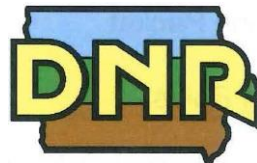


Open Feedlot Construction Permit Manual



July 2017



OPEN FEEDLOT PERMITTING PROCESS MANUAL

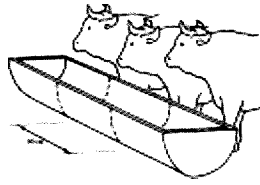


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Introduction

This guide was developed to assist producers, engineers, consultants and the DNR staff to understand the open feedlot construction permit process. Too many times applicants have been frustrated by long delays and a feeling of being “left in the dark.” Our goal is to foster communication between the involved parties and continually improve the permitting process.

This manual outlines a new “fast track” open feedlot construction permit. It contains the information needed to progress through the new permit process, including flow charts, detailed descriptions of the steps in the process, and required forms and instructions. If at any time there are questions about the process, please contact the DNR Animal Feeding Operations at (712) 262-4177.

Applicable Statutory Authority

Issuing open feedlot construction permits is the responsibility of the Iowa Department of Natural Resources (DNR) under Iowa Administrative Code 567--Chapter 65. When an open feedlot decides to initiate an open feedlot construction permit project, many parties become involved including the following:

- Consulting Engineers or NRCS Engineers
- Funding Agencies
- DNR Field Offices
- Contractors
- DNR Geologic and Flood Plain Staff
- DNR Animal Feeding Operations Staff

DNR’s Commitment

When the “fast track” construction permitting process is followed as described in this manual, the DNR commits to:

- Review and approve open feedlot construction permit applications within 53 days of submittal, and
- Issue construction permit within 3 days of the approved permit application.

Section 1 Project Procedure

Project Initiation

Step 1 - Applicant Hires Consultant: A producer with an open feedlot project that is required to obtain a construction permit must have the permit application prepared by a Professional Engineer (PE) licensed in the State of Iowa or a Natural Resources Conservation Service (NRCS) engineer. Producers should select P.E. based on their experience, qualifications and fee schedule.

The following website is listed only for informational purposes. Please note that the DNR does not endorse or recommend any particular consultant from this website and that the applicant is responsible for making his or her own evaluation before selecting a consultant.

- University of Missouri Extension <http://extension.missouri.edu/webster/private-engineer.aspx>

Step 2 - Site Visit: Producer and consultant meet to discuss options, collect data and research alternatives.

Step 3 - Preliminary Design Work: Preliminary design work will include preparation of information required for the optional pre-application meeting with the DNR. The preliminary design should include the following items:

- Animal unit capacity
- Runoff control system type (for conventional systems) or Alternative Technology (AT)
- Estimated size of containment basin or AT system shown on aerial photo
- Location of wells, streams and water diversions
- Legal description of location

Refer to Pre-Design Feedlot Information Packet, an example of which is provided on page 11 or visit www.iowadnr.gov, and under "Environmental Protection", select "Animal Feeding Operations", then select "Open Feedlots", then select "Construction Requirements" then select "Open Feedlot Construction Permit Manual".

Step 4 - Pre-Design Submittal: The consultant submits the pre-design work to the DNR electronically (see page 11 for submittal information) and requests an appointment with the DNR for a pre-application meeting. The consultant should also send a copy of the pre-design work to the applicant.

Step 5 - Pre-Design Project Assignment: The DNR receives the pre-design feedlot information packet and assigns it to an environmental engineer. As soon as possible, the environmental engineer forwards copies of the pre-design packet to a DNR geologist and to the corresponding DNR field office. The environmental engineer and/or geologist conduct a preliminary assessment to identify any issues, risks or barriers to be discussed at the pre-application meeting. The DNR's environmental engineer or geologist will determine whether a copy of the pre-design packet should also be forwarded to the DNR Flood Plain Section.

Step 6 - Pre-Application Meeting: Within ten days following receipt of the pre-design packet, the environmental engineer schedules a meeting or conference call with the consultant and sends out the invitations, including an agenda, to the applicant, consulting engineer, geologist, appropriate DNR field office personnel and, if necessary, the flood plain staff.

Application Preparation

Step 7 - Conducting the Pre-Application Meeting: The purpose of the meeting or conference call is to determine what components of the plan and permit application will be necessary in order to meet all state requirements and to ensure the "fast track" permitting process. The DNR's environmental engineer will conduct the meeting and will follow the agenda (see page 12 for a template).

Step 8 - Pre-Application Meeting Minutes: The environmental specialist from the field office compiles and distributes meeting minutes to all parties within five days of the meeting. The specialist will incorporate any changes that occurred

due to responses from the parties involved.

Step 9 - Consultant drafts preliminary design: The consultant will incorporate any changes or additions to the pre-design determined by the pre-Application meeting as reflected in the minutes. A soils investigation and hydrogeologic report must clearly include the locations of each boring, standard bore-logs, groundwater determination, and interpretation of the data with respect to DNR regulations including, but not limited to:

- Groundwater separation,
- Suitability of soils for liner construction, and
- Suitability of soils for berm construction

Step 10 - Consultant may hire a subcontractor: Because DNR rules require that the soils and hydrogeologic report be prepared by a qualified person ordinarily engaged in the practice of performing soils investigations, a subcontractor may need to be hired if deemed necessary by the consultant. The professional performing the soils investigations gathers appropriate soil information and submits it as requested in the checklist to the consultant.

Step 11 - Consultant sends design to applicant: The consultant makes changes to the preliminary design based on the results of soil borings and data gathered during the groundwater investigation. The applicant may evaluate the feasibility of the design, the cost of the proposed project and decide to accept, reject or further modify the design.

Step 12 - Consultant compiles permit package: Once the applicant accepts the design, the consultant will compile a complete permit package based on the Submittal Checklist No. 1 (pages 3 to 8 of Appendix A, at the end of this manual) if the producer proposes conventional manure control and runoff systems. All necessary supporting documents that are requested in the checklist must be included to ensure the “fast track” permitting process, otherwise the application will be returned to the consultant or applicant.

Step 13 - Consultant submits permit package directly to DNR environmental engineer: The permit package must be submitted as instructed by the DNR’s environmental engineer during the pre-application meeting. If at the pre-design meeting, the DNR engineer agrees to allow for electronic submittal of the permit package, the DNR will still need a signed hard copy of all engineering documents. In addition, the DNR will also need to receive a hard (paper) copy of the national pollutant discharge elimination system (NPDES) permit and the NPDES fee by mail. Please note that the check for the NPDES fee must be payable to the “Iowa DNR”.

If the consultant chooses not to have the pre-application meeting, four copies of the permit package should be sent to the following address at least 90 days prior to beginning any construction:

Iowa Department of Natural Resources
Environmental Services Division
Field Office 3, Gateway North
1900 N Grand Ave Ste E17
Spencer IA 51301

When the applicant/consultant submits only hard (paper) copies of the permit packet to the DNR’s engineering staff, they may be converted into electronic format (scanned into pdf or doc files) and be electronically distributed to the DNR geologist and corresponding field office specialist.

Permit Review

Step 14 - DNR Environmental Engineer receives permit package and determines if it is complete or incomplete: The consultant sends the application and required supporting documents requested in the submittal checklist as noted in step 13. The DNR’s environmental engineer will check the permit package for completeness, ensuring that all required application documents requested in the corresponding submittal checklist have been included.

If the application is complete, the DNR environmental engineer will notify the applicant/consultant that the permit package has been received. At this point the permit package becomes an application. The DNR environmental engineer will log the application into the animal feeding operations database and begin the review process (see next steps).

If the permit package is incomplete, the applicant/consultant will be notified of the deficiencies. The DNR review engineer will determine if the application will be returned to the applicant/consultant. If returned, the applicant must re-start the process by sending in a new application with the information that is missing or deficient in the initial permit application.

Step 15 - DNR Environmental Engineer will send copies of the application to the Field Office along with a Work Request: An environmental specialist at the DNR field office will begin review of the application according to the work request. The field office specialist, during review, may be in contact with the applicant/consultant. Upon completion, this review will be emailed back to the DNR engineer.

Step 16 - DNR Environmental Engineer determines if a geologist review is needed.

If the DNR geologist's review is necessary, a copy of the application will be sent to the pre-assigned geologist for review. Upon completion, the geologist's review will be emailed back to the DNR environmental engineer.

Step 17 - DNR Engineering Review

Within 30 days, following receipt of the application for a conventional system, the DNR environmental engineer will review the application, supporting engineering documents, and all information provided by the geology and field office reviews. Upon completion of this review, the DNR environmental engineer will make a final determination to either deny the permit application or issue the construction permit.

Open feedlots proposing alternative technologies may take more processing time, due to the complexities of such systems.

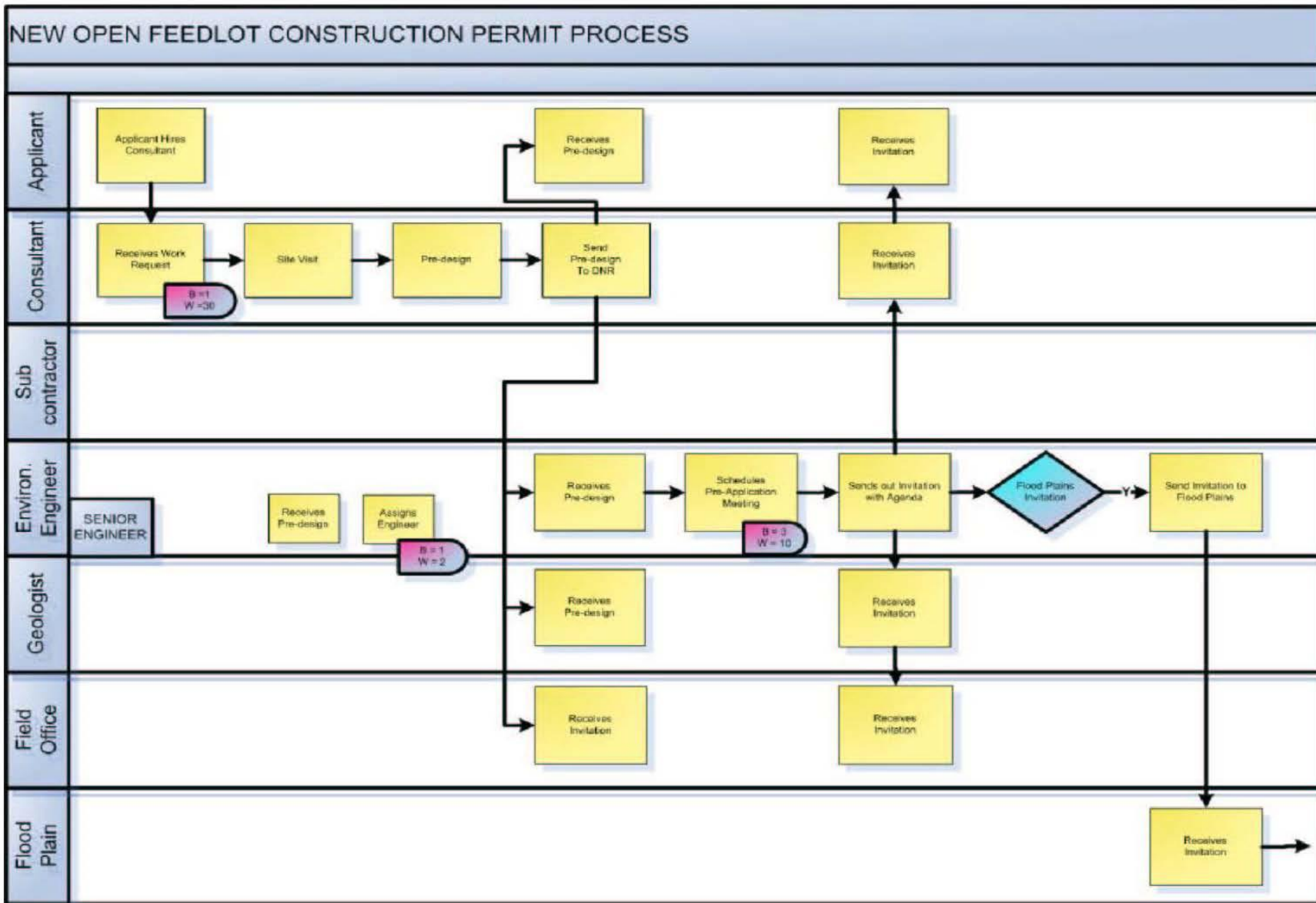
Note that current rules require that DNR approves or disapproves an application within 60 days, following receipt of the complete application. Further, current rules also allow DNR to provide for a continuance of up to 30 days when reviewing the application.

Step 18 - Permit Issuance or Denial

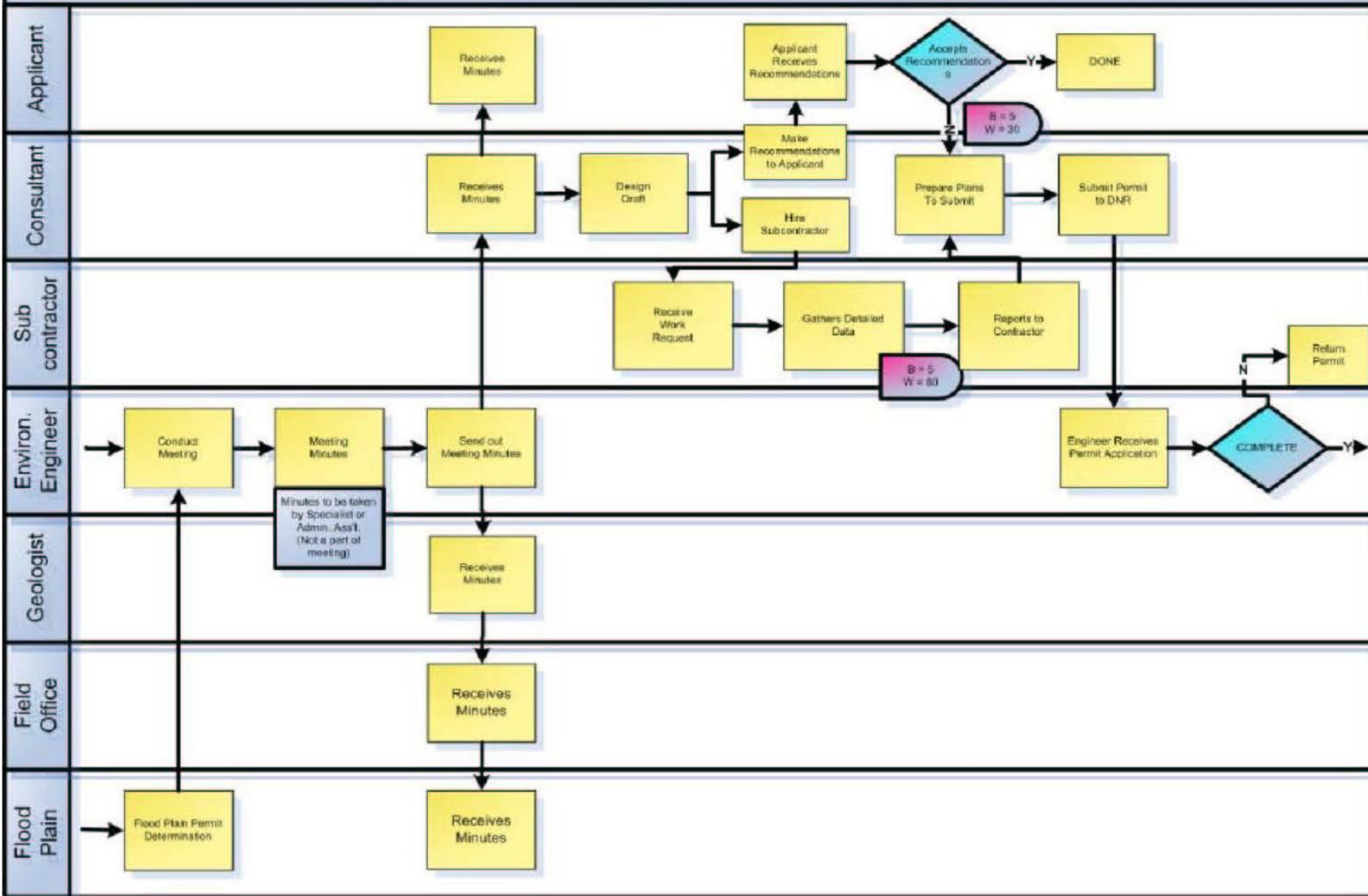
If the application is approved, the DNR environmental engineer will issue the construction permit. Within three days of the approval of the application, the environmental engineer will send copies of the approved permit to the applicant/consultant and the DNR field office. In addition, a complete copy of the approved project will be sent (electronic filing if available or hard copy) to the appropriate Field Office.

If the application is denied, the DNR environmental engineer will send a letter to the applicant/consultant notifying them of the decision to deny the permit. The letter will itemize the issues needing to be addressed/corrected by the applicant/consultant and how they can re-submit a corrected application. The denial letter can be appealed to the Environmental Protection Commission.

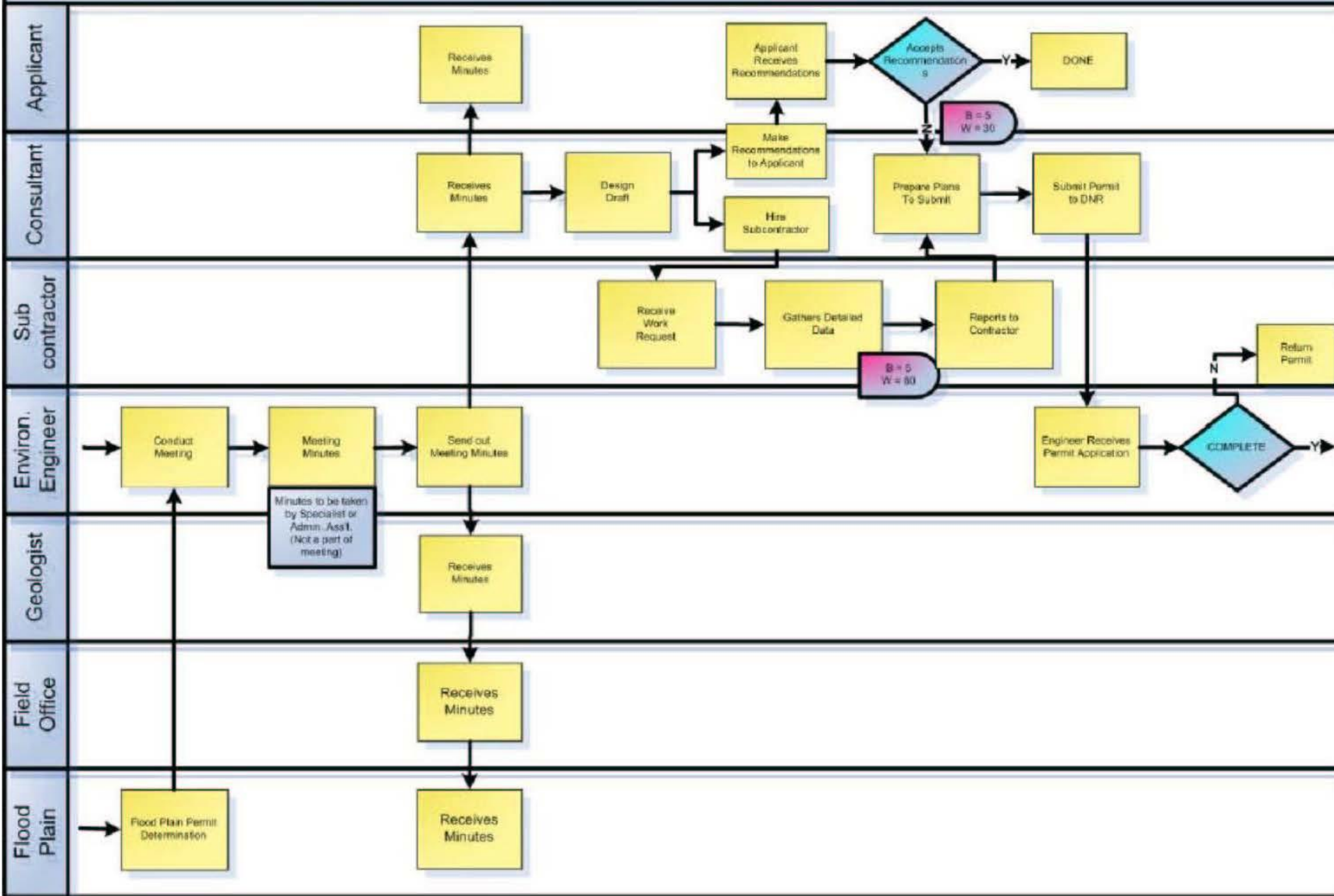
Section 2 Process Flow Chart



NEW OPEN FEEDLOT CONSTRUCTION PERMIT PROCESS



NEW OPEN FEEDLOT CONSTRUCTION PERMIT PROCESS



Section 3 Supporting Information



Pre-design Feedlot Information Packet

Submit pre-design information to the following address:

Iowa Department of Natural Resources
Environmental Services Division
Field Office 3, Gateway North
1900 N Grand Ave Ste E17
Spencer IA 51301

Or you may also e-mail it. Please call: 712-262-4177 for instructions.

The information provided with this packet will be used to set up the optional pre-application meeting or conference call. This is provided as a service to a producer/consultant to increase the speed of permitting and to ensure the “fast track” application process. This packet of information is the initial notification of a proposed open feedlot construction permit application. This information is submitted to the DNR so the review engineer can review basic information prior to setting up a pre-application meeting to discuss the project. The pre-application meeting is provided to help the producer and consultant identify possible environmental risks and barriers to the project.

The following information should be provided:

Facility Name: _____

Contact Name: _____ Phone Number: _____

Proposed Meeting Dates: _____

Pre-design Information/Proposal

Animal Unit Capacity:

- Current: _____
- Proposed: _____

Proposed system from Appendix A of the animal feeding operation rules 567-65 IAC (Appendix A, System 1-5) used for basin design;

OR

Alternative Technology Treatment area for AT system (_____ acres of Vegetated Treatment Area (VTA) or Vegetated Infiltration Basin (VTB)).

Drawing of proposed system superimposed over an aerial photo including outlines of the feedlot area, the location of the storage structures and treatment systems (VIB/VTA). If locations of wells, diversion structures, streams or other features are known, they can be included.

Legal description of the feedlot’s construction site:

_____ (1/4 1/4) _____ (1/4) _____ (Section) _____ (Tier & Range) _____ (Name of Township) _____ (County)

Pre-application Meeting Agenda

The “Fast Track” Permitting Process

Pre-application Meeting Agenda

1. Introductions (All)	5 min.
2. Overview of Rules and Permits (DNR staff)	10 min.
a. Clarifications of Roles	
3. Overview of Project (Consultant)	15 min.
4. Review of Checklist Items - Discussion (All)	20 min.
5. Approval Process & Compliance Items (DNR staff)	10 min.
6. General Questions & Answers (All)	
	<hr/>
Total	70 min.

DNR Pre-Application Meeting Review

Prior to the meeting, the DNR will review the site and identify potential environmental concerns, such as the following:

1. Identify potential groundwater separation issues at the proposed site
2. Identify potential groundwater receptors
3. Identify potential surface water receptors
4. Identify soils issues and concerns related to compacted liner suitability and slope stability.
5. Identify alluvial soils and flood plain concerns. Determine if a flood plain permit is needed or if construction would be allowed.
6. Identify depth to bedrock and karst issues.

At the pre-design meeting, the DNR will discuss the following:

1. Explain how to select a conventional system or what conditions are required for an alternative technologies system. Explain how to ensure enough capacity is provided for conventional systems or the design criteria for alternative technologies.
2. Explain the separation distances to wells; that the DNR field office may not conduct a site survey to verify these separation distances and the consequences of not meeting the distance to wells (well variance will need to be obtained or well will need to be closed).
3. Explain what the requirements are if the groundwater separation is not met.
4. Explain that groundwater monitoring may be required.
5. Explain the checklist and the procedures for applying for a construction permit.
6. Explain the consequences of not submitting all the information requested at the pre-design meeting (application will be returned) or submitting incorrect information (application will be denied).
7. Explain that minutes of the meeting will be sent.



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Appendix A

Open Feedlot Construction Permit Application Form



OPEN FEEDLOT¹ OR COMBINED² OPERATION Construction Permit Application Form

INSTRUCTIONS:

Prior to construction, complete Section 1 to determine if a construction permit is required. If a construction permit is required, complete the rest of the form. Then, sign it and mail it as instructed in the submittal checklist No. 1 (pages 3 to 7). See page 7 for information regarding additional permits that may be required to your open feedlot.

SECTION 1 - Is a construction permit required?

If any of the following criteria are met, a construction permit is required prior to constructing, expanding or modifying the manure control system at an open feedlot or a combined operation or prior to repopulating an open feedlot operation. Check all boxes that apply:

Criteria

- A) An open feedlot or a combined operation required to be issued a National Pollutant Discharge Elimination System (NPDES)³ permit. This includes (check one box):
 - A large CAFO⁴, as defined in [567 Iowa Administrative Code \(IAC\) 65.100\(455b, 459A\)](#). You must combine same type of animals in confinement⁵ operation buildings and open feedlot pens that are under common ownership or management. See page 8 for CAFO definitions.
 - A medium CAFO⁴, as defined in [567 IAC 65.100\(455B,459,459A\)](#). You must combine same type of animals in confinement⁵ operation buildings and open feedlot pens that are under common ownership or management. See page 8 for CAFO definitions.
 - A designated CAFO⁴, as defined in [567 IAC 65.100\(455B,459, 459A\)](#). See page 8 for CAFO definitions.

And any of following is planned (check one box):

- Construction or expansion of a settled open feedlot effluent basin.
- Construction or expansion of an Alternative Technology (AT) system⁶.
- Installation of a settled open feedlot effluent transfer piping system.
- B) The animal unit capacity (AUC)⁷ of the open feedlot operation will be increased to more than the AUC⁷ approved by the department in a previous construction permit. To calculate the AUC⁷, use Table 1 (page 2.)
- C) The volume of settled open feedlot effluent, settleable solids or open feedlot effluent stored at the open feedlot operation will be increased to more than the volume approved by the department in a previous construction permit.
- D) Repopulation of an open feedlot operation if it was discontinued for 24 months or more and the AUC⁷ would be 1,000 AU or more. To calculate the AUC⁷, use Table 1 (page 2.)

SECTION 2 - General Information

A) Name of operation: _____
 Location: _____
 (1/4 1/4) (1/4) (Section) (Tier & Range) (Name of Township) (County)

B) Owner information:
 Name: _____ Title: _____
 Address: _____
 Telephone: _____ Fax: _____ Email: _____

C) Person to contact with questions about this application (if different than owner):
 Name: _____ Title: _____
 Address: _____
 Telephone _____ Fax: _____ Email: _____

¹Open Feedlot: Unroofed or partially roofed area where livestock or poultry are confined for more than 45 days out of any 12-month period.
²Combined: combined operation includes both of the other two definitions in items 1 & 5.
³NPDES permit as defined in rule [567 IAC 65.100\(455B,459,459A\)](#). See page 7 for instructions on how to download the open feedlot operation rules.
⁴CAFO: Concentrated Animal Feeding Operation as defined in rule [567 IAC 65.100\(455B,459,459A\)](#). You must combine same type of animals, in confinement buildings and open feedlot pens that are under common ownership or management. To calculate the animal capacity of the operation or combined operation, use Table 1 (on page 2.) If the combined animal capacity meets the large CAFO or medium CAFO definitions, your operation is a CAFO. A CAFO also includes a designated CAFO. See page 7 for instructions on how to download the open feedlot operation rules and page 8 for a CAFO description.
⁵Confinement: Totally roofed area where livestock or poultry are confined for more than 45 days out of any 12-month period.
⁶AT systems require extensive monitoring and reporting which will be required conditions in any NPDES permit. An application for a permit does not guarantee that a construction permit and NPDES permit will be granted or that any NPDES permit will be renewed.
⁷AUC: Animal Unit Capacity as defined in rule [567 IAC 65.100\(455B, 459,459A\)](#). You must combine animals in confinement buildings and open feedlot pens that are under common management or ownership. See page 7 for instructions on how to download the rules.) To calculate the AUC of the operation use Table 1 (on page 2.).

D) Adjacency criteria: do you own another open feedlot operation, or do you manage another open feedlot operation that is located within 1,250 feet of the open feedlot operation that is applying for a construction permit?

- Yes. Include the animals from the adjacent feedlot(s) in Table 1 (below). No.

E) This construction permit application is for:

- A new open feedlot operation
- Expansion of an existing open feedlot operation
- Modification of the manure control system at an existing open feedlot operation
- Reopening an open feedlot operation that was discontinued for 24 months or more
- An Alternative Technology (AT)⁶ manure control system at an open feedlot operation
- An animal feeding operation that after combining the same type of animals in confinement buildings and open feedlot pens, under common ownership or management, meets the definition of large CAFO⁴, medium CAFO⁴ or designated CAFO⁴, that is proposing to install manure and runoff controls

F) Animal capacity and AUC⁷ of the animal feeding operation:

- If the operation has animals housed in confinement buildings and open feedlot pens that are under common ownership or management, for each animal type enter the current and proposed number of head in columns [1] and [2]. Add the number of head entered in columns [1] and [2], for each animal type. For each row, look at the Total No. of Head (combined operations) and determine if it meets or exceeds the large CAFO⁴ or medium CAFO⁴ definitions.
- If this is only an open feedlot operation, for each row enter the current and proposed number of head in column [2] and determine if it meets or exceeds the large CAFO⁴ or medium CAFO⁴ definitions. If the open feedlot maintains more than one animal type, add all animal units in open feedlots and determine if the Total AUC⁷ is 1,000 AU or more. Also, if you answered "Yes" in SECTION 1, D) (adjacency), include the animals of the adjacent open feedlot operation(s).
- If the Total number of head for each animal type at an open feedlot or at a combined CAFO⁴, meets or exceeds the large CAFO⁴ or medium CAFO⁴ definitions, or if the Total AUC⁷ at the open feedlot operation meets or exceeds 1,000 AU, your operation is a CAFO⁴. See page 8 for CAFO⁴ definitions.

Table 1: Animal Capacity and Animal Unit Capacity (AUC⁷)

Animal Type	Confinements		Open Feedlots				Combined
	Current No. Head	Proposed No. Head [1]	Current No. Head	Proposed No. Head [2]	x Factor	= AUC ⁷	Total No. Head [1] + [2]
Cattle (other than veal calves or mature dairy cows) which includes beef cattle, steers, cow-calf pairs, dairy heifers or immature dairy					1.0		
Veal calves					1.0		
Mature dairy cows (milked or dry)					1.4		
Swine, 55 lbs. or more					0.4		
Swine nursery, 15 to 55 lbs.					0.1		
Sheep and goats, including lambs					0.1		
Chicken broilers, 3 lbs. or more					0.01		
Chicken broilers, less than 3 lbs.					0.0025		
Chicken layers, 3 lbs. or more					0.01		
Chicken layers, less than 3 lbs.					0.0025		
Turkeys, 7lbs or more					0.018		
Turkeys, less than 7 lbs.					0.0085		
Horses					2.0		
Total AUC⁷:							

My animal feeding operation is:

- An open feedlot that is a large CAFO⁴
- A combined CAFO⁴ that is also a large or medium CAFO⁴
- An open feedlot that is a medium CAFO⁴
- A designated CAFO⁴

I hereby certify that the information contained in this application is complete and accurate.

Signature of owner(s) _____ Date: _____

CAVEAT: This form is only a summary of Iowa Code chapter 459A and the DNR's amended administrative rules. It is a guidance document and should not be used as replacement for the statutory provisions and administrative rules (collectively, the law). While every effort has been made to assure the accuracy of this information, the law will prevail in the event of a conflict between this document and the law.

Applicant's Submittal Checklist No. 1
Open Feedlots¹ with Conventional Systems ([567 IAC Chapter 65, Appendix A](#)) or AT Systems⁶

Submit the information requested in this checklist and include this checklist with your application. Incomplete applications will be immediately returned to applicant. If included with the construction permit application, the NPDES³ permit application form and NPDES fee should be the first page of the application package.

Mail one package containing (4) copies, unless indicated otherwise, of Items 1 through 6, and if applicable Item 7, as instructed on page 7 and in the following order:

Item 1 - NPDES³ permit application form and NPDES fees.

**Applicant/
Consultant**

Item

- NPDES³ permit application and fees ([Forms 542-4001 and 542-1250](#)) are included. Include a check payable to Iowa DNR.
- One (1) copy of the Nutrient management plan (NMP) if an NPDES³ permit is to be submitted.
- One (1) copy of the copy of public notice for the nutrient management plan and anti deg analysis.

Item 2 - Construction permit application form [DNR Form 542-1427](#), completed and signed by the owner (previous pages.)

Item 3 - Engineering report Must be stamped and signed (on original) by a licensed professional engineer (PE) in the state of Iowa or by an engineer of the Natural Resources Conservation Service (NRCS). The report shall describe in detail the proposed manure control system and the feedlot runoff control system ([567 IAC Chapter 65, Appendix A, Systems 1 to 5](#)) or AT System⁶ being proposed, including calculations that show the detailed system requirements:

**Applicant/
Consultant**

Item

- Animal unit capacity (Table on previous page)
- Number of acres and estimated volume of runoff from the unpaved feedlot area.
- Number of acres and estimated volume of runoff from the paved feedlot area.
- Number of acres and estimated volume of runoff from cropland, pasture and woodland draining into the runoff control system; and the estimated runoff expected from the 25-yr, 24-hr storm event.
- Number of square feet or acres (whatever best describes the facility) and estimated volume of runoff from total roofs, farmstead and driveways draining into the runoff control system. If none, please enter "0."
- The volume of processed wastewater which drains into the runoff control system during a 12-month period. If none, please enter "0."
- The volume of open feedlot effluent from other sources which discharge into the control system during a 12-month period. Drainage areas must include areas for feed storage and bulk material storage. Drainage from these areas **cannot** be diverted. If none, please enter "0."
- The volume required in the settled open feedlot effluent basin to store the feedlot runoff.
- The volume provided in the settled open feedlot effluent basin.
- Volume required in the AT System or solids settling facility to contain expected open feedlot effluent as required in [567 IAC 65.110\(1\)](#).
- Volume provided in the AT System or solids settling facility.

Initials

I have reviewed and submitted the information for engineering report (Engineer initial):	
I have reviewed the engineering report that has been submitted to the DNR and it meets DNR requirements (DNR representative initial):	

Item 4 - Engineering plans. Must be stamped and signed (on original) by a licensed professional engineer (PE) in the state of Iowa or by an engineer of the Natural Resources Conservation Service (NRCS). The plans must include the following:

**Applicant/
Consultant**

Item

- A certification that the design of the settled open feedlot effluent basin and/or AT System⁶ complies with the construction design standards of Division II of chapter 65, as required in [567 IAC 65.105\(3\)"b."](#)
- Information (e.g. maps, drawings, aerial photos, etc.) that shows the location of your feedlot, including the name of the feedlot and legal description (¼ ¼, ¼, Section, Tier and Range, Township name, County), as required in [567 IAC 65.107\(2\)"h."](#)
- The location of any other open feedlot operation that you own or manage that is located within 1,250 feet of the open feedlot operation that is applying for a construction permit; or that is adjacent, as defined in [567 IAC 65.107\(2\)"h"\(2.\)](#)
- A plan view that shows the location of the feedlot(s), proposed solids settling basin, settled open feedlot effluent basin (effluent control structures) and AT System⁶ components:
 - Include dimensions and available storage volume.
 - Clean water diversions.
- Identify separation distances to existing private and public wells to show that the separation distance requirements of [567 IAC 65.108\(1\) and \(2\)](#) are being met.
- Cross sectional view(s) of the proposed settled open feedlot effluent basin:
 - Indicate settled open feedlot effluent basin dimensions at inside top of berm and include maximum liquid level.
 - Indicate elevations at settled open feedlot effluent basin tops and bottoms, also the natural and final grade elevations.
 - Indicate drainage directions and effluent system flowpath.
 - Basin inlet and outlet details (manure transfer pipe.)
 - Indicate the proposed liner thickness and the berm widths.
 - Indicate the side slope of the basin.
 - If a groundwater lowering system is required [567 IAC 65.109\(3\) "c"](#), include details and calculations.
 - All elevations referenced to an identified benchmark – County benches as established by NGVD29Datum (USGS topographic map, MSL)
- Recommended** Details for Drawings:
 - Erosion control (riprap or equal) provided at basin inlets, outlets, spillways, and corners.
 - Overflow emergency spillway.
 - Maximum 3:1 berm slope (inner and outer.)

Initials

I have reviewed and submitted the information for engineering drawings (Engineer initial):	
I have reviewed the engineering drawings that has been submitted to the DNR and it satisfies DNR needs (DNR representative initial):	

Item 5 - Soils and Hydrogeologic Report. The soils and hydrogeologic report shall address all of the following requirements:

**Applicant/
Consultant**

Item

- The soils and hydrogeologic conditions, subsurface soil classification and the result of soils investigation at the proposed construction site must be conducted as required in [567 IAC 65.109\(2\), "a" to "c"\(1\)-\(7\)](#) and/or [567 IAC 65.110\(4\)](#):
 - The report must be prepared by a qualified person ordinarily engaged in the practice of performing soil investigations.

- A detailed description of three continuous core samples – minimum of three per Cell (Settled Open Feedlot Effluent Basin), must be included. All boring logs should provide soil profile characterization to identify both depth to seasonal high ground water table and Loess/Till interface – to a minimum of 10 feet below the proposed basin bottom.
- Carbonated bedrock depth determination: If proposed basin is in karst according to DNR siting atlas the soils investigation shall include a description of one 25 ft deep coring below bottom of proposed structure OR a well log from within 100 feet of the proposed structure (well logs may be found at the [GEOSAM](#) website). If more than 25 feet or more of unconsolidated(suitable) material exists then the site is not considered to be karst.
 - If site is in karst or drains to a known sinkhole then settled open feedlot effluent basins and all manure storage structures must be formed, pursuant to [567 IAC 65.109\(4\)](#).
 - Where bedrock is encountered, but site is not in karst, determine if the bedrock separation requirement in [567 IAC 65.109\(5\)](#) is met.
- Groundwater Hydrology, [567 IAC 65.109\(3\)](#), [567 IAC 65.110\(5\)](#):
 - Determine if the minimum groundwater separation required in [567 IAC 65.109\(3\)"b"](#) is met.
 - Determine if an artificial groundwater lowering system as required in [567 IAC 65.109\(3\)"c"](#) is needed.
 - Determination of groundwater table must be done as required in [567 IAC 65.109\(3\)"a"](#) or 567 IAC 65.110(5). The measured groundwater elevations rarely represent the seasonal groundwater table. Therefore, soils characteristics and NRCS soils data must be considered.
 - Water table map should be constructed from the water table levels observed in the soil corings and monitoring wells. This may also be included in the cross sectional view of the engineering plans.
 - Indicate in a cross sectional view, the estimated surface groundwater table. This may also be included in the cross sectional view of the engineering plans.
 - Verify that all deep soil corings and temporary monitoring wells will be plugged following sampling.
 - If known, identify location of proposed long-term monitoring (as needed by the DNR determination) and based upon the Geotechnical report submitted. This may also be included in the plan view or cross sectional view of the engineering plans.
 - Verify soil suitability for construction of the compacted liner.

	Initials
I have reviewed and submitted the information for soil & hydrogeological report (Engineer initial):	
I have reviewed the soil & hydrogeological report that has been submitted to the DNR and it satisfies DNR requirements (DNR representative initial):	

Item 6 - Technical Specifications. Must be prepared by a licensed professional engineer (PE) in the state of Iowa or by an engineer of the Natural Resources Conservation Service (NRCS), that address the following:

**Applicant/
Consultant**

Item

- The technical specifications for the basin and/or AT System⁶ must describe in detail, all design, construction and specifications for the basin to meet the design requirements of [567 IAC Chapter 65, Division II](#) "Open Feedlot Operations":
- Technical specifications for the basin and/or AT System⁶ to meet drainage tile removal standards of [567 IAC 65.109\(1\)](#) and 567 IAC 65.110(3).
- The technical specifications shall also describe the liner construction standards for the basin to meet the requirements of [567 IAC 65.109\(7\)](#), "[a](#)"(1)-(2) or "[b](#)":
 - Provide minimum of one-foot thick compacted clay liner on interior berms and bottom of settled open feedlot effluent basin(s).
 - Conduct tests to show that percolation of berm and bottom do not exceed 1/16 inch per day (1.8×10^{-6} cm/s) at the design depth.

- Summary of predictive computer modeling results for any proposed AT System⁶ as required by [567 IAC 65.110\(6\)"a"](#) and [65.110\(7\)"a"](#).

Initials	
I have reviewed and submitted the technical specifications (Engineer initial):	
I have reviewed the technical specifications that has been submitted to the DNR and it satisfies DNR requirements (DNR representative initial):	

- Item 7 - Well variance, if needed.** In accordance to [567 IAC 65.108\(3\)](#), the applicant may request a well variance if the proposed open feedlot effluent structures do not comply with the well separation distance requirements of [567 IAC 65.108\(1\) and 65.108\(2\)](#). The well variance request shall be made in writing to the Director, at the time the construction permit application is submitted. Call (712) 262- 4177 for well variance procedure.

- A. For each well that does not meet the required separation distance, the following items must be submitted:

1. Well location:
- Legal description of each well in 1/4 1/4, 1/4, Section, Tier, Range, and County.
 - Image of proposed site (in the form of a site plan or drawn on an aerial photo) with well locations and distances marked to proposed new structures and other landmarks.
2. Recent water analysis for nitrate-N from a certified laboratory.

- B. If gross contamination is indicated, submit as many of the following items as possible:

1. Driller's log submitted by a certified well driller. These logs may be from local drillers, the GEOSAM website, the Private Well Tracking System, county sanitarians, or other county agencies.
2. Total well depth.
3. Screen materials, length, and depth.
4. Casing diameter and depth.
5. Static water level (SWL) and pumping water level (PWL) as plumbed/measured by a certified driller, pump installer, professional engineer, or county sanitarian.
6. Description of wellhead protection such as a concrete pad around the well, runoff control, berms, and buffers.
7. Details of water use such as the livestock or human consumption and daily pumpage rates.

Note: Water withdrawal permits are required if the daily pumpage rate will exceed 25,000 gallons per day.

8. Additional water quality characteristics from recent analyses.

Initials	
I have reviewed and submitted the well variance information, if needed (Engineer initial):	
I have reviewed the well variance information that has been submitted to the DNR and it satisfies DNR requirements (DNR representative initial):	

Instructions on finding the open feedlot¹ operation rules – [567 IAC Chapter 65](#):

1. Go to www.iowadnr.gov and click on “Environmental Protection”, then select “Animal Feeding Operations”, then select “AFO Rules and Regulations”.
2. Scroll until you find “Current Rules” and click on Chapter 65.
3. Scroll until you find the open feedlot operation rules which are in “DIVISION II” (Note that “DIVISION I” applies to confinement⁵ feeding operations.)

Information about other permits that may be required:

This section is for informational purposes only. The applicant is responsible for verifying any additional permit requirements, with the corresponding DNR office, and for obtaining any other local, state or federal permits that may be required to the open feedlot operation.

- Open feedlot¹ operation structures exceeding storage capacity or dam height thresholds or located on a flood plain or within a floodway of a river or stream may be required to obtain DNR flood plain development permits and provide protection from inundation by flood waters, as specified in the Iowa Administrative Code, 567-Chapters 71 and 72. For more information contact Kelly Stone of the Flood Plain Management Program at (515) 725-8312 or visit: <http://www.iowadnr.gov/insidednr/regulatoryland/floodplainmanagement/floodplaindevpermit>.
- A Storm water permit General permit No. 2, associated with construction activities is required, prior to disturbing any soil if the total construction site area to be disturbed equals or exceeds one (1) acre of land. This includes the clearing, grading and excavation of the animal feeding operation structures, even with phased construction. The permit must be obtained before commencement of soil disturbing activities for the project. For more information contact the Storm Water Program at (515) 725-8415 or visit: <http://www.iowadnr.gov/insidednr/regulatorywater/stormwater>.
- A water use permit is required for the withdrawal or diversion of more than 25,000 gallons per day of water. Water purchased from municipal or rural water systems is excluded. For additional information, contact the Water Supply Section at (515) 725-0336 or visit: <http://www.iowadnr.gov/insidednr/regulatorywater/watersupplyengineering/waterallocationuse>.

Questions:

- Questions about open feedlot¹ construction permit requirements or regarding this form should be directed to an engineer of the animal feeding operations (AFO) Program at (712) 262-4177 or go to <http://www.iowadnr.gov> (select link to “Environment”, “Land Stewardship”, “Animal Feeding Operations” and “Open Feedlots”.)
- To contact the appropriate DNR Field Office, go to <http://www.iowadnr.gov/insidednr/dnrstaffandoffices/environmentalfieldoffices>.

Mailing Instructions:

If you opt to have the pre-design meeting with DNR to ensure the “Fast track” permitting process (see Open Feedlot Construction Permit Manual), mail the construction permit application and requested documents in Checklist No. 1, as instructed in the pre-design meeting with DNR.

If you choose not to have the pre-design meeting, at least 90 days before the date that construction, installation or modification is scheduled to start, mail 4 copies of the construction permit application documents, Items 1 through 6, and if applicable Item 7 to the following address:

**Iowa Department of Natural Resources
Environmental Services Division
Field Office 3, Gateway North
1900 N Grand Ave Ste E17
Spencer IA 51301**

CAFO DEFINITIONS

“Large concentrated animal feeding operation” or “large CAFO.” An AFO is defined as a large CAFO if it stables or confines as many as or more than the numbers of animals specified in any of the categories shown below. An AFO is also defined as a large CAFO, if after combining animals in confinement structures and open feedlot pens, it meets or exceeds any of the following:

1. 700 mature dairy cows, whether milked or dry;
2. 1,000 cattle, including but not limited to heifers, steers, bulls, veal calves and cow/calf pairs;
3. 2,500 swine each weighing 55 pounds or more;
4. 10,000 swine each weighing less than 55 pounds;
5. 500 horses;
6. 10,000 sheep or lambs;
7. 55,000 turkeys;
8. 30,000 laying hens or broilers, if the AFO uses a liquid manure handling system;
9. 125,000 chickens (other than laying hens), if the AFO uses other than a liquid manure handling system;
10. 82,000 laying hens, if the AFO uses other than a liquid manure handling system;
11. 1,000 animal units, where more than one category of animals is maintained using the same type of operation.

“Medium concentrated animal feeding operation” or “medium CAFO.” The term medium CAFO includes any AFO with the type and number of animals that fall within any of the ranges listed in paragraph “a” of this definition and which has been defined or designated as a CAFO. An AFO is defined as a medium CAFO if:

a. The type and number of animals that it stables or confines fall within any of the ranges shown below. You must combine animals in confinement structures and open feedlot pens:

- (1) 200 to 699 mature dairy cows, whether milked or dry;
- (2) 300 to 999 cattle, including but not limited to heifers, steers, bulls, veal calves and cow/calf pairs;
- (3) 750 to 2,499 swine each weighing 55 pounds or more;
- (4) 3,000 to 9,999 swine each weighing less than 55 pounds;
- (5) 150 to 499 horses;
- (6) 3,000 to 9,999 sheep or lambs;
- (7) 16,500 to 54,999 turkeys;
- (8) 9,000 to 29,999 laying hens or broilers, if the AFO uses a liquid manure handling system;
- (9) 37,500 to 124,999 chickens (other than laying hens), if the AFO uses other than a liquid manure handling system;
- (10) 25,000 to 81,999 laying hens, if the AFO uses other than a liquid manure handling system;
- (11) 300 to 999 animal units, where more than one category of animals is maintained using the same type of operation; and

b. Either one of the following conditions is met:

- (1) Manure or process wastewater is discharged into waters of the United States through a manmade ditch, flushing system, or other similar man-made device; or
- (2) Manure or process wastewater is discharged directly into waters of the United States which originate outside of and pass over, across or through the facility or otherwise come into direct contact with animals confined in the operation.

“Designated CAFO” means an AFO that has been designated as a CAFO pursuant to rule [65.103\(455B,459A\)](#).

65.103(1) The department may evaluate any animal feeding operation that is not defined as a large or medium CAFO, and designate it as a CAFO if, after an on-site inspection, it is determined to be a significant contributor of manure or process wastewater to waters of the United States. In making this determination, the department shall consider the following factors:

- a. The size of the operation and the amount of manure or process wastewater reaching waters of the United States;
- b. The location of the operation relative to waters of the United States;
- c. The means of conveyance of manure or process wastewater to waters of the United States;
- d. The slope, vegetation, rainfall, and other factors affecting the likelihood or frequency of discharge of manure or process wastewater into waters of the United States; and
- e. Other relevant factors.

65.103(2) No animal feeding operation with an animal capacity less than that specified for a medium CAFO shall be designated as a CAFO unless manure or process wastewater from the operation is discharged into a water of the United States:

- a. Through a man-made ditch, flushing system, or other similar man-made device; or
- b. Which originates outside of and passes over, across or through the facility or otherwise comes into direct contact with animals confined in the operation.

65.103(3) The owner or operator of a designated CAFO shall apply for an NPDES permit no later than 90 days after receiving written notice of the designation.

The DNR’s mission:

To conserve and enhance our natural resources in cooperation with individuals and organizations to improve the quality of life for Iowans and ensure a legacy for future generations.

Appendix B Sample Soils Description

Clearly labeled boring number should correlate to site map and cross section

LOG OF SUBSURFACE DATA

PROJECT: _____

BORING NO: 9

PROJECT NO: _____

DATE DRILLED: 8/18/03

DRILLED BY: _____

CLASSIFIED BY: _____

SAMPLE LOCATION	MC%	O.D. pf	UCS pf	ELEVATION (USGS)	DEPTH BELOW SURFACE	SOIL DESCRIPTION	USCS Symbol
				1429.5	GRADE		
					0 -	BLACK SILT LOAM (TOPSOIL)	
					2 -		
					4 -	DARK BROWN CLAY LOAM, MEDIUM CONSISTENCY	CL
5'	17.2	73.1	0	1421	PROPOSED POND BOTTOM		
				1422.4	MEASURED WATER TABLE 8/30/03		
					6 -	LEAN CLAY, BROWN MOTTLED WITH GRAY, RATHER STIFF, FEW FINE YELLOWISH BROWN Fe ACCUMULATIONS	CL
					8 -		
10'	33.7	94.3	0		10 -	FAT CLAY, GRAY, RATHER STIFF, MOIST, FEW BROWN ANI BROWN Fe ACCL	
					12 -		
					14 -		
16'	29.2	96.8	0		16 -	FAT CLAY (GLACIAL TILL), YELLOWISH BROWN, STIFF TO VERY STIFF WITH DEPTH, MOISTURE DECREASES WITH DEPTH	CH
					18 -		
20'	24.1	106.4	1000	1409.5	BOTTOM OF BORING		
					20 -		
					22 -		
					24 -	* CONVERTED TO TEMPORARY MONITORING WELL	
					26 -		

Indication of bottom of structure

Water table elevation marked with date measured

Soils descriptions including composition, texture, color, and mottling, if appropriate

Geological interpretations where possible