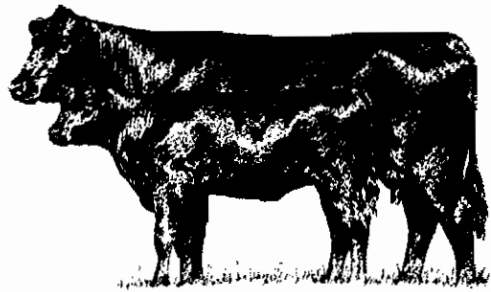


JAKOBS BROTHERS BEEF

BLACKTOP FARM



WHITESIDE COUNTY

**COMPREHENSIVE NUTRIENT
MANAGEMENT PLAN**

2008

EPA COPY

PREPARED BY:



Frank & West

Environmental Engineers, Inc.

7226 North State Route 29~Springfield, IL 62707~Phone: 217/487-7686~Fax: 217/487-7687



Frank & West
Environmental Engineers, Inc.

October 28, 2008

U.S. EPA – Region 5
Attn: Cheryl Burdett
Water Enforcement Compliance Assurance Branch (WC15-J)
77 W. Jackson Blvd.
Chicago, IL 60604

RE: Jakobs Bros. Farms, Inc.
Blacktop Feedlot
Docket No. V-W-08-AO

Dear Ms. Burdett:

Frank & West is submitting an application for the general NPDES permit along with the current and NRCS approved comprehensive nutrient management plan (CNMP) on behalf of the Jakobs Bros. Farms, Inc., - Blacktop Feedlot facility.

If you have any further questions or comments regarding the Jakobs Bros. Farms, Inc., - Blacktop Feedlot non-lagoon livestock waste handling facility, please advise.

FRANK & WEST
ENVIRONMENTAL ENGINEERS, INC.

Chris J. West, P.E.
Vice President

Cc: David Jakobs – w/o CNMP
Bruce Yurdin – IEPA-Springfield
Lee Heeren – IEPA-Rockford

Enclosure: NPDES Permit Application with IDOA Approval Letter & CNMP

A:\ProjectFiles\2008\08-117\Blacktop Feedlot\EPA NPDES Submittal Letter.doc

FORM 1 GENERAL	U.S. ENVIRONMENTAL PROTECTION AGENCY GENERAL INFORMATION <i>Consolidated Permits Program</i> <i>(Read the "General Instructions" before starting.)</i>	I. EPA I.D. NUMBER <table border="1" style="width:100%; border-collapse: collapse;"><tr><td style="width:10%;">3</td><td style="width:70%;"></td><td style="width:10%;">T/A</td><td style="width:10%;">C</td></tr><tr><td>F</td><td></td><td></td><td>D</td></tr><tr><td>1</td><td>2</td><td>13</td><td>14 15</td></tr></table>	3		T/A	C	F			D	1	2	13	14 15																																										
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V. FACILITY MAILING ADDRESS																																																								
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II. POLLUTANT CHARACTERISTICS																																																								
<p>INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.</p>																																																								
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CONTINUED FROM THE FRONT

VII. SIC CODES (4-digit, in order of priority)

A. FIRST										B. SECOND									
7	0	2	1	1	(specify) Cattle Feedlot	7				(specify)									
15	16	17	18	19		15	16	17	18		15	16	17	18					
C. THIRD										D. FOURTH									
7					(specify)	7				(specify)									
15	16	17	18	19		15	16	17	18		15	16	17	18					

VIII. OPERATOR INFORMATION

A. NAME										B. Is the name listed in Item VIII-A also the owner?														
8	J	a	k	a	b	s																		
15	16	17	18	19	20	21	22	23	24															
C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box: if "Other," specify.)										D. PHONE (area code & no.)														
F = FEDERAL S = STATE P = PRIVATE M = PUBLIC (other than federal or state) O = OTHER (specify)										(specify) (815) 336-2441														
E. STREET OR P.O. BOX																								
21950 Ridge Road																								
F. CITY OR TOWN										G. STATE					H. ZIP CODE					IX. INDIAN LAND				
Sterling										IL					61081					Is the facility located on Indian lands? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO				
15 16 17 18 19 20 21 22 23 24										40 41 42 43 44 45 46 47 48 49					50 51 52 53 54 55 56 57 58 59									

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water)										D. PSD (Air Emissions from Proposed Sources)									
9	N									9	P								
15	16	17	18	19	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
B. UIC (Underground Injection of Fluids)										E. OTHER (specify)									
9	U									(specify)									
15	16	17	18	19	30	31	32	33	34										
C. RCRA (Hazardous Wastes)										E. OTHER (specify)									
9	R									(specify)									
15	16	17	18	19	30	31	32	33	34										

XI. MAP


Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers, and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS (provide a brief description)

Livestock Facility - Beef

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (type or print)										B. SIGNATURE										C. DATE SIGNED									
Chris J. West																				10/22/2008									

COMMENTS FOR OFFICIAL USE ONLY

C									
15	16	17	18	19	20	21	22	23	24

<input type="checkbox"/> Chickens (Broilers)			
<input type="checkbox"/> Chickens (Layers)			
<input type="checkbox"/> Ducks			
<input type="checkbox"/> Other Specify _____			
3. TOTAL ANIMALS			

C. ☐ TOPOGRAPHIC MAP

D. TYPE OF CONTAINMENT, STORAGE AND CAPACITY

1. Type of Containment	Total Capacity (in gallons)	
<input type="checkbox"/> Lagoon		
<input type="checkbox"/> Holding Pond		
<input type="checkbox"/> Evaporation Pond		
<input type="checkbox"/> Other: Specify _____		

2. Report the total number of acres contributing drainage: _____ acres

3. Type of Storage	Total Number of Days	Total Capacity (gallons/tons)	
<input type="checkbox"/> Anaerobic Lagoon			
<input type="checkbox"/> Storage Lagoon			
<input type="checkbox"/> Evaporation Pond			
<input checked="" type="checkbox"/> Aboveground Storage Tanks	60.00	564,379.00	
<input checked="" type="checkbox"/> Belowground Storage Tanks	307.00	3,126,640.00	
<input type="checkbox"/> Roofed Storage Shed			
<input checked="" type="checkbox"/> Concrete Pad	21.00	18,432.00	
<input type="checkbox"/> Impervious Soil Pad			
<input checked="" type="checkbox"/> Other: Specify <u>Bed Pack Building</u>	120.00	35,153.00	

E. NUTRIENT MANAGEMENT PLAN

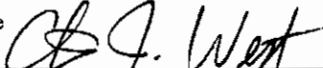
A. Has a nutrient management plan been developed? ☒ Yes ☐ No

B. Is a nutrient management plan being implemented for the facility? ☒ Yes ☐ No

C. If no, when will the nutrient management plan be developed? Date: _____

D. The date of the last review or revision of the nutrient management plan. Date: 02/13/2008

E. If not land applying, describe alternative use(s) of manure, litter and or wastewater: 18432/35153

F. LAND APPLICATION BEST MANAGEMENT PRACTICES Please check any of the following best management practices that are being implemented at the facility to control runoff and protect water quality: <input checked="" type="checkbox"/> Buffers <input checked="" type="checkbox"/> Setbacks <input checked="" type="checkbox"/> Conservation tillage <input type="checkbox"/> Constructed wetlands <input type="checkbox"/> Infiltration field <input type="checkbox"/> Grass filter <input type="checkbox"/> Terrace					
III. CONCENTRATED AQUATIC ANIMAL PRODUCTION FACILITY CHARACTERISTICS					
A. For each outfall give the maximum daily flow, maximum 30-day flow, and the long-term average flow.			B. Indicate the total number of ponds, raceways, and similar structures in your facility.		
1. Outfall No.	2. Flow (gallons per day)			1. Ponds	2. Raceways
	a. Maximum Daily	b. Maximum 30 Day	c. Long Term Average	C. Provide the name of the receiving water and the source of water used by your facility. 1. Receiving Water 2. Water Source	
D. List the species of fish or aquatic animals held and fed at your facility. For each species, give the total weight produced by your facility per year in pounds of harvestable weight, and also give the maximum weight present at any one time.					
1. Cold Water Species			2. Warm Water Species		
a. Species	b. Harvestable Weight (pounds)		a. Species	b. Harvestable Weight (pounds)	
	(1) Total Yearly	(2) Maximum		(1) Total Yearly	(2) Maximum
E. Report the total pounds of food during the calendar month of maximum feeding.			1. Month		2. Pounds of Food
IV. CERTIFICATION					
<i>I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.</i>					
A. Name and Official Title (print or type) Chris J. West - Vice President Frank & West			B. Phone No. (815.9) 3,362,441.00		
C. Signature 			D. Date Signed 10/22/2008		



Rod R. Blagojevich, Governor
Thomas E. Jennings, Acting Director

Bureau of Environmental Programs

State Fairgrounds • P.O. Box 19281 • Springfield, IL 62794-9281 • 217/785-2427 (voice/TDD) • Fax 217/524-4882
Pesticide Misuse Hotline 1-800-641-3934 (voice/TDD)

**LIVESTOCK WASTE PROGRAM
INITIAL NOTICE OF CONSTRUCTION PLAN COMPLETENESS
Non-Lagoon Livestock Waste Handling Facility**

Registrant:

Jakobs Bros. Beef-Blacktop Feedlot
21950 Ridge Road
Sterling, IL 61081

Facility Location:

Penrose
Facility ID#
LF1950250000

Date Issued: June 24, 2008

A Notice of Non-Lagoon Construction Plan Completeness is hereby granted to the above-designated registrant to construct two livestock waste handling facilities *as stated in the construction plan application submitted to the Department as follows:*

Construction of two livestock waste handling facilities that shall have the following dimensions:

Maximum Length =	10 feet
Maximum Width =	10 feet
Maximum Depth =	8 feet
Total Design Capacity =	500 ft ³

Maximum Diameter =	76 feet
Maximum Depth =	23 feet
Total Design Capacity =	95,600 ft ³

Pursuant to 35 Illinois Administrative Code 506.304 (c) the structure measuring 10 feet by 10 feet by 8 feet shall include a perimeter foundation drain, which must include a sampling port to allow for quarterly sampling pursuant to 8 Illinois Administrative Code 900.511

The construction plan for the aforementioned structures has been reviewed and deemed complete by the Illinois Department of Agriculture pursuant to the Livestock Management Facilities Act (Act), 510 Illinois Compiled Statutes 77/13.

Pursuant to 510 ILCS 77/13(g), an initial site inspection was conducted by a representative of the Department on May 27, 2008.


Please be advised that, pursuant to the Act and rule, the Department shall make additional site inspections during the construction and post-construction phase and shall require modifications when necessary to ensure the project shall be in compliance with the requirements of the regulation. Please notify the Department at least 5 days prior to the commencement of construction.

Further, pursuant to 510 ILCS 77/13(f), upon completion of construction but prior to the placing of the structures in service, the owner or operator shall certify to the Department that the structures have been constructed or modified in accordance with the requirements of the Act and rule and that the information provided during the submittal process is correct. The Department, upon receipt of the completion of construction certification shall inspect the construction site to determine compliance with the construction standards of the Act and rule. Upon completion of this inspection, the Department shall send an official written notice to the owner or operator of the facility, indicating that the structures have met the standards of the Act and rule and that they may be placed into service or identifying the remedial measures necessary to enable the structures to be in compliance.

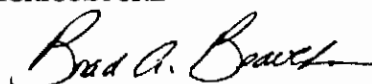
Please be advised that this letter is not to be construed as a release from any other federal, state or local laws or regulations. If you have any questions or comments relative to this notification or if the Department may be of service to you, please feel free to contact the Department at **Livestock Waste Program, Illinois Department of Agriculture, Bureau of Environmental Programs, P.O. Box 19281, Springfield, IL 62794-9281, (217/785-2427).**

Sincerely,

ILLINOIS DEPARTMENT OF AGRICULTURE



Warren D. Goetsch, P.E.
Bureau Chief, Environmental Programs



Brad A. Beaver
Manager, Livestock Waste Program

cc: File
Bruce Yurdin, IEPA

LF195025cpack

Section 1 EQIP Plan Recommendations, Forms, & Quantities

Plan Recommendations for EQIP application & cost-share

Manure & Wastewater Storage & Handling

- Existing feedlot and confinement barn lacks storage capacity, a liquid/slurry tank is recommended for storage.

Waste Utilization – Practice Code 633

- Roof guttering is recommended for feedlot buildings to direct water away from the feedlot, thus reducing flow into facility storages.

Roof Runoff – Practice Code 558

- Concrete curbing is needed to direct feedlot and bunker runoff to the existing feedlot reception pit.

Manure Transfer – Practice Code 634

- A new pump and below surface piping is recommended for transfer of the feedlot manure runoff to the proposed liquid/slurry tank.

Manure Transfer – Practice Code 634

- Two new reception pits with below surface piping is recommended for transfer of the feedlot manure runoff (from the small feedlot northwest of the main feedlot) and from the commodity bunker to the proposed liquid/slurry tank.

Manure Transfer – Practice Code 634

- A new agitator is recommended to maintain and properly remove a homogenous mixture of manure from the liquid/slurry tank. The agitator will also prevent solids buildup, thus maintaining the designed storage volumes.

Manure Transfer – Practice Code 634

- A new access road is recommended to provide all weather access to the proposed liquid/slurry tank.

Access Road – Practice code 560

Land Treatment Practices

- Fields meet t under planned management and cropping rotation. Producer is not planning on installing any new land treatment.

Nutrient Management

- Producer is planning on applying for the waste utilization incentive. Producer would need to implement two of the practices outlined on the following page

titled Guidance for Implementation of Waste Utilization Plans. Acreages eligible for waste utilization incentive dollars are estimated on the following pages. Maps for all fields show setbacks from surface waters.

Waste Utilization – Practice Code 633

Producer Signature

I certify that all information contained within this plan is truthful and accurate to the best of my knowledge.

JAKOBS BROTHERS BEEF

David Jakobs

Signature: _____

Date: _____

**Waste Utilization Incentive Acreage
Jakobs Brothers Blacktop Farm**

Farm#	Tract #	Field #	Common Name	Acres	2008	2009	2010	2011	2012
6456	2544	4, 5	Blacktop 1	81			81.1		81.1
6456	2544	3	Blacktop 2	22	22			22.3	
6456	2544	2	Blacktop 3	101			101		
6456	2544	1, 6, 7	Blacktop 4-5	176					
6456	2545	5-15			176		176.2		176.2
6456	2545	1-4	Blacktop 6	57			56.9		
6456	4035	1, 2	Meiners	101	57		100.6		
6456	1242	2	Spangler 1	12					12.3
6456	1242	1	Spangler 2	50	12				
6456	1242	1	Spangler 3	152	50				152.3
6456	1346	3-6	Zeigler 1	140	152	140		140.3	
6456	1346	1, 2	Zeigler 2	77		77		77.2	
6456	3145	1-4	Day 4	196		196		195.9	
6456	3158	1	Wilger	153				152.6	
6456	1347	1-5	St. Woesner	112		112			112.4
6456	4189	1, 5-8	Freds 40	37		37			
6456	4189	2-4	Freds 80	73		73			
6658	5259	1	Weigel North	65	65				65.2
6658	5259	2-4	Weigle South	75	75		75.4		
				610	636	591	588	600	Average 605

Section 2 Producer Information

Attachment 3

Guidance for Implementation of Waste Utilization Plans

To qualify for receiving the Waste Utilization incentive payment, the applicant must have an NRCS approved CNMP that includes the benchmark use of current Waste Utilization practice. Also, the CNMP must outline implementation of the Waste Utilization practices showing **two or more** of the following management **changes**. **(circle all that apply):**

1. Fields where manure is or will be applied will have new soil tests if existing soil tests are older than four years. Manure from each storage facility will be tested as close to the planned application dates as possible. Manure application rates will be based on recent soil and manure tests. *(If part, but not all, of this item is currently in place and the applicant will implement the entire item using EQIP dollars, the applicant may get credit for this item as one of the two management changes to qualify for the Waste Utilization incentive payment.)*
2. If waste is currently being applied closer than ¼ mile from a water body, increase the distance between manure application and water bodies by at least 200 feet.
3. Discontinue applying waste within 200 feet of wells, sinkholes, or surface waters.
4. Discontinue applying waste to cropland with slopes greater than 15%.
5. Discontinue spreading waste on frozen or snow-covered soil over 5 percent slope.
6. Install provisions such as contour buffer strips, stripcropping, grass or grass-legume cover or heavy residue cover on lands over 5 percent slope that are receiving manure, to control runoff and pollution so that manure may be spread on frozen or snow-covered soil.
7. Discontinue applying liquid manures to soils with less than 10 inches of at least moderately permeable soil over fractured bedrock, sand, or gravel.
8. Discontinue application of waste on organic soils with a seasonal water table within 1 foot of the surface.
9. Discontinue application of waste on flood plains where flooding occurs more frequently than once in 10 years.
10. Change application method from surface application or immediate incorporation to injection.
11. Discontinue application of waste in areas of concentrated water flow.
12. Change manure management to result in the total nutrient content of the manure being applied to the land to be at least 10% less than the CNMP would allow.

Examples:

- a. Spread manure on 10% more acres than the minimum allowed in the CNMP. *(Note, the EQIP incentive will apply to the number of acres on which manure is to be spread, not to exceed 10% more than the minimum number of acres required by the CNMP.)*
- b. Adopt an alternative use for the manure (other utilization activities such as composting, etc)
- c. Change nutrient content of the manure to reduce Phosphorus content by at least 10% (ie. Feed management).

NOTE: *Qualifying acres for the Waste Utilization incentive payment include all land where manure is to be applied (owned or controlled by the applicant, or on which the applicant has a contract to apply manure). The Waste Utilization incentive payment cannot be paid on land where "Other Utilization" options are used. "Other Utilization" includes options such as manure being hauled away and land applied by a third party (not the EQIP applicant).*

NOTES TO REVIEWERS

MWWSH

The existing facility is a combination of exposed concrete feedlots and confinement barn with below floor partial pits. The facility currently has inadequate volume for waste storage due to a lack of storage facilities and the introduction of fresh waters to the existing storages during precipitation events. A new liquid/slurry tank in combination with a pump, reception pits, below surface piping, curbing and roof guttering will provide the facility with the required storage volume.

Land Treatment

Fields meet t under current management and rotations. The land treatment portion of this plan outlines several different scenarios based on soil type, all which meet T. All fields are planned so that they do not exceed soil loss T.

Nutrient Management

Producer has more than adequate acreage available for application of manure. Producer is in a mostly three year corn one year beans or wheat rotation. Producer uses fields that are planted in wheat for land application of solid manure in summer months. Most all fields are planned showing a drawdown of soil test P.

CNMP Documentation Index

1. Manure and Wastewater Handling and Storage

	Documentation	Required for CNMP Planned	Required for CNMP Applied	Location in CNMP Document
	Types of animals and phases of production that exist/will exist at the facility.	X	X	Section 6 & 7
	Numbers of each animal type, average weight, and period of confinement for each phase of production.	X	X	Section 6 & 7
	Total estimated manure and wastewater volumes produced at facility.	X	X	Section 7
	Manure storage type, volume, and length of storage. (Include appropriate geologic investigation reports for planned storage or transfer facilities.	X	X	Section 6 & 7
	Existing/planned transfer equipment, system, and procedures.	X	X	Section 2 & 6
	Animal waste system design information including plan maps and sketches		X	Section 4 & 6
	Operation and maintenance activities		X	Section 10
	Emergency action plan to address spills and catastrophic events.	X	X	Section 8
	Air quality considerations	X	X	Section 10 & 12
	Pathogen considerations	X	X	Section 12
	Animal Mortality	X	X	Section 6 & 12
	Narrative	X	X	Section 6
	List of Components	X	X	Section 1
	List of Estimated Quantities	X	X	Section 1

Jakobs Brothers Beef Blacktop Farm Info

To meet Dept. of Ag requirements, you need to:

Soil Test

Take annual manure analyses (at least until stable)

Apply at agronomic rates according to analyses

Obey setbacks

200' from water

150' from wells

¼ mi. from residences IF you have to surface apply

no setback from residences IF injecting

To meet CAFO requirements:

You do NOT need a NPDES permit, UNLESS you discharge

Your facility should be a "no discharge" facility, EXCEPT in the case of a tanker turnover or accident, or drag hose rupture AND that spill reaches a "navigable water" (navigable is yet to be defined)

You DO NOT have a discharge based on land application (i.e. large unexpected rainfall after an application causes a fish kill downstream), IF you have a nutrient management plan, AND you are following it!

Section 3 Warranty of Technical Services Provided

Warranty of Technical Services Provided

I hereby warrant that the technical services I provided as a Technical Service Provider:

- 1) Comply with all applicable Federal, State, Tribal, and local laws and requirements
- 2) Meet Applicable USDA standards, specifications, and program requirements,
- 3) Are consistent with and meet the particular conservation program goals and objectives, and
- 4) Incorporate, where appropriate, low-cost alternatives that address the resource issues.

Program Participant Information:

Name: Jakobs Brothers Beef, Blacktop Farm

Conservation Program: _____

Technical Service Category: _____

Technical Service: Comprehensive Nutrient Management Plan

Technical Service Provider Information:

Name: Chris West

TSP Number: 04-4217

Signature: CK J. West


Date: 2/13/08

Section 4 Maps of fields and farms

Jakobs Brothers Farms Blacktop Farm All Fields Aerial Photo



Legend

 Blacktop Farm Fields

6,000

 Feet



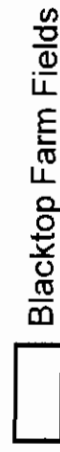
Frank & West
Environmental Engineers, Inc.

7228 N. State Route 29 Phone: 217/487-7600
Springfield, IL 62707 Fax: 217/487-7607

Jakobs Brothers Farms Blacktop Farm All Fields Topo Map



Legend



Blacktop Farm Fields

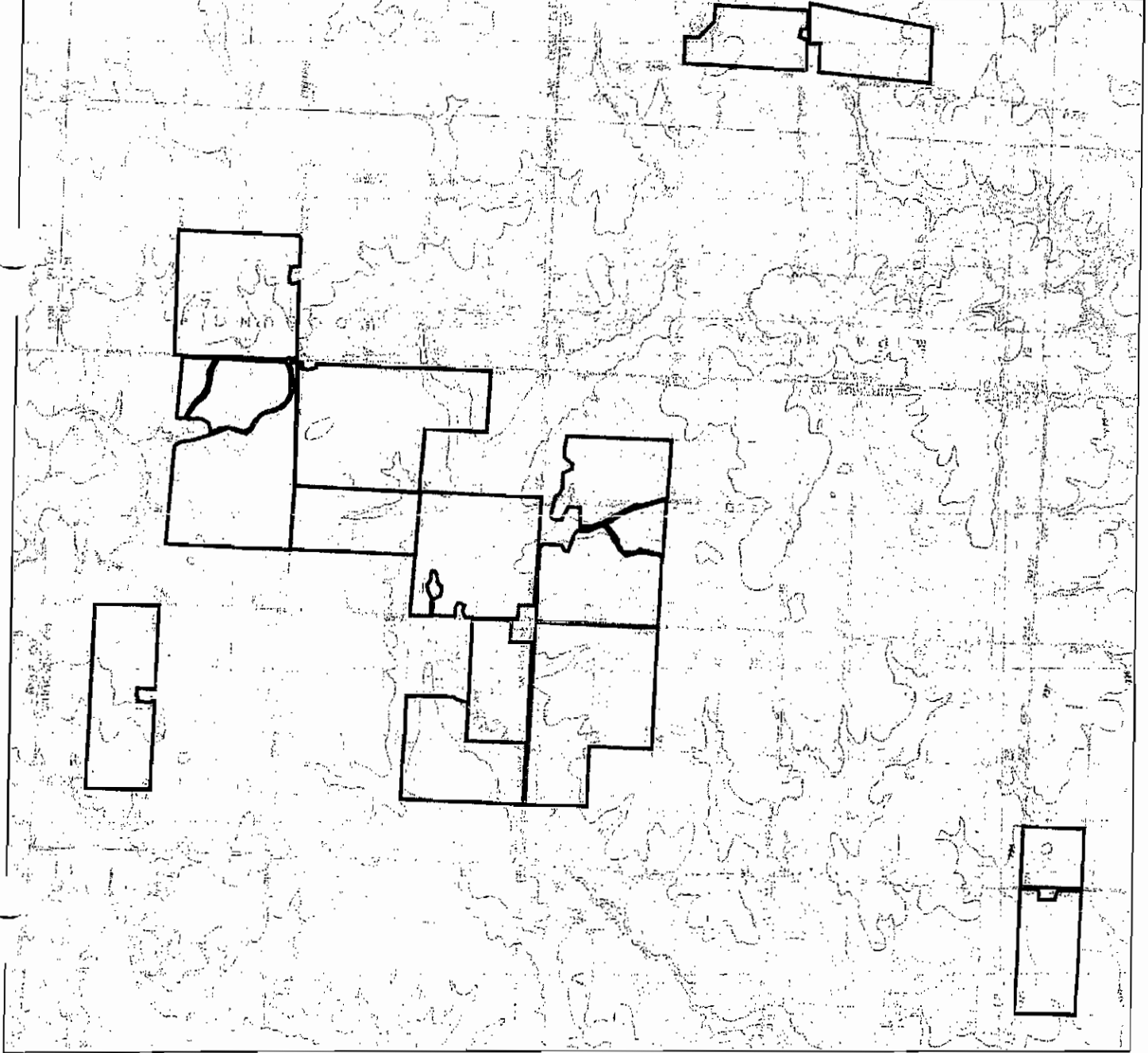
6,000

Feet



Frank & West
Environmental Engineers, Inc.

7226 N. State Route 29
Springfield, IL 62707
Phone: 317/405-7000
Fax: 317/405-7007



OGLE COUNTY

2100N 2200N 2300N 2400N



Whiteside County, IL



Randy Clodfelter

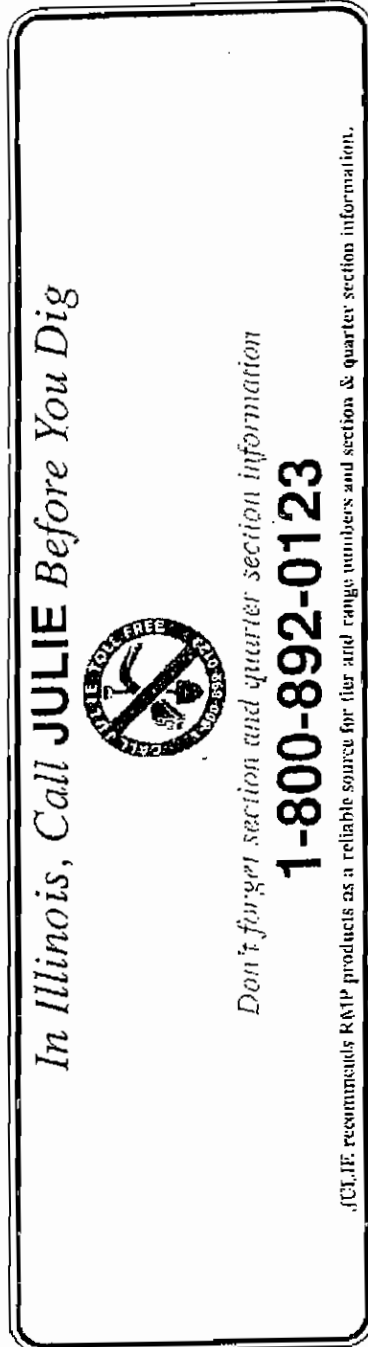
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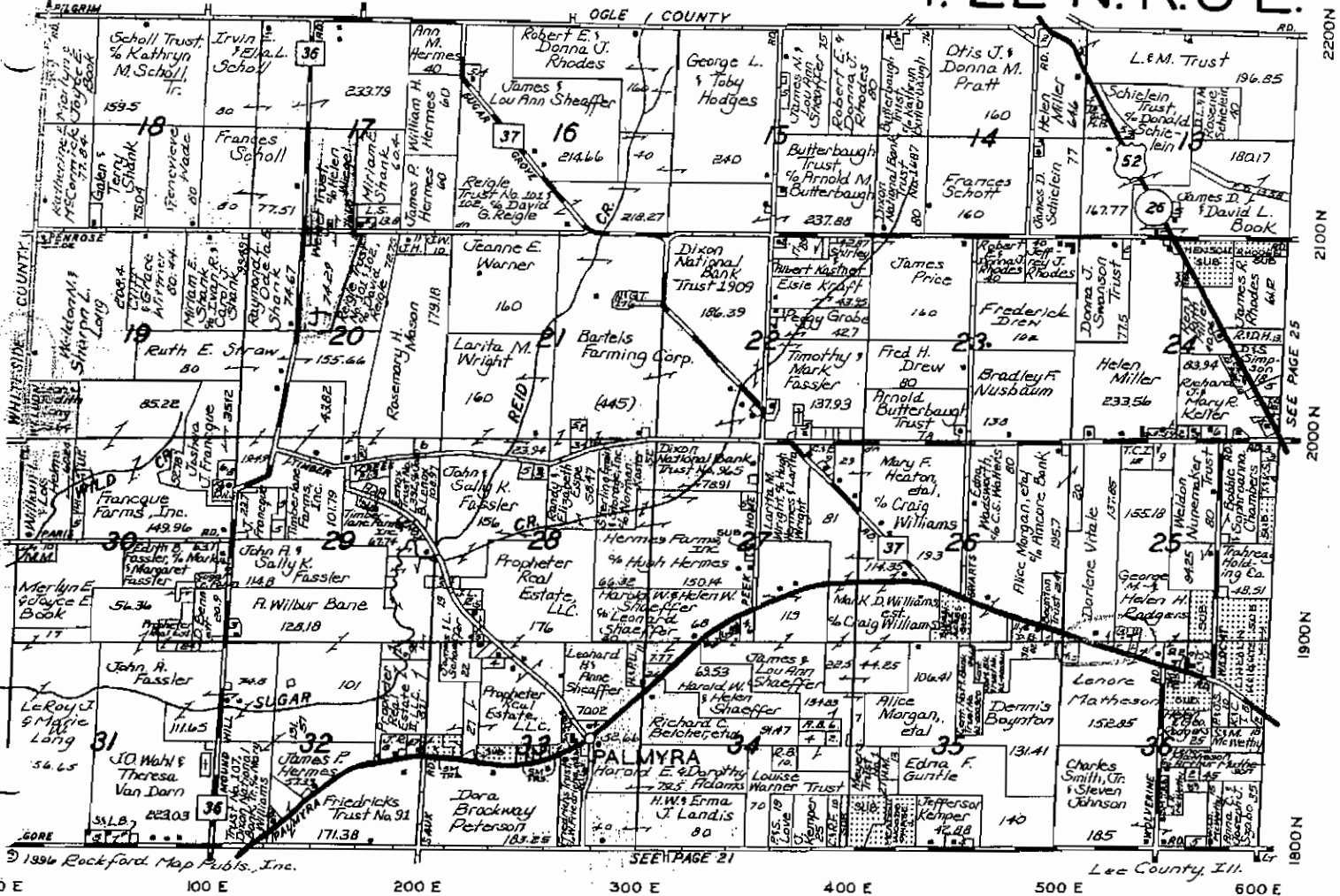
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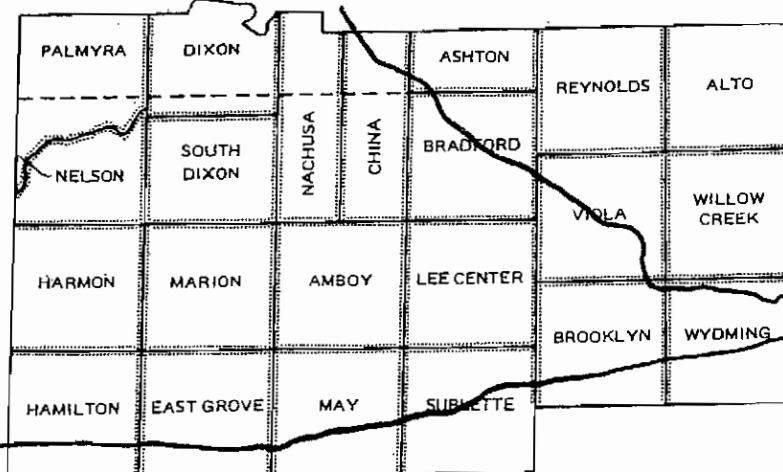
OUR CABLES"



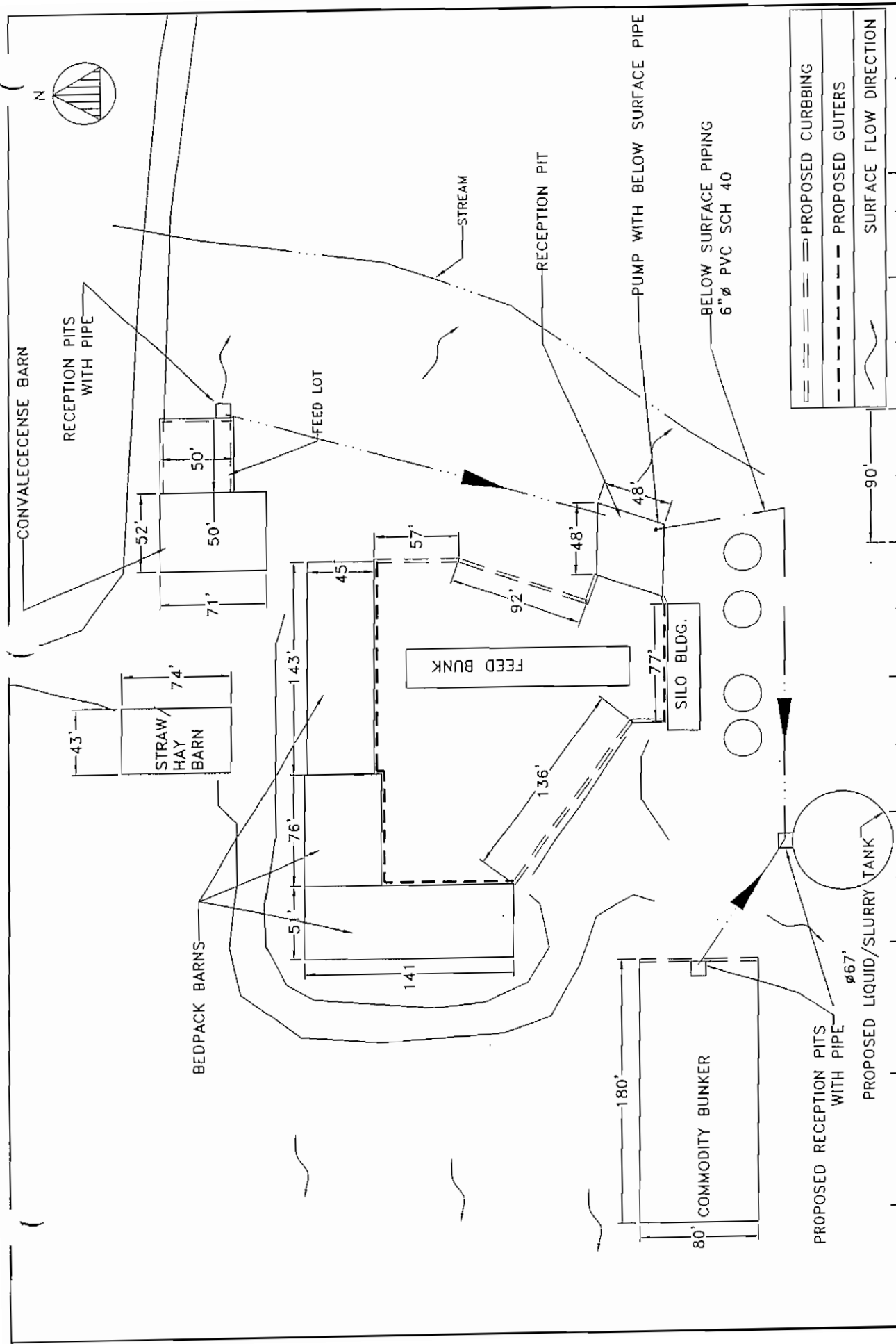
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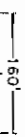
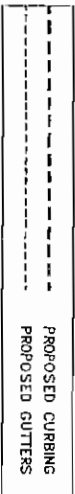
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or
(800) 252-1133



Section 5 Construction Drawings



Frank & West Environmental Engineers, Inc. 7226 N. State Route 29 Springfield, IL 62707 Phone: 217/487-7686 Fax: 217/487-7687		JAKOBS BROTHERS FARMS, INC. STERLING, ILLINOIS PLOT PLAN - BLACKTOP (PROPOSED COMPONENTS)	
DRAWN BY: CEO	SCALE: AS SHOWN	DATE: 02/13/08	DRAWING NO. 08-11714



Section 6 Description of the site, facility pictures, site facility layout, and soils info

Site Information

A. Site Description

Jakobs Brothers Farm currently operate a beef feedlot (blacktop feedlot) and confinement facility north of Sterling in Whiteside County, Illinois.

The farm consists of 1,600 head of cattle in a confinement barn with below floor partial pits. The cattle average 900 lbs. The farm also consists of a 36,950 sq. ft. concrete feedlot, all of which is exposed. Three buildings utilizing packed bedding are adjacent to the main feedlot. The building dimensions are 141' x 52', 76' x 52' and 143' x 45'. Another building with dimensions of 72' x 52' is adjacent to a smaller feedlot to the northwest. These buildings and the feedlot service 500 cattle that average 750 lbs. Currently feedlot runoff from the main feedlot is directed into a small concrete reception pit located at the southeast side of the feedlot. Runoff from the smaller feedlot is currently not contained. Manure is transferred from the reception pit directly to the application areas frequently.

The facility would like to increase facility manure storage capacity by constructing a new liquid/slurry tank. The facility would like to stop all fresh water from entering the manure storage by placing guttering on all roofs adjacent to the feedlots and constructing curbing around the perimeter of the feedlots. In order to transfer manure from the feedlot adjacent to the convalescence barn the facility would add a reception pit and below surface transfer piping. In order to transfer manure from the existing reception pit to the proposed liquid/slurry tank, the facility would add a pump and below surface transfer piping. In order to transfer manure from the proposed liquid/slurry tank to the existing slurrystore, the facility would add a reception pit with a pump and below surface transfer piping. An all weather access road is also needed to provide access to the liquid/slurry tank.

In order to maintain a homogenous mix of manure in the liquid/slurry tank, an agitator is needed. This will allow the proper use of manure nutrients and the correct manure application rates.

The facility currently utilizes a rendering service to dispose of mortalities.

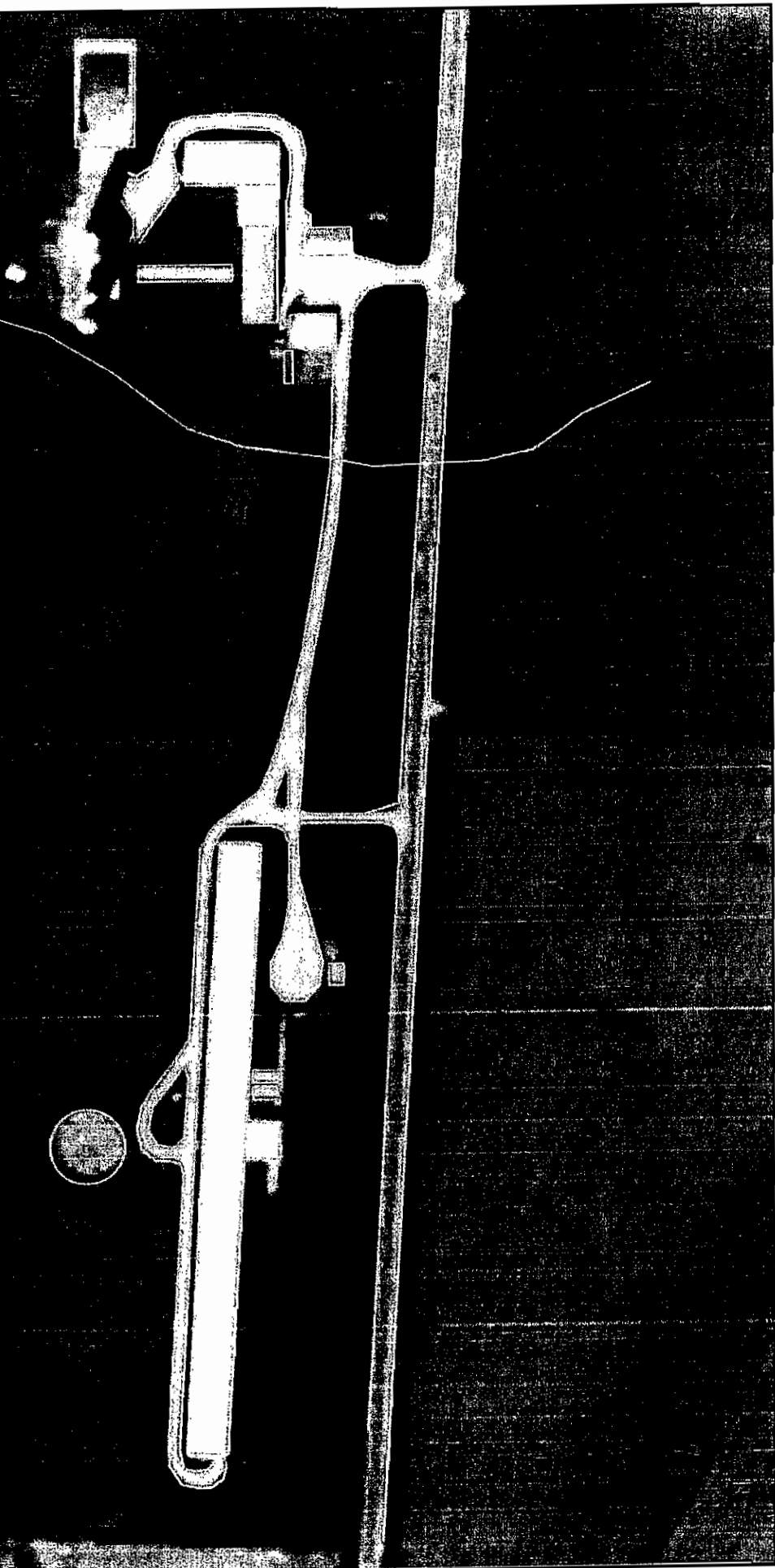
Approximately 1681 acres are available for manure application.

Site soil and geological information is located on the following page.

See site facility layout (plot plan) on the following page. The facility itself is located in the NE quarter of the NW quarter of section 13 in Jordan Township in Whiteside County, Illinois. NE $\frac{1}{4}$ of the NW $\frac{1}{4}$ of Section 13, T.22N, R.7E

Table A-1 Site Soils and Geologic Information			
Soil Type	Soil Name	Hydric Soils Class	High Water Table
8D3	Hickory clay loam 10-18% slopes	B	> 6.0ft
51A	Muscatune silt loam 0-2% slopes	B	1.0-2.0ft.
61A	Atterberry silt loam 0-2% slopes	B	0.5-2.0ft.
68A	Sable silty clay loam 0-2% slopes	B/D	0.0-1.0ft.
86B	Oscos silt loam 2-5% slopes	B	4.0- >6.0ft.
86C2	Oscos silt loam 5-10% slopes	B	4.0- >6.0ft.
274D2	Seaton silt loam 10-18% slopes	B	> 6.0ft
279B	Rozetta silt loam 2-5% slopes	B	4.0- >6.0ft.
279C2	Rozetta silt loam 5-10% slopes	B	4.0- >6.0ft.
280B	Fayette silt loam 2-5% slopes	B	> 6.0ft
280C2	Fayette silt loam 5-10% slopes	B	> 6.0ft
675B	Greenbrush silt loams 2-5% slopes	B	4.0- >6.0ft.
675C2	Greenbrush silt loam 5-10% slopes	B	4.0- >6.0ft.
943D3	Seaton-Timula silt loams 10-18% slopes	B	> 6.0ft
3451A	Lawson silt loam 0-2% slopes	B	1.0-2.0ft.

Note: Information Obtained from USDA NRCS Whiteside Co. EFOTG



Frank & West

Environmental Engineers, Inc.

7226 N. State Route 29
Spring IL 62707

Phone: 217/487-7686
Fax: 217/487-7687

JAKOBS BROTHERS FARMS, INC.

STERLING, ILLINOIS

PLOT PLAN - BLACKTOP

DRAWN BY: CEC

SCALE: AS SHOWN

DATE: 01/21/08

DRAWING

8-11703

Section 7 Calculations including facility and storage inventories & waste production

B. Facility Inventories

1. Animals

Table B-1

Animal	No. of Animals	Avg. Size	Animal Units (LMFA)	Animal Units (per 1,000 lbs)
Confinement Cattle	1,600	900 lbs	1,600	1,440
Feedlot Cattle	500	750	500	375
Total Animal Units			2,100	1,815

2. Buildings

Livestock Facility Capacity(s)

Table B-2

Facility	Facility Population	Total Square Feet	Storage Facility
Existing Confinement Barn	1,600	63,635	Partial below floor pit
Existing Feedlot and Bedpack Barns	500	36,950	Small Reception Pit

3. Seasonal High Water Table

- See Site Soils & Geologic Information Table (A-1)

4. Livestock Waste Production

Livestock Waste Storages

Table B-3

Storage	Animals	Waste Produced (gal/day or ft ³ /day)	Capacity (gal)	Storage Days
Confinement Barn	1,600	10,174 gal	3,126,640 gal	307
Feedlot*	500	883 gal	18,432 gal	21
Bedpack Barns*	500	293 ft ³ /day	35,153 ft ³	120

** The facility handles the bedpack as a solid manure and it is not directed into the storage structure. The cattle are kept on the feedlot for 8 months out of the year and it has been assumed that ½ of the manure is in the bedpack and ½ is directed into the manure storage.*

Manure production calculations are detailed on the following pages.

5. Rainfall Volumes & Evaporation from storage facilities

See following page for rainfall & evaporation calculations expected from lots & open storages.

Jakobs Brothers Beef
Blacktop Feedlot
Waste Storage Volume Calculations

DAILY MANURE PRODUCTION	Average (1)	Maximum	Manure (2)	Total Manure
	Animal Weight (lbs)	Design Capacity # of Head	Production (cu.ft./day)	Volume (cu.ft./day)
Beef - Confinement Building	900	1,600	1,360	1,360.0
Totals (Year Round Animals)		1,600	1,360	1,360
Beef - Feedlot (9)	750	200	142	47.3
Beef - Feedlot (9)	750	115	82	27.2
Beef - Feedlot (9)	750	185	131	43.8
Totals (Feedlot Animals)		500	131	118
Total to Proposed Manure Storage				1,478

DAILY MISC. PRODUCTION	Bedding (3) (cu.ft./day)
Beef - Confinement Building	0.0
Beef Feedlot	70.0
Beef Feedlot	40.0
Beef Feedlot	65.0
Totals	175.0

Additional Storage Area			
Storage Area	Storage Area Size	Bedpack/Solid Storage (ft³)	Storage Area Size Concrete Pit (liquid Storage)
Beef - Confinement Building		n/a	47,5x44'x10' (20 individual pits)
		n/a	418,000.0
Beef - Feedlot (10)	141x51x2	14,382.0	
Beef - Feedlot (10)	75x52x2	7,904.0	
Beef - Feedlot (10)	143x45x2	12,870.0	
Totals (gallons)		262,966.9	3,126,640

Feedlot Runoff Volume Calculations	
Surface Area ft² (6)	36,950.00
Annual Precipitation (in.) (5)	36
Annual Precipitation Volume (ft³)	111,774
Annual Evaporation (in.)	0
Annual Evaporation Volume (ft³)	0
Precip/Evap (ft³)	111,774
Precip/Evap (gal)	836,124
25 Year/24 Hour Rain Event (in)	5.6
25 Year/24 Hour Rain Event (ft³)	17,243
25 Year/24 Hour Rain Event (gal.)	128,969

Concrete Pit Volume Calculations 48' x 48' x 10' deep	
Surface Area - @ top (ft²)	2,304
Surface Area - @ freeboard (ft²)	2,304
Volume (ft³) - @ freeboard	18,432
Volume (gal.) - @ freeboard	137,881

Waste Storage Volume Calculations	
Surface Area ft²	2,304.00
Annual Precipitation (in.) (5)	36
Annual Precipitation Volume (ft³)	6,970
Annual Evaporation (in.)	33
Annual Evaporation Volume (ft³)	6,355
Precip/Evap (ft³)	614
Precip/Evap (gal)	4,596
25 Year/24 Hour Rain Event (in)	5.6
25 Year/24 Hour Rain Event (ft³)	1,075
25 Year/24 Hour Rain Event (gal.)	8,043

Design Factors	
Storage Length - Required (days)	150
Storage Length - Actual (days)	368

Pit Silo Runoff Volume Calculations	
Surface Area ft² (6)	14,400.00
Annual Precipitation (in.) (5)	36
Annual Precipitation Volume (ft³)	43,560
Commodity/Silage Leachate (ft³) (11)	2,000
Annual Evaporation Volume (ft³)	0
Precip/Evap (ft³)	43,560
Precip/Evap (gal)	325,851
25 Year/24 Hour Rain Event (in)	5.6
25 Year/24 Hour Rain Event (ft³)	6,720
25 Year/24 Hour Rain Event (gal.)	50,269

Existing & Proposed Waste Storage Volume Calculations 120' x 23.4' deep	
Surface Area @ top (ft²)	14,835
Surface Area @ freeboard (ft²)	14,835
Volume (ft³) @ freeboard	317,468
Volume (gal.) @ freeboard	2,374,825

Waste Storage Volume Calculations	
Surface Area ft²	14,834.95
Annual Precipitation (in.) (5)	36
Annual Precipitation Volume (ft³)	44,876
Annual Evaporation (in.)	33
Annual Evaporation Volume (ft³)	40,920
Precip/Evap (ft³)	3,956
Precip/Evap (gal)	28,593
25 Year/24 Hour Rain Event (in)	5.6
25 Year/24 Hour Rain Event (ft³)	8,923
25 Year/24 Hour Rain Event (gal.)	51,787

Feedlot Only			
	Required Volume		Total Volume
	Daily Manure Volume (cu.ft.)	Daily Misc. Volume (cu.ft.)	
Manure Storage Volume	1,478	0	539,594
			733,459
			5,486,658.2
			5,501,464.9

- 1 - Average Animal Weight obtained from producer.
- 2 - Manure Storage Volume = # of head x ft³/day (total manure production Livestock Waste Facilities Handbook, Third Edition, MWPS-18 Table 2-1)
- The manure production was interpolated from MWPS-18 Table 2-1
- 3 - Bedding Volume = Based on producer estimate of bedding used. Bedding is stored as bedpack and will be applied as a solid manure to application areas. Will not be directed into proposed Manure Storage.
- 5 - Precipitation and evaporation obtained from Livestock Waste Facilities Handbook, Third Edition, MWPS-18 Figures 11-7, 11-12b & 11-14.
- 6 - Surface area for feedlot runoff calculations includes all exposed feedlot areas indicated on the facility plot plan.
- 7 - Required Volume includes 25 year/24 hour rain event & precipitation/evaporation volumes.
- 8 - "As Built" Volume includes two feet set aside for freeboard requirement.
- 9 - Animals are kept on feedlot for 8 months of year and it is assumed that 50% of manure during that time is in bedpack and 50% is directed to the Proposed Manure Storage.
- 10 - Manure/bedding from feedlot barns will be applied semi-annually as a solid manure to application areas.
- 11 - Annual leachate from commodities and/or silage.

Circular Tank - Existing	
Tank Volume Calculations	
Diameter	120
Height	23.4
Freeboard Depth - (D)	21.4
Freeboard Volume - (V) ft ³	242,021
Freeboard Volume - (V) gal	1,810,439
Surface Area (top)	11,309
Surface Area (freeboard elev.)	11,309

Circular Tank - Proposed	
Tank Volume Calculations	
Diameter	67
Height	23.4
Freeboard Depth - (D)	21.4
Freeboard Volume - (V) ft ³	75,447
Freeboard Volume - (V) gal	564,379
Surface Area (top)	3,526
Surface Area (freeboard elev.)	3,526

Animal Unit Calculations
Jakobs Brothers Blacktop Farm
Per 1,000 lb Animal Unit

Type of animal	Weight	# of Animals	LMFA AU	Total LMFA AU	Total 1000# AU
Feedlot Beef	900	2100	1.0	2100	1890
		2100		2100	1890

Section 8 Emergency Action Plan

EMERGENCY ACTION PLAN

Contact Names & Numbers - Human Injury

- Facility Name: Jakobs Bros.

- Facility Owner Info:
Name: David Jakobs

Number: 815/336-2441

- Facility Address (911):
21950 Ridge Road, Sterling, IL

- Livestock Manager Info:
- *If different from owner*
Name:

Phone:

- Specific Directions to the Facility:

From : 8 miles north of Sterling on Route

40. Intersection of Ridge Road, south side.

- Ambulance
Phone: 911

- Doctor or Physician
Name:

Phone:

- Hospital or Medical Clinic
Name: CGH

Phone: 815/625-0400

- Fire Department
Phone: 911

- County Sheriff
Name: Whiteside Co.

Phone: 911

- Illinois Poison Center
Phone: 1-800-222-1222

- Other
Name:

Phone:

EMERGENCY ACTION PLAN

Actions, Contact Names & Numbers - Manure Release or Spill

1. Eliminate Source of Release/Spill.

- Stop the manure application or pumps
- Repair defective component of earthen basin/lagoon and fill with compacted clay

2. Contain the Release/Spill

- If material is in application field construct earthen berms capable of containing release/spill.
- If material has reached roadside ditch, creek or stream, create containment dam in ditch or stream to contain the release/spill.
- Construct a temporary holding basin down-gradient of release/spill. Take precautions to not damage the embankments while creating the temporary basin(s).
- Cap or cover all tile intakes that are within or near site of the release/spill. (Note all covers should be pre-made.)

3. Report Release/Spill to IEPA (within 24 hours) in the following cases:

- If more than 25 gallons of livestock waste are released/spilled and unrecovered, or
- If a release/spill of livestock waste reaches waters of the state

4. Document Records of Release/Spill

- Note the date and time of the release/spill.
- Note the amount of livestock waste associated with the release/spill.
- Note the amount of livestock waste recovered from the release/spill.
- In the case where the release/spill is collected and land applied, document volumes, rates and locations of land applications.

➤ Illinois Environmental Protection Agency – Illinois Emergency Management Agency:

24 Hr. Number: 1-800-782-7860

24 Hr. Number: 217-782-7860

CONTRACTORS:

➤ Earth Moving:

Name: Tautz, Eric

Phone: 815/238-4242

➤ Local Custom Applicator (*if applicable*):

Name:

Phone:

➤ Local Custom Applicator (*if applicable*):

Name:

Phone:

➤ Irrigation and/or Pumping Equipment:

Name:

Phone:

➤ Equipment Contractor:

Name: Chuck Pilgrim

Phone: 815/626-0227

EMERGENCY ACTION PLAN

Actions, Contact Names & Numbers - Partial System Failure

➤ Electric Co.:
Name: Common Wealth Edison

Phone:

➤ Electrician:
Name: Terry Glenn

Phone: 815/225-7201

➤ LP/Natural Gas:
Name: Gold Star

Phone: 800/255-3835

➤ Plumbing:
Name: Cory Kendall

Phone: 815/631-7651

➤ Ventilation:
Name:

Phone:

➤ Heating:
Name: Cory Kendall

Phone: 815/631-7651

➤ Feed:
Name: Dekalb Feed

Phone: 815/625-4546

➤ Veterinarian:
Name: Milledgeville Vet Clinic

Phone: 815/225-7127

➤ Mortality Disposal:
Name: National By Products

Phone: 860/892-5177

➤ Insurance Carrier:
Name: State Farm Ins.

Phone: 815/625-5100

➤ IL Dept of Ag, Bureau of Animal Health
24/7 #:
Phone: 217-782-4944

CATASTROPHIC DEATH LOSS

1. Contact renderer

- Arrange for pickup of deads
- Make sure that employees & cleanup use appropriate health protections (masks, etc.)

2. Contact your local vet

3. Be in contact with the State Dept. of Agriculture Bureau of Animal Health as needed. (24/7 # provided)

Section 9 Whole Farm Nutrient calculations

Nutrient Production **Jakobs Brothers Blacktop Farm**

Nutrient Production Per 1,000 Gal		Gallons or Ton Produced		Total N		P2O5		K2O		Total N Produced Per Year		Total P2O5 Produced Per Year		Total K2O Produced Per Year	
Type of animal															
Solid (ton)	1,452			7		4		7		10,164		5,808		10,164	
Liquid (gal)	5,486,658			27		18		24		148,140		98,760		131,680	
Whole Farm										158,304		104,568		141,844	

* From Waste volume calculation page

Crop Nutrient Need **Per Acre**

Crop	Yield	N lbs/ac	P2O5 lbs/ac	K2O lbs/ac	Acres needed based on N produced**	Acres needed based on P2O5 produced***
Corn (following corn or wheat)	200.0	240	86	56	660	1,216
Corn (following beans)	200.0	200	86	56	792	1,216
Beans	60.0	0	51	78	n/a	2,050
Wheat	90.0	100	81	27	n/a	1,291

**Total N produced/N needed per acre

***Total P produced/P needed per acre

Current crop rotation			
Crop	Acres	N needed	P2O5 needed
Corn (following corn or wheat)	931	223,440	80,066
Corn (following beans)	250	50,000	21,500
Beans	250	0	12,750
Wheat	250	25,000	20,250
Total	1,681	298,440	134,566

Calculations do not take into account nutrient losses from application of waste.

Section 10 Facility Operation & Maintenance Plans

Facility Operation and Management

1. Check backfill areas around facilities often for excessive settlement. Determine if settlement is caused by consolidation, piping or failure of the structure walls or floor. Necessary repairs must be made. Refer to safety items.
2. Check walls and floor often for cracks and/or separations and make needed repairs. Check earth berms and embankments for sloughing, erosion or settlement. Maintain embankment and backfill elevations as specified in the design. Check a minimum of two times a year and when the facility is empty. Maintain design elevation of berms and fill.
3. Outlets of foundation drains should be checked frequently and kept open. The outflow from these drains should be checked periodically when the storage facility is being used to determine if there is leakage from the facility into these drains. Leakage may be detected by the color and smell of the outflowing liquid, by lush dark green growth of vegetation around the outlet, by the growth of algae in the surface ditch or by the vegetation being killed by the outflowing liquid. If leakage is detected, repairs should be planned and made to prevent the possible contamination of groundwater. Refer to safety items when planning and making repairs. Quarterly samples should be collected from foundation drains as required by the Livestock Management Facilities Act.
4. Divert surface water away from the storage facility. Check the channels and berms of the clean water diversions around the barnyard, buildings and storage facility frequently. Channels must be protected from erosion and berms must be maintained at proper height so the diversion channels have adequate capacity. These channels and berms should not be used as haul roads unless they were designed and constructed as haul roads.
5. Check frequently for burrowing animals around buildings, structures, berms and backfill. Remove them and repair any damage.
6. Inspect haul roads and approaches to and from the storage facility frequently to determine the need for stone, gravel or other stabilizing material.
7. Do not allow runoff from loading areas and/or spills to flow into streams or road ditches.

8. Install and maintain a marking or gauge post that clearly shows the design, one-half, and full levels of the facility.
9. Repair or replace any rusted or damaged metal and paint.
10. A good vegetative cover of recommended grasses should be maintained on earth berms and embankments. If the vegetative cover is damaged, it should be reseeded as soon as possible. The vegetative cover should be mowed at least twice a year to control weeds, encourage vigorous growth and discourage rodent activity.
11. Immediately repair any vandalism, vehicular or livestock damage to the facility, the surrounding area, or any appurtenances.
12. Pump-out shall commence when the deep pit facilities are approximately 1' from the bottom of the slats and should continue until the depth is reduced to approximately 1'.

Earthen Storage/Lagoon – Operation & Maintenance

1. Earthen slopes shall be checked for rills and gullies. Seeding shall be as necessary to maintain a grass cover. Weeds shall be controlled. The top of dam and outside slopes shall be mowed annually to discourage weed growth and allow closer examination of the earth embankment. Quickly remove woody vegetation that begins to grow on the embankment to prevent root establishment.
2. Earthen slopes shall be checked for soft or damp/wet areas that may be a sign of potential leakage. Burrowing animals in the slopes shall be controlled. Animals shall be immediately removed and the burrow holes filled.
3. Fencing/gates shall be maintained around the structure to exclude animals and humans at all times.
4. Safety equipment (life buoys, ropes) and warning signs shall be maintained and checked periodically for wear.
5. High traffic areas, such as pump access areas, should be lined with aggregate or concrete if vegetative cover cannot be maintained.
6. Where dedicated agitation areas are established, inspect the bottom for scour holes. Where holes develop, fill with compacted clay, and line the surface with concrete to prevent further scouring. If this does occur, please contact the local NRCS office or a licensed professional engineer for assistance.
7. The maximum operating level in the facility is 2 feet below the low point in the existing embankment that contains the manure and runoff. When this elevation is reached, pump-out should commence as long as soil conditions exist that will allow for infiltration of the manure liquids. Pump-out is not to occur in December, January, or February. Pump-out should not be scheduled if severe or wet weather is a threat. The elevation at which pump-out is to occur shall be marked with a post or other suitable device. Pump-out should begin when average depth is at least 2 feet below top of berm, and end when the facility is at an average depth of 1'.
8. If possible, thoroughly agitate the storage facility one hour before pump-out and during pump-out to ensure uniform distribution of nutrients in manure.
9. Domestic and industrial waste from toilets shall not be discharged into the storage facility (s).
10. In the event of closure or shutdown, where there is no longer a need to manage manure and runoff from this operation, follow a closure plan according to state regulations. Contact the local NRCS office or a licensed professional engineer for assistance.

Nutrient Application Equipment Calibration

Commercial Fertilizer Application Equipment Calibration:

The nitrogen applicator, the commercial broadcast spreaders, and corn planter will be set per the manufacturers recommendations then filled with a known amount and checked over known acreage. Adjustments will be made to achieve the planned rates.

Manure Spreader/Tanker Calibration

There are several methods that can be used to calibrate the application rate of a manure spreader. The two best methods are the load-area method and the plastic sheet method. It is desirable to repeat the calibration procedure 2 to 3 times and average the results to establish a more accurate calibration.

Before calibrating a manure spreader, the spreader settings such as splash plates should be adjusted so that the spread is uniform. Most spreaders tend to deposit more manure near the spreader than at the edge of the spread pattern. Overlapping can make the overall application more uniform. Calibrating application rates when overlapping is involved requires measuring the width of two spreads and dividing by two to get the effective spread width.

Calibration should take place annually or whenever manure is being applied from a different source or consistency.

Load-Area Method

The load-area method is the most accurate and can be used for most types of manure handling. This method consists of determining the amount (volume or weight) of manure in a spreader and the total area over which it is applied. The most accurate method to determine the amount of manure in a spreader is to weigh the spreader when it is full of manure and again when it is empty (portable pad scales work well for this). The difference is the quantity of manure applied over the area covered. Spreader capacities listed by the manufacturers can be used to determine the amount of manure in the spreader. However care must be taken when using manufactures spreader capacities. Heaped loads, loading methods and manure type may vary considerably from what is listed by manufacturers of box and side delivery manure spreaders. Spreader capacities for liquid tankers are accurate provided the tanker is filled to the manufactures recommended levels, and no foam is present in the tank.

The area of spread is determined from measuring the length and width of the spread pattern. Measuring can be done with a measuring wheel, measuring tape or by pacing.

The application rate is calculated using the following formula:

$$\frac{\text{Spreader capacity (tons or gallons)} \times 43560 \text{ sq. ft/acre}}{\text{Distance traveled} \times \text{Spreading width}} = \text{Application Rate tons or Gallons/Acre}$$

Plastic Sheet Method

The plastic sheet method can only be used with solid or semi-solid manure. This method of calibrating spreader application rates involves 1) cutting a plastic sheet to the specified dimensions (56 inches X 56 inches), 2) weighing the clean plastic sheet, 3) laying out the plastic sheet on the ground and driving the manure spreader (applying manure at a recorded speed and spreader setting) over the sheet, 4) weighing the plastic sheet with the manure on it, and 4) determine the net weight of the manure on the sheet (weight of manure and sheet - weight of the clean sheet), and 5) the net pounds of manure equals tons per acre applied.

When calibrating manure spreaders, all details regarding tractor speed and manure spreader settings and date(s) of each calibration should be recorded with manure application information, and directly on the equipment. Mark equipment to ensure a known application rate is applied each time the referenced tractor speed and spreader settings are used. Manure spreader settings can include such things as: fast and slow settings on some box spreaders, gate position on side delivery spreaders and splash plate position and fill levels on liquid tankers.