Speaker # 4

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April 14, 2016

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118-5317

RE: General Permit – Confined Animal Feeding Operations

To Whom It May Concern;

As a twenty-two year veteran of the solid waste industry, I was present when, in the early and mid-1990's, the Arkansas Legislature passed a plethora of legislation designed to protect the public health and establish an orderly and effective system of managing solid waste, including stringent standards for construction and maintenance of landfills and transfer stations and the posting of financial assurance mechanisms to cover any pollution migrating off the facility site. As part of this effort, the new laws required a more stringent standard for protection of the surface and groundwater in the State's karst region, known as the Boone/St. Joe formation, which covered most of the northwest section of the state and includes Newton County. These laws were codified into what became the Arkansas Department of Environmental Quality's Regulation Number 22.

It is significant to note that ADEQ defines Karst as an unstable area. In Regulation 22.407 (b) Unstable Areas, it states in part that, "Unstable areas can include poor foundation conditions, areas susceptible to mass movement, and Karst terrain."

Regulation 22 (b)(5) further declares that, "Karst terrain means areas where karst topography, with its characteristic surface and subterranean features, is developed as the result of dissolution of limestone, dolomite, and other soluble rock. Characteristic physiographic features present in karst terrain include but not limited to, sinkholes, sinking streams, caves, large springs, and blind valleys."

The legislature and the Department of Environmental Quality further outlined requirements for construction of solid waste facilities in karst formations in Regulation 22.425 (a) – (l). These higher, and more expensive standards, addressed all areas of landfill construction, monitoring and maintenance. These regulations provided a higher level of protection for the regions groundwater and surface water supply. A copy of the pertinent regulation is attached.

In addition to these stricter standards, landfills and transfer stations are required to remove its toxic water to a permitted waste water treatment plant that will clean it to the level of the National Safe Drinking Water standards. Facilities are permitted to use their own in-house treatment methods providing they can meet the safe drinking water standards. It is worth noting that the Newton County Transfer Station, located south of Jasper, has to collect and transport its toxic water to the local waste water treatment plant for processing and release.

The Arkansas Legislature and the Arkansas Department of Environmental Quality have already determined the Boone-St. Joe formation is a unique geological region and requires special consideration when it comes to handling waste and waste water. It seems prudent to establish stricter standards for confined animal operations that want to deposit their waste water in the karst Boone-St.Joe formation. The Legislature and the Department deemed these actions necessary to preserve this unique region and its land and water resources. Additionally, they placed the financial burden of these different requirements on the industry.

As you consider changes to the general permitting process, I request that you,

1) Require Confined Animal Feeding Operations in the Boone-St. Joe formation remove their toxic waste water to a permitted treatment plant, or install and maintain an on-site system capable of treating the waste water to safe drinking water standards, and

2) Require all CAFO's in the Boone-St.Joe formation obtain individual permits, and

3) That all CAFO's, like solid waste facilities, provide financial assurance in the event their operation contaminates land and water outside their ownership. It should be noted that all solid waste facilities must post financial assurance, even those using the general permit.

In my estimation, this is the least the Department can do to fulfill its obligation to protect the resources of the Natural State. Your predecessors took that bold step; I think you should as well.

We should all remember, "We can live without pork, but we cannot live without water."

Sincerely;

Bill Lord
President/Consultant

CC: Files

(iii) The volume and chemical nature of the waste managed in the unit;

(iv) Impacts on fish, wildlife, and other aquatic resources and their habitat from release of the solid waste;

(v) The potential effects of catastrophic release of waste to 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.

(4) To the extent required under Section 404 of the Clean Water Act or applicable State wetlands laws, 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 (a)(1) of this section, then minimizing unavoidable impacts to the maximum extent practicable, and finally offsetting remaining unavoidable wetland impacts through all appropriate and practicable compensatory mitigation actions (e.g., restoration of existing degraded wetlands or creation of man-made wetlands); and

(5) Sufficient information is available to make a reasonable determination with respect to these demonstrations.

(b) Class 1 Effective Date - New Class 1 municipal solid waste landfill units and lateral expansions shall meet all of the requirements of this section and shall demonstrate to the Director that the facility is not located in a wetland, or make the demonstration required in paragraph (a) prior to permitting of the new unit or lateral expansion of an existing unit.

Reg.22.405- Fault Areas

(a) Applicability - New units and lateral expansions shall not be located within two hundred (200) feet (60 meters) of a fault that has had displacement in Holocene time unless the owner or operator demonstrates to the Director that an alternative setback distance of less than Two hundred (200) feet (60 meters) will prevent damage to the structural integrity of the unit and will be protective of human health and the environment.

Reg.22.406- Seismic Impact Zones

(a) Applicability - New units and lateral expansions shall not be located in seismic impact zones, unless the owner or operator demonstrates to the Director that all containment structures, including liners, leachate collection systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site. The owner or operator must place the demonstration in the operating record, and notify the Director that it has been placed in the operating record, and provide the demonstration to the Director for approval.

Reg.22.407- Unstable Areas

(a) Applicability - Owners or operators of new units, existing units, and lateral expansions located in an unstable area must demonstrate that engineering measures have been incorporated into the unit's design

to ensure that the integrity of the structural components of the unit will not be disrupted. The owner or operator must place the demonstration in the operating record, notify the Director that it has been placed in the operating record, and provide the demonstration to the Director for approval. The owner or operator must consider the following factors, at a minimum, when determining whether an area is unstable:

(1) On-site or local soil conditions that may result in significant differential settling;

(2) On-site or local geologic or geomorphologic features; and

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

(b) For purposes of this section:

(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 landfill structural components responsible for preventing releases from a landfill. Unstable areas can include poor foundation conditions, areas susceptible to mass movements, and Karst terrain.

(2) Structural components means liners, leachate collection systems, final covers, run-on/run-off systems, and any other component used in the construction and operation of the facility that is necessary for protection of human health and the environment.

(3) 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 an solid waste unit.

(4) Areas susceptible to mass movement means those areas of influence (i.e., areas characterized as having an active or substantial possibility of mass movement) where the movement of earth material at, beneath, or adjacent to the municipal solid waste landfill unit, because of natural or man-induced events, results in the down slope 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, soil fluction, block sliding, and rock fall.

(5) Karst terrain means areas where karst topography, with its characteristic surface and subterranean 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, sinking streams, caves, large springs, and blind valleys.

Reg.22.408- Separation Distances And Buffer Zones

(a) New Facilities and Expansions - Applicants for new Class 1 landfills and expansions to the permitted area shall comply with the following minimum separation distances and buffer zones as measured from the proposed active portion of the landfill:

(1) Five hundred (500) feet of an existing well or water intake used as a drinking water source as determined at the earliest date the notification or application is made to local or regional authorities as required by Reg.22.201, Reg.22.202 or Reg.22.203 as applicable

Table 1 Design Standard Concentration Values

Chemical	MCL (mg/l)
Arsenic	0.05
Barium	2.0
Benzene	0.005
Cadmium	0.005
Carbon tetrachloride	0.005
Chromium	0.1
2,4-Dichlorophenoxy acetic acid	0.1
1,4-Dichlorobenzene	0.075
1,2-Dichloroethane	0.005
1,1-Dichloroethylene	0.007
Endrin	0.0002
Fluoride	4
Lindane	0.002
Lead	0.015
Mercury	0.002
Methoxychlor	0.1
Nitrate	10
Selenium	0.05
Silver	0.05
Toxaphene	0.005
1,1,1-Trichloromethane	0.2
Trichloroethylene	0.005
2,4,5-Trichlorophenoxy acetic acid	0.01
Vinyl Chloride	0.002

Reg.22.425- Landfills In Boone And St. Joe Formations

(a) Applicability - The following are minimum design standards for Class 1 landfills that are located within the outcrop area of the Boone and St. Joe Formations. The design phase of a project must neutralize all limitations noted in the site characterization study through engineering modification or operating methods. The design of the containment structure must meet or exceed the minimum standards listed in these regulations.

(b) Separation Requirements -

(1) A minimum separation of ten (10) feet must be maintained between the bottom of the bottom liner system and the seasonal high water table surface.

(2) A minimum vertical separation of ten (10) feet must be maintained between the bottom liner and the highest point of the bedrock or pinnacles.

(3) All fill structures and operations must be above the one hundred (100) year flood elevation.

(c) Liner System -

(1) The minimum slope on the bottom liner must insure positive drainage of leachate after maximum loading and maximum expected strain.

(2) All bottom liner systems must consist of a double composite separated by a leak detection system. Each composite liner shall consist of an upper geomembrane liner (60 mil minimum thickness) directly overlying a low permeability soil layer, as described in Reg. 22.424(b).

(3) The soil and synthetic components of the composite liner must meet the requirements of Reg. 22.428.

(d) Leachate Collection System - The double composite liner system must have a leachate removal system directly overlying the upper composite liner. In addition to the requirements of Reg.22.429, the leachate collection and removal system must meet the following standards:

(1) The system must be designed such that leachate head above the primary composite liner does not exceed one foot under the most severe conditions anticipated.

(2) The drainage material must be free of organic and carbonate material, contain less than five percent (5%) by weight which passes the #200 sieve, have a minimum hydraulic conductivity of 1×10^{-3} and be a minimum of twenty-four (24) inches in thickness. Equivalent drainage nets or fabric may be used in lieu of the twenty-four (24) inch drainage layer provided a substitute protective layer is provided and the system provides an equivalent hydraulic conductivity to the twenty-four (24) inch layer.

(3) Leachate collection pipes must be incorporated into the drainage layer to convey liquid out of the landfill to storage tanks or a treatment system. The pipes must be a minimum of six (6) inches in diameter and must be chemically compatible with the leachate generated at the landfill and be structurally capable of supporting the maximum static and dynamic load anticipated from the overlying fill material and construction equipment.

(e) Leak Detection System - The double composite liner system must have a leak detection system located between the upper composite and the lower composite liners. The leak detection system must conform to the following standards:

(1) The minimum thickness of the coarse grained material must be 1 foot;

(2) Leak detection systems shall meet the standards for leachate collection system design and construction. A minimum hydraulic conductivity of 1×10^{-3} cm/sec must be obtained in the leak detection system material.

(3) An action leakage rate must be developed for the design and approved by the Department. If leakage rates exceed the action leakage rate, fill operations must cease and the Department must be notified. A written contingency plan must be developed for the facility which outlines steps and measures to be taken if the action leakage rate is exceeded.

(4) Daily records of fluid accumulation in the leak detection system must be maintained by the owner or operator.

(f) Final Cover Design - In addition to the requirements of Reg.22.1301, the top liner or cap of the landfill must be designed to minimize infiltration of storm water into the waste mass. The cover system design must incorporate the following minimum standards:

(1) A gas venting layer at least six (6) inches in thickness that meets the standards for leachate collection system design and construction having a minimum hydraulic conductivity of 1 x 10^{-3} cm/sec and no more than 5 percent by weight passing the #200 sieve, must be placed directly above the final lift of waste. Gas vent risers with slotted screen which extend at least 3 feet into the waste mass and fitted with a goose neck cap or equivalent to allow effective venting must be installed in the landfill. Vent spacing shall be a minimum of 1 per acre. The annular space in the gas vent risers must be backfilled with clean crushed stone to enhance gas migration from the venting layer to the riser.

(2) A composite infiltration barrier system shall be installed above the gas venting layer. The barrier system shall consist of two components; the upper component consisting of a minimum 30-mil flexible membrane liner (high density polyethylene shall be at least 60-mil thick), and the lower component consisting of at least a 18 inch layer of compacted soil with a hydraulic conductivity of no more than 1 x 10^{-7} cm/sec. The flexible membrane liner component must be installed in direct and uniform contact with the compacted soil component. The composit cover system shall be designed and constructed in accordance with the requirements of Reg.22.428 except that the fines content of the barrier layer soil must be fifty percent (50%) or greater passing the #200 sieve. The barrier soil be free of large objects and must meet the following specifications:

(i) The barrier soil layer must have a Plasticity Index of greater than 10 percent.

(ii) Fines content of the barrier layer soil must be 50 percent or greater passing the #200 sieve.

(iii) Material greater than a #4 sieve must not compose more than 20 percent by weight of the soil.

(iv) No particles greater than 1 inch in diameter.

(3) A barrier protective layer must be placed directly over the barrier soil layer. This protective layer must be at least twenty four (24) inches in thickness and the lower 6 inches must be free of objects greater than 1 inch in diameter.

(4) A top soil layer of at least six (6) inches must be placed above the barrier soil protective layer. The top soil layer must be capable of sustaining vegetative growth over the landfill.

(g) Final Cover Slopes - Minimum slopes on the landfill cap shall be four percent (4%) or greater. Maximum slopes shall not exceed twenty-five percent (25%). Slopes greater than ten percent (10%) will require specialized erosion control measures which will ensure long term stability.

(h) Vegetative Cover - An appropriate grass cover crop must be established, during the recommended planting season, on completed portions of the landfill. The operating plan must contain a section describing in detail re-vegetation procedures.

(i) Drainage Filters - All granular drainage layers must be bounded above and below by geosynthetic liner or filters. The filter fabric must be compatible with leachate and landfill gas. The filters must allow free passage of gases and fluids while preventing clogging of the granular drainage layer.

(j) Alternative Designs - The Department may approve alternative designs proposals if determined by the staff to meet or exceed the minimum standards set forth above.

(k) Quality Assurance and Quality Control - A Quality Control and Quality Assurance Plan for liner and final cover construction must be developed in accordance with the requirements of Reg.22.428.

(l) Quality Assurannce - The permittee shall employ a third party engineering firm to insure proper construction of each component of the containment structure in accordance with the requirements of Reg.22.428.

Reg.22.426- Survey Control

(a) Applicability - Each facility shall develop and maintain a method of survey control as a means of insuring and documenting that the facility is developed in accordance with the permit drawings. Specifically, the site shall develop a grid coordinate system, that will allow facility features to be located in a three dimensional manner. The grid system shall be developed in accordance with the following guidelines.

(b) Survey Control Requirements - The grid system may be developed using assumed and not "true" reference directions (Ex. true north, mean sea level, etc.) if it is more convenient and workable. If assumed directions or elevations are used, then there should be some positive means developed to relate the site grid to an established grid coordinate system such as the State Plane Coordinate System or the Transverse Mercator System and to mean sea level.

(c) Benchmarks - At least three permanent points will be established from which the site grid can be referenced. Each permanent point must be located in areas where they are not likely to be disturbed. In the event that they are disturbed, then they shall be immediately re-established and the Department shall be notified. The grid, grid coordinate system, and reference points shall be shown on all permit drawings, cell as-built drawings and any modification submittals made to the Department.

(d) Grid Markers - Grid markers shall be established at positions to allow visual inspection of the progression of the fill and other features. The markers shall be mounted on steel posts, brightly painted, and placed in areas where they are not likely to be damaged or destroyed. Markers shall be identified consistent with permit drawing notations.

(e) Landfill Feature Location - Prominent landfill features shall be located and referenced to the approved site grid. At a minimum, the prominent features include:

(1) Property boundaries or corners;

(2) Monitoring wells and piezometers;

(3) Leachate risers, manholes and collection piping;

(4) Limits of refuse placement and perimeter of flexible membrane liner;