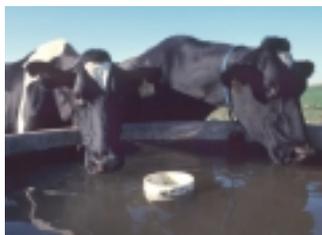
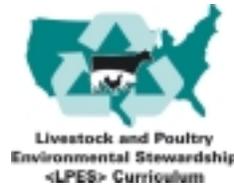


Example My EMS:

An Environmental Management Systems (EMS)
Workbook for

Lawrence Land & Cattle Company

< Insert farm or ranch name here. >



Developed by the **Partners for Livestock EMS Project**

Approved by: John Lawrence Date: Aug. 2005
< Signature >

Approved by: Dad Lawrence Date: Aug. '05
< Signature >

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Work Sheet 1. Significant Environmental Issues?

Purpose

This work sheet identifies environmental issues significant to your livestock or poultry operation. By identifying these issues, you are focusing your efforts on those of greatest importance to people both internal and external to the operation. In the first column, list the issues you circled on “Handout 1. Identification of Significant Environmental Issues,” and in the second column, the activities related to that issue.

Significant Environmental Issue	Farm/Ranch Activities That Could Impact This Issue
Odor & flies	Manure storage, land application, open lots
Appearance of facility	Building site, sign by road
Nutrient runoff to surface water	Land application, open lots, manure storage
Groundwater	Land application, open lots, manure storage, wells
Chemical handling & storage	Chemical shed, mixing & application sites
Soil erosion	Tillage, maintenance of existing conservation structures



Fact Sheet 2. My Environmental Policy Statement

Purpose

This work sheet contains your environmental policy statement, which contains the baseline stewardship commitments for your operation and framework for your objectives. It needs to be communicated with those internal and also external to your operation.

Possible Topics:

Farm or ranch description and purpose?

The Lawrence Land and Cattle Co. (LLCC) is a fourth-generation family farm located in Antelope County, Nebraska. We annually finish 10,000 head of cattle and farm approximately 900 acres of cropland. We strongly believe in providing the opportunity to future generations to continue LLCC by operating a financially profitable business and sustaining the health of the resources upon which we depend.

Environmental issues significant to the farm or ranch?
(from “Handout 1. ID of Significant Environmental Issues.”)

Several of our fields contain surface water and/or irrigation wells. Our farm also has sandy soils. These items as well as an assessment of our operation showed that odor and flies, the appearance of our facility, ground and surface water quality, chemical handling and storage, and soil erosion are our highest priority environmental issues.

Stewardship commitments
(from “Handout 2a. Example Stewardship Commitments”)

We are committed to complying with relevant environmental laws and managing our operation in a way that minimizes negative impacts on our natural resources. We strive to continually improve our management through awareness and education about improved technologies and practices and adopting those when feasible.

Signature: John Lawrence ***Dad Lawrence*** Date: August 2005



Work Sheet 3. Communications

Purpose

To outline and assign responsibilities related to communication regarding the EMS and environmental performance. Change or add to these responsibilities as needed.

Internal Communication Responsibilities

All key personnel are responsible for regularly communicating with each other in the development, implementation, maintenance, and improvement of the EMS. They also are responsible for informing, encouraging, and listening to all other farm/ranch staff to help ensure proper implementation and recognition of needed improvements. Specifically,

John is responsible for familiarizing new employees with the policy statement, appropriate EMS plans, and the employee's individual responsibilities.

John is responsible for evaluating if employees have the necessary skills or knowledge to carry out their assigned responsibilities.

John & Dad are responsible for maintaining awareness about environmental regulations that may apply to the operation and regularly updating the farm manager (if they are two different people) about potential regulatory compliance issues.

External Communication Responsibilities

John is responsible for responding to communication (complaints, requests) from external persons and will do so within 10 days.

(Optional) We actively seek opportunities to share our environmental stewardship efforts with others. (In the space below, list tours or open houses you host and descriptions of your outreach efforts such as newsletters or a website. Use the back of this page if more space is needed).

We print a quarterly newsletter for our customers and host an annual open house for established and potential customers. We have hosted field days with NRCS and the Extension office to show soil conservation practices.

(Optional) We strive to improve our communication and public image with our neighbors and surrounding communities. In the space below, list the activities you plan to implement (see "Handout 3. External Communication Ideas" for ideas).

Activity	Implementation Date	
	Proposed	Actual
Continue quarterly newsletter	Ongoing	
Continue annual open house	Ongoing	
Notify neighbors when spreading manure	Fall 05	
Share policy with customers and contractors	Dec 05	



Work Sheet 4. What Are My Priorities?*

Directions: List your significant issues from “Work Sheet 1” in the first column, then fill in the information requested in the other three columns. When finished, circle or somehow distinguish priorities that will be expanded into a stewardship plan (“Work Sheet 6. Stewardship Plan for . . .”).

Significant Environmental Issues (from Work Sheet 1)	Legal Requirements What plans are already developed or requirements do you need to meet as part of your permit or other legal obligations? (See “Handout 4. Environmental Regulations Affecting Animal Feeding Operations.”)	Incentive Program Obligations Do you participate in any cost share or incentive programs (EQIP, CRP, buffer strip program) that are related to this significant issue?	Assessment and Proactive Efforts Hae you already internally identified actions of interest or improvements needed?)
Odor & flies			Personal concern, OFAER assessment
Appearance of facility			Personal concern, OFAER assessment
Nutrient runoff to surface water	State operating permit & (anticipated) NPDES permit		
Groundwater	State operating permit & (anticipated) NPDES permit		
Chemical handling & storage	Federal pesticide applicator regs, chemigation permit		Personal concern
Soil erosion		CRP	Existing practices are sufficient-no additional action proposed

*A priority can be related items within a box, a single box, a group of boxes, a row, column, or any grouping that makes sense to you.



Work Sheet 5. Assessments Completed

Purpose

Summarize the different environmental issues or components of your system that you have reviewed for environmental risks.

Directions: Every time you complete an assessment, keep a record of the results, file it, and summarize it below.

Environmental Issue or System Component Assessed	Date Completed	Summary of Process Used (list who, any written tools used)
Whole farm	August 5, 2005	Employee & management brainstorming
Whole farm	August 10, 2005	OFAER third-party assessment



Work Sheet 6. Stewardship Plan for:

NPDES Permit

(List priority selected from “Work Sheet 4.”)

1. What is the environmental objective of this plan?

- a. To comply with state permit
- b. To update & improve documentation of existing procedures and plans
- c. Submit NPDES permit application within deadlines

2. How will I measure performance?

- a. Annual inspection by state DEQ
- b. Completion of items listed in action plan (below)
- c. Issuance of NPDES permit

3. Are legal requirements associated with this issue?

Description or Permit Title/Agency	Date Issued	Renewal Date	File Location
State LWCF permit (anticipated) NPDES permit	1990 (2006)	—	Main office

4. What will be done?

List critical steps. ¹	Who is responsible?	Deadline/Frequency?
1. Update nutrient management plan to reflect current farm status & permit requirements. (a) Develop pre-season nutrient plan that includes planned manure & fertilizer amounts & application timing, & accurately credits manure nutrients. (b) Establish record-keeping program & develop forms as needed for (1) manure & soil samples, (2) pre-season nutrient plans, (3) actual manure application rates, (4) application equipment inspection & maintenance, & (5) post season yield & nutrient balance summary. (c) Implement program for (1) soil sampling, (2) manure solids sampling, (3) runoff water sampling, & (4) application equipment calibration.	John, Dad, Crop consultant, Nutritionist, & Secretary	11/1/05
2. Finish emergency plan (in progress).	John/Dad Secretary	12/1/05 Annual
3. Test well for nitrate & bacteria.	John	2/1/06
4. Research & establish manure application setbacks from streams & wells. Develop SOP for manure application personnel.	John	2/1/06
5. Finish & submit NPDES application.	John/Dad	12/05

¹If an existing environmental permit or plan has already been developed, reference the permit or plan and summarize the most critical steps associated with the permit or plan.



Work Sheet 6. Stewardship Plan for:

Odor, Flies, and Appearance

(List priority selected from “Work Sheet 4.”)

1. What is the environmental objective of this plan?

To quickly identify & fix situations that could increase flies & odor emissions
 To reduce standing water in lots, especially near waterers
 To maintain neat, professional appearance of feedlot & farmstead

2. How will I measure performance?

Regular visual inspections & adherence to SOPs

3. Are legal requirements associated with this issue?

Description or Permit Title/Agency	Date Issued	Renewal Date	File Location

4. What will be done?

List critical steps. ¹	Who is responsible?	Deadline/Frequency?
1. Daily waterer & water line inspections (a) Inspect waterers for leaks (b) Report leaks to tractor driver (c) Repair leaks	Cowboys Cowboys Tractor driver	Daily ASAP Within 24 hours
2. Continue to scrape & grade lots according to site plan & SOP	Tractor driver	See SOP
3. Begin rotating fly control products to prevent resistance of flies to chemicals	Tractor driver	ASAP
4. Spilled and/or spoiled feed to be collected & put into manure spreaders rather than swept into lane	Feed truck driver	ASAP
5. Develop backup plan for mortalities in case rendering is unavailable	John	12/1/05
6. Continue mowing, maintenance, painting, & general upkeep of area around feedlot, main office, other farm buildings, & manure storage pond as needed	All	Ongoing

¹If an existing environmental permit or plan has already been developed, reference the permit or plan and summarize the most critical steps associated with the permit or plan.



Work Sheet 6. Stewardship Plan for:

Chemical Handling and Storage

(List priority selected from “Work Sheet 4.”)

1. What is the environmental objective of this plan?

To comply with state regulations & prevent children from accessing storage

2. How will I measure performance?

State inspections of facility & records
 Manager inspections for adherence to safety rules

3. Are legal requirements associated with this issue?

Description or Permit Title/Agency	Date Issued	Renewal Date	File Location
Chemigation permit (Upper Elk-horn resource district)	2005	Annual	Main office
Restricted use pesticide applicator permit (NE Dept. of Agriculture)	2003	Every 3 years	Main office

4. What will be done?

List critical steps. ¹	Who is responsible?	Deadline/Frequency?
1. Continue keeping records as specified in pesticide applicator & chemigation requirements	John & Secretary	Ongoing
2. Install latch out of children's reach on door of chemical/fertilizer storage shed & secure it at all times when not being used.	Tractor driver	ASAP
(a) Continue to lock door every night	John	Daily

¹If an existing environmental permit or plan has already been developed, reference the permit or plan and summarize the most critical steps associated with the permit or plan.



Work Sheet 7. Training Needs

Purpose

To serve as a training “to-do” list. After your management review each year, you can remove this page from the workbook, file it, and create a new list for the upcoming year.

Directions: Review the activities and improvements listed in your stewardship plan(s). Identify if there are training needs for individuals with primary responsibility for critical tasks as well as those who might have to perform a particular task in the absence of the primary person.

Summarize Training Needs	Personnel Needing Training	Date Completed
Communicate new waterer inspection program & importance of repairing leaks quickly	Tractor driver & cowboys	9/1/05
Review new emergency plans	All staff & family	
Review manure application setback requirements & SOP	Tractor driver & part-time helpers	
How to take manure & runoff water samples—follow SOP	Tractor driver & part-time helpers	
How to fill out new maintenance checklists for application equipment	Tractor driver & part-time helpers	
Review SOP on lot scraping & grading, especially around waterers & for storm water control	Tractor driver	9/1/05
Renew pesticide applicator permit	John & Dad	
Renew chemigation permit	John	

If you need to maintain a record of completed training or continuing education (required in some regulatory or certification programs), you can use “Handout 7. Training Log” and incorporate it into this workbook.



Work Sheet 8a. Environmental Records

Purpose

This work sheet summarizes the information that will be recorded to track the operation's environmental performance.

Directions: Review your priorities ("Work Sheet 4," especially your legal requirements), stewardship plans (each copy of "Work Sheet 6" that you made), and summarize environmental records that are or will be kept. Make copies or insert blank paper if more room is needed.

List of Records, Checklists, or Maintenance Logs	Issues to be Addressed	What is acceptable performance?
Waterer & water line inspection	Leaking waterers, daily water meter reading, standing water/mud in lots	20% increase in daily water use requires additional inspection. Leaking waterers fixed in 24 hrs. No standing water in lots 24 hrs after rainfall.
Runoff basin inspection	Structural integrity, Liquid levels	Problems fixed within 2 days. Liquid level 10 ft below spillway on Dec. 21; 8 ft rest of year. All parameters on checklist are acceptable.
Soil test	Soil NO ₃ , P	Soil N used in fertilizer calculations, soil P below 100 ppm
Water test	NO ₃ , coliforms	If NO ₃ above 10 ppm, then treat drinking water & use calculations in nutrient plan, no coliforms present
Manure test	N & P content	Data used in nutrient plan calculations
Manure application	Location, amount, neighbors notified, setback from well & stream	Location & amount applied in agreement with plan, neighbors notified 24 hrs prior, setbacks according to SOP
Restricted use pesticide application	Location, weather, amount, crop, date, chemical used	Applied within label requirements, records complete for possible inspection
Application equipment inspection & calibration	Condition of equipment, application rate	Repairs made within 24 hrs during application season, calibration data used in nutrient calculations
Whole farm nutrient balance	Whole farm N & P balance	Inputs equal outputs



Work Sheet 8b. EMS Records

Purpose

This work sheet summarizes the locations and retention times of important EMS records maintained by the operation.

Record	Location of File	How long are these records retained?
Assessment Results (summarized on "Work Sheet 5")	"Assessment "file in main office	8 yrs
Training Needs (summarized on "Work Sheet 7")	EMS notebook	5 yrs, longer if training issue not addressed
Environmental Records (summarized on "Work Sheet 8")	Main office	8 yrs
Standard Operating Procedures (SOPs) (summarized on "Work Sheet 9")	Main office	Permanent
Emergency Response Plans (ERPs) (summarized on "Work Sheet 10")	Main office	Permanent
Completed Audit Checklists	EMS file in Main office	8 yrs
Completed Management Review Checklists	EMS file in Main office	8 yrs

Briefly describe how you protect your important records from loss or destruction.

Electronic scan of record when it is filed & kept on office computer. CD (updated monthly) containing backups stored in fire-proof safe in office.

Experts recommend that records be retained for at least 3 to 5 years, although some records may be retained indefinitely if useful. Regulatory agencies generally specify a minimum retention time for required records; check your requirements to ensure compliance.



Work Sheet 9. Standard Operating Procedures (SOPs)

Purpose

This work sheet summarizes the SOPs that have been or will be developed and the information needed to ensure they are accessible, understandable, and up-to-date.

Directions: List SOPs you have already developed and answer the questions at the top of each column. Also list activities for which you plan to develop an SOP and fill in the relevant information as each task is completed. Make additional copies or insert a blank piece of paper as needed.

SOP Title (activity)	Who will develop it and when?	Where is it posted?	Do appropriate personnel understand it?	The date of the most current version is?
Lot scraping & grading	Existing	Office file Tractor notebook	Yes	1998
Manure application setbacks	John by 2/1/06			
Manure sampling	Existing	Office file Tractor notebook	Yes	1998
Manure spreader calibration	Existing	Office file Tractor notebook	Yes	2001 (bought new spreader)

- To ensure accuracy, our SOPs are reviewed annually (during the management review).
- We will inform affected personnel, in a timely manner, about changes made to SOPs.
- As soon as possible after their date of hire, we will inform and train new employees about SOPs relevant to their job responsibilities.



Work Sheet 10. Emergency Response Plans (ERPs)

Purpose

This work sheet summarizes the operation’s ERPs and the information needed to ensure they are easily accessible, understandable, and up-to-date.

Directions: List ERPs already developed and answer the questions at the top of each column. Also list emergency situations for which you plan to develop an ERP and fill in the relevant information as each task is completed. Make additional copies or insert a blank piece of paper as needed.

Emergency Situation	Who will develop new plans and when?	Where is it posted?	Does everyone know where it is and understand it?	Has the plan been rehearsed? (if practical)	How often will the plan be reviewed?
Manure storage structure failure	John & Dad by 12/1/05				Next:
Catastrophic mortality	John & Dad by 12/1/05				Next:
Transfer line or irrigation manure spill, leak, or runoff	John & Dad by 12/1/05				Next:
					Next:
					Next:
					Next:

- As new employees are hired, they will be informed of these plans.
- We will inform all staff, in a timely manner, about changes made to the content or location of plans.



Work Sheet 11. **Audit**

How often will audits be conducted? Annually

EMS Element Audited	Most Recent Audit was:	Next Audit will be:
Overall EMS (Use "Handout 11a. Audit Checklist: Overall EMS" or substitute your own checklist.)		August 2006

Use "Handout 11b. Audit Checklist: Stewardship Plans" or substitute your own checklist for each of the following:

Stewardship Plan for: NPDES Permit		August 2006
Stewardship Plan for: Odor, flies, & appearance		August 2006
Stewardship Plan for: Chemical handling & storage		August 2006
Stewardship Plan for:		
Stewardship Plan for:		



Work Sheet 12. Management Review

How often will management reviews be conducted? Annually

EMS Element Reviewed	Most Recent Review was:	Next Review will be:
Overall EMS (Use "Handout 12a. Management Review Checklist: Overall EMS" or substitute your own checklist.)		August 2006

Use "Handout 12b. Management Review Checklist: Stewardship Plans" or substitute your own checklist for each of the following:

Stewardship Plan for: NPDES Permit		August 2006
Stewardship Plan for: Odor, flies, & appearance		August 2006
Stewardship Plan for: Chemical handling & storage		August 2006
Stewardship Plan for:		
Stewardship Plan for:		



Appendix. **Feedlot Case Study**



Beef Case Study

History

Lawrence Land and Cattle Company (LLCC) is a fourth-generation family farm located in Antelope County, Nebraska. Two Lawrence generations manage and operate the farm with the assistance of three full-time employees. LLCC currently operates a 5,000-head feedlot and owns approximately one-third of the cattle and feeds the remainder for approximately 25 established customers. The farmstead and feedlot have been on the original quarter section since LLCC was founded in 1920. The feedlot was expanded in 1965 to 1,200 head, again in 1973 to 2,500 head, and to its current size in 1990. The two additional quarters of land were added in 1970 and 1988. Corn and forage from the cropping operation is used in the feedlot, and additional feedstuffs are bought year around from neighboring farmers. Protein supplement and corn gluten feed are purchased through their local feed supplier.

The Lawrence family strongly believes in providing opportunities for the future generations to continue LLCC by operating a successful business and sustaining the land and natural resources under their care. They have a tradition of being active in the community and church and view themselves as good neighbors and good employers. LLCC prides itself on being an early adopter of soil conservation practices, and John, like his father and grandfather, serves on the soil and water conservation district board and county extension council.

Feedlot Performance Indicators

Feedlot capacity: 5,000 head
Average daily gain: 4 lbs/day
Turns per year: 2

Annually finish about 10,000 head
Feed/Gain: 6.5 lbs feed/1 lb of gain
Cattle are fed from 650 to 1,300 lbs over a 165-day period.

Manure Production

Manure is typically harvested after each turn of cattle and stockpiled until land applied. Manure is land applied with two, 20-ton spreaders. It is typically surface applied on alfalfa (feedlot quarter) in summer after second cutting and in February on row crops and not incorporated. For the current feeding program, this farm harvests:

10,000 tons of manure solids annually
162,000 lbs of crop available N
409,000 lbs of P₂O₅ annually

Runoff Management

Precipitation-related runoff from the earthen feedlots is collected in an earthen holding pond designed to hold the runoff of a 25-year, 24-hour storm as well as normal runoff for winter months.



Farm Personnel and Stakeholders

Farm Employees	Responsibilities
Manager	Business management, marketing, public relations, human resources
Feed truck driver	Reads bunks, feed mill operations, delivers feed
Cowboy one & two	Move cattle, pen rider, treat sick cattle, report pen conditions, needed repairs
Secretary	Office details, scale operations, records
Tractor driver	Crop management, feedlot & equipment maintenance, pen cleaning, manure application
1-2 part-time employees	General feedlot & crop production responsibilities including manure application

Consultants	Responsibilities
Feedlot nutritionist	Develops rations for cattle, reviews with manager quarterly, does feed analysis
Crop consultant/- COOP agronomist	Soil sample, applies commercial fertilizer, ICM scouting of fields
Veterinarian	Consults on products used to process (preventive) & treat including in-feed medication.
Lender	Provides financing for operations, land, & facilities
Truckers	A 5,000-head feedlot will market 10,000 cattle a year. That is 225 loads of cattle going out & 130 loads coming in. It is about 340 loads of wet DGS, about 640 loads of corn, & 80 loads of hay a year (40,000 pound)

Stakeholders

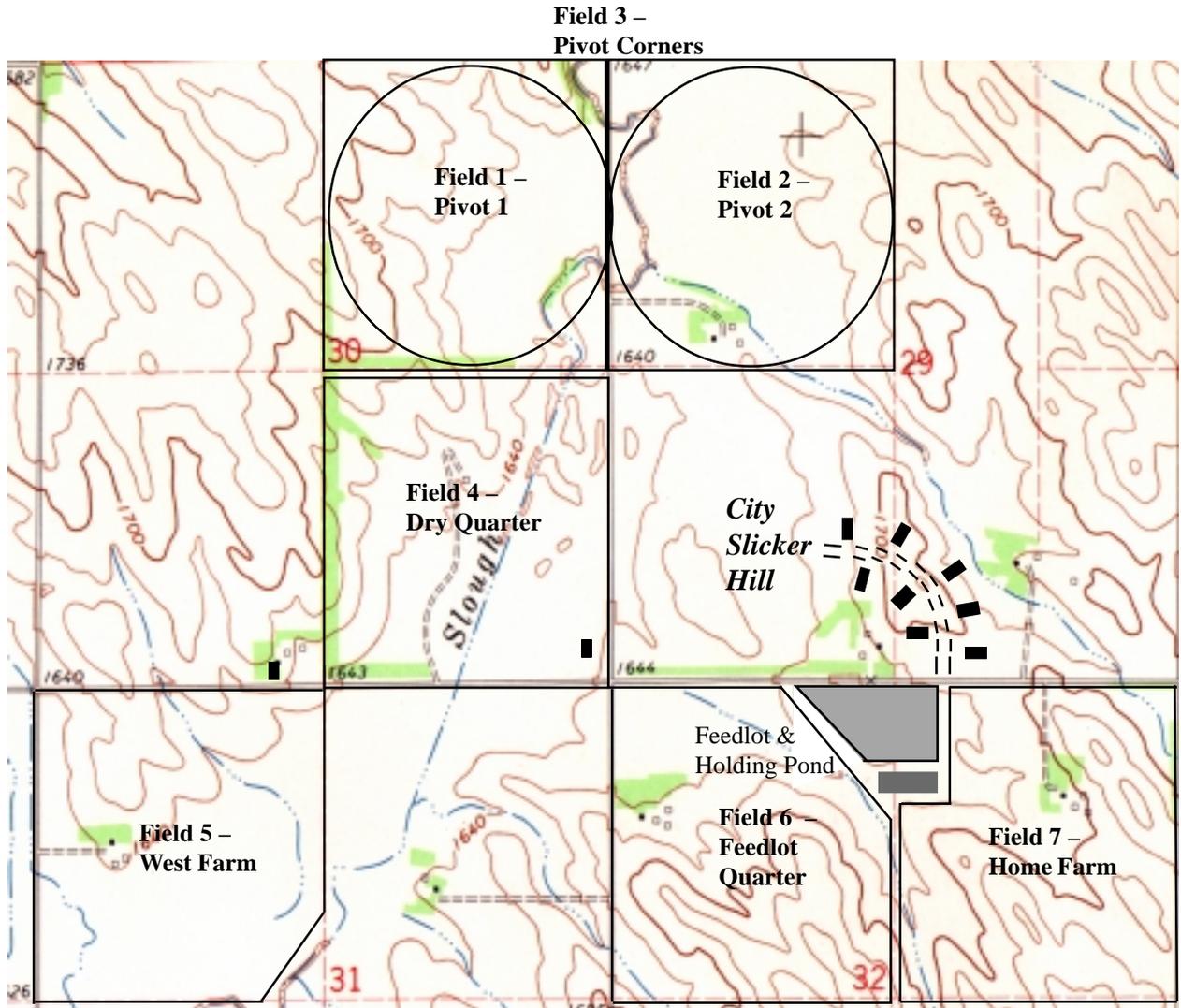
Customers that own cattle, Neighbors, Neighboring crop farmers that sell grain to the feedlot

Land Base

The operation has access to seven fields, five are rain fed and two are irrigated. The two irrigated fields (130 acres) are in continuous corn (170 bushel 5-yr average). Pivot corners are in alfalfa (50 acres averaging 3 tons hay/ac). The field south of the feed yard (130 acres) is also in alfalfa. It is occasionally irrigated from the runoff pond with a big gun system. Annual yields are 5 tons/acre. The three remaining fields are in a corn/soybean rotation and typically average yields of 100 to 120 bushels of corn/acre and 45 to 50 bushels of soybeans/acre.



Site Maps for Feedlot Production Facility



Prevailing
Summer Winds

Prevailing
Winter Winds

