP). The level of care designation for maternal care selected by the birthing facility within LOCATe shall be based upon the most current standards published by the American College of Obstetricians and Gynecologists (ACOG) and the Society for Maternal-Fetal Medicine.

(4) Each birthing facility shall have the results of their LOCATe assessment and level of care designations verified by the department, AAP, or ACOG once every three years. When submitting the annual LOCATe assessment, birthing facilities shall notify the department in writing about how they will have their results verified.

(5) If a birthing facility chooses to have the results of their LOCATe standardized assessment and level of care designations verified by either AAP or ACOG, the verification shall be conducted utilizing criteria collected in LOCATe. Verification processes conducted by AAP or ACOG may include criteria in addition to those included in LOCATe. Verification by the department will only include criteria collected in LOCATe.

(6) A birthing facility shall provide written notification to the department at any time their designation changes in between annual assessments.

(7) The department may initiate a review and monitor compliance with the provisions set forth in this rule at any time. The department will provide written notification to a birthing facility if it finds that verification does not match the self-designated levels of care.

AUTHORITY: section 192.006, RSMo 2016, and section 192.380, RSMo Supp. 2017. Emergency rule filed Dec. 20, 2018, effective Dec. 30, 2018, expires June 27, 2019. Original rule filed Dec. 20, 2018.

PUBLIC COST: This proposed rule will cost state agencies or political subdivisions $184,802 for the initial three (3) year period and $116,456 annually thereafter.

PRIVATE COST: This proposed rule will cost private entities $172,852 for the initial three (3) year period and $68,908 annually thereafter.

*NOTICE TO SUBMIT COMMENTS: Anyone may file a statement in support of or in opposition to this proposed rule with Adam Crumbliss, Director, Department of Health and Senior Services, Division of Community and Public Health, PO Box 570, Jefferson City, MO 65102. To be considered, comments must be received within thirty (30) days after publication of this notice in the **Missouri Register**. No public hearing is scheduled.*

FISCAL NOTE
PUBLIC COST

I. **Department Title: Department of Health and Senior Services**
Division Title: Division of Community and Public Health
Chapter Title: Maternal and Neonatal Care

Rule Number and Name:	19 CSR 20-60.010. Levels of Maternal and Neonatal Care Designations
Type of Rulemaking:	Proposed Rule

II. SUMMARY OF FISCAL IMPACT

Affected Agency or Political Subdivision	Estimated Cost of Compliance in the Aggregate
Department of Health & Senior Services' costs =	**$150,423 for the first three year period and $102,831 for annually thereafter**
14 public hospitals =	**$34,379 for the first three year period and $13,625 for annually thereafter**
Total =	**$184,802 for the first three year period and $116,456 for annually thereafter**

III. WORKSHEET

DHSS Nurse

One (1) nurse FTE annual salary of $54,892 with estimated fringe benefits of $28,098.

One-Time First Year expense (computer, office, furniture etc) for one FTE listed above - $7,910

On-going expenses (including travel, office supplies, network, printing, etc.) for one FTE - $19,841.

$54,892 (salary) + $28,098 (fringe benefits) + $19,841 (on-going expenses) X three (3) = $142,513 + $7,910 (one-time first year expense) = $150,423 for the first three year period.

$54,892 (salary) + $28,098 (fringe benefits) + $19,841 (on-going expenses) = $102,831 annually thereafter.

Hospitals

One (1) registered nurse X 14 public hospitals that will complete the LOCATe tool annually X $29/hour X eight (8) hours = $3,248 for the annual completion of the LOCATe tool.

One (1) registered nurse X 13 public hospitals that will have the department to conduct a verification review once every three (3) years X $29/hour X three (3) hours = $1,131 for the verification review by the department.

One (1) public hospital that will not have the department conduct a verification review X $30,000 cost of designations by American Academy of Pediatrics (AAP) and the American College of Obstetricians and Gynecologists (ACOG) to establish levels of maternal and neonatal care designations X one (1) time during a three year period = $30,000.

$3,248 + $1,131 + $30,000 = $34,379 for the first three year period.

One (1) registered nurse X 14 public hospitals that will complete the LOCATe tool annually X $29/hour X eight (8) hours = $3,248 + $377 ($1,131/3 per year for the verification review completed once every three (3) years by DHSS) + $10,000 ($30,000/3 per year cost of designation by AAP and ACOG) = $13,625 annually thereafter.

IV. ASSUMPTIONS

One nurse will be needed by the department to implement this rule. The nurse will conduct a desk audit of the annual LOCATe tool submitted by each hospital. The nurse will also conduct a verification review for each of the hospitals which receive a verification review by the department once every three years.

There are 14 public hospitals that will complete the LOCATe tool because the hospitals have either a licensed obstetric bed or a neonatal intensive care unit. A registered nurse with the requisite obstetrics knowledge and experience from each hospital will complete the LOCATe tool. It is estimated that this nurse will earn approximately $29/hour and that it will take approximately eight (8) hours to complete the LOCATE tool each year. It is further estimated that it will take approximately three (3) hours for the nurse to participate in the verification review process performed by the department every three (3) years.

The department is estimating that approximately 13 public hospitals will have the department conduct its verification review once every three years. It is estimated that one (1) public hospital will not have the department conduct the verification review. This hospital will receive a neonatal designation with AAP which costs approximately $15,000 for the level that the hospital will be applying for that will last for three (3) years. This hospital will also receive a maternal designation with ACOG which costs approximately $15,000 for the level that the hospital will be applying for that will last for three (3) years.

FISCAL NOTE
PRIVATE COST

I. Department Title: Department of Health and Senior Services
Division Title: Division of Community and Public Health
Chapter Title: Maternal and Neonatal Care

Rule Number and Title:	19 CSR 20-60.010 Levels of Maternal and Neonatal Care Designation
Type of Rulemaking:	Proposed

II. SUMMARY OF FISCAL IMPACT

Estimate of the number of entities by class which would likely be affected by the adoption of the rule:	Classification by types of the business entities which would likely be affected:	Estimate in the aggregate as to the cost of compliance with the rule by the affected entities:
72	**Hospitals**	**$172,533 for the first three year period and $68,647 for annually thereafter**
1	**Birthing center**	**$319 for the first three year period and $261 annually thereafter**
Total =		**$172,852 for the first three year period and $68,908 for annually thereafter**

III. WORKSHEET

Hospitals

One (1) registered nurse X 72 private hospitals that will complete the LOCATe tool annually X $29/hour X eight (8) hours = $16,704 for the annual completion of the LOCATe tool.

One (1) registered nurse X 67 private hospitals that will have the department conduct a verification review once every three (3) years X $29/hour X three (3) hours = $5,829 for the verification review by the department.

Five (5) private hospitals that will not have the department conduct a verification review X $30,000 cost of designations by American Academy of Pediatrics (AAP) and the American College of Obstetricians and Gynecologists (ACOG) to establish levels of

maternal and neonatal care designations X one (1) time during a three year period = $150,000.

$16,704 + $5,829 + $150,000 = $172,533 for the first three year period.

One (1) registered nurse X 72 private hospitals that will complete the LOCATe tool annually X $29/hour X eight (8) hours = $16,704 + $1,943 ($5,829/3 years for the verification review completed once every three (3) years by DHSS) + $50,000 ($150,000/3 per year cost of designation by AAP and ACOG) = $68,647 annually thereafter.

Birthing center

One (1) registered nurse X one (1) private birthing center that will complete the LOCATe tool annually X $29/hour X eight (8) hours = $232 for the annual completion of the LOCATe tool.

One (1) registered nurse X one (1) private birthing center that will have the department conduct a verification review once every three (3) years X $29/hour X three (3) hours = $87 for the verification review by the department.

$232 + $87 = $319 for the first three year period.

One (1) registered nurse X one (1) private birthing center that will complete the LOCATe tool annually X $29/hour X eight (8) hours = $232 + $29 ($87/3 per year for the verification review completed once every three (3) years by DHSS) = $261 annually thereafter.

IV. ASSUMPTIONS

There are 72 private hospitals that will complete the LOCATe tool because the hospitals have either a licensed obstetric bed or a neonatal intensive care unit. A registered nurse with the requisite knowledge and experience from each hospital will complete the LOCATe tool. It is estimated that this nurse will earn approximately $29/hour and that it will take approximately eight (8) hours to complete the LOCATE tool each year. It is further estimated that it will take approximately three (3) hours for the nurse to participate in the verification review process performed by the department every three (3) years.

The department is estimating that approximately 67 private hospitals will have the department conduct its verification review once every three years. It is estimated that five (5) private hospitals will not have the department conduct the verification reviews. These hospitals will receive a neonatal designation with AAP which costs approximately $15,000 for the level that the hospital will be applying for that will last for three (3) years. These hospitals will also receive a maternal designation with ACOG which costs approximately $15,000 for the level that the hospital will be applying for that will last for three (3) years.

Title 20—DEPARTMENT OF INSURANCE, FINANCIAL INSTITUTIONS AND PROFESSIONAL REGISTRATION
Division 2110—Missouri Dental Board
Chapter 2—General Rules

PROPOSED RESCISSION

20 CSR 2110-2.260 Certification Requirements—Licensees Employed by or Contracting with Federally Qualified Health Centers. This rule established the certification requirements of dentists and dental hygienists employed by, or contracting with, federally qualified health centers pursuant to HS HCS SS SS SCS for Senate Bill No. 1122 of the 92nd General Assembly (2004).

PURPOSE: This rule is being rescinded pursuant to House Bill 1268, effective August 28, 2018, which removed the affidavit requirement from statutory language.

AUTHORITY: sections 332.031, RSMo 2000 and 332.081 and 332.321, RSMo Supp. 2004. This rule originally filed as 4 CSR 110-2.260. Original rule filed April 12, 2005, effective Oct. 30, 2005. Moved to 20 CSR 2110-2.260, effective Aug. 28, 2006. Rescinded: Filed Dec. 18, 2018.

PUBLIC COST: This proposed rescission will not cost state agencies or political subdivisions more than five hundred dollars ($500) in the aggregate.

PRIVATE COST: This proposed rescission will not cost private entities more than five hundred dollars ($500) in the aggregate.

*NOTICE TO SUBMIT COMMENTS: Anyone may file a statement in support of or in opposition to this proposed rescission with the Missouri Dental Board, PO Box 1367, Jefferson City, MO 65102, by facsimile at 573-751-8216, or via email at dental@pr.mo.gov. To be considered, comments must be received within thirty (30) days after publication of this notice in the **Missouri Register**. No public hearing is scheduled.*