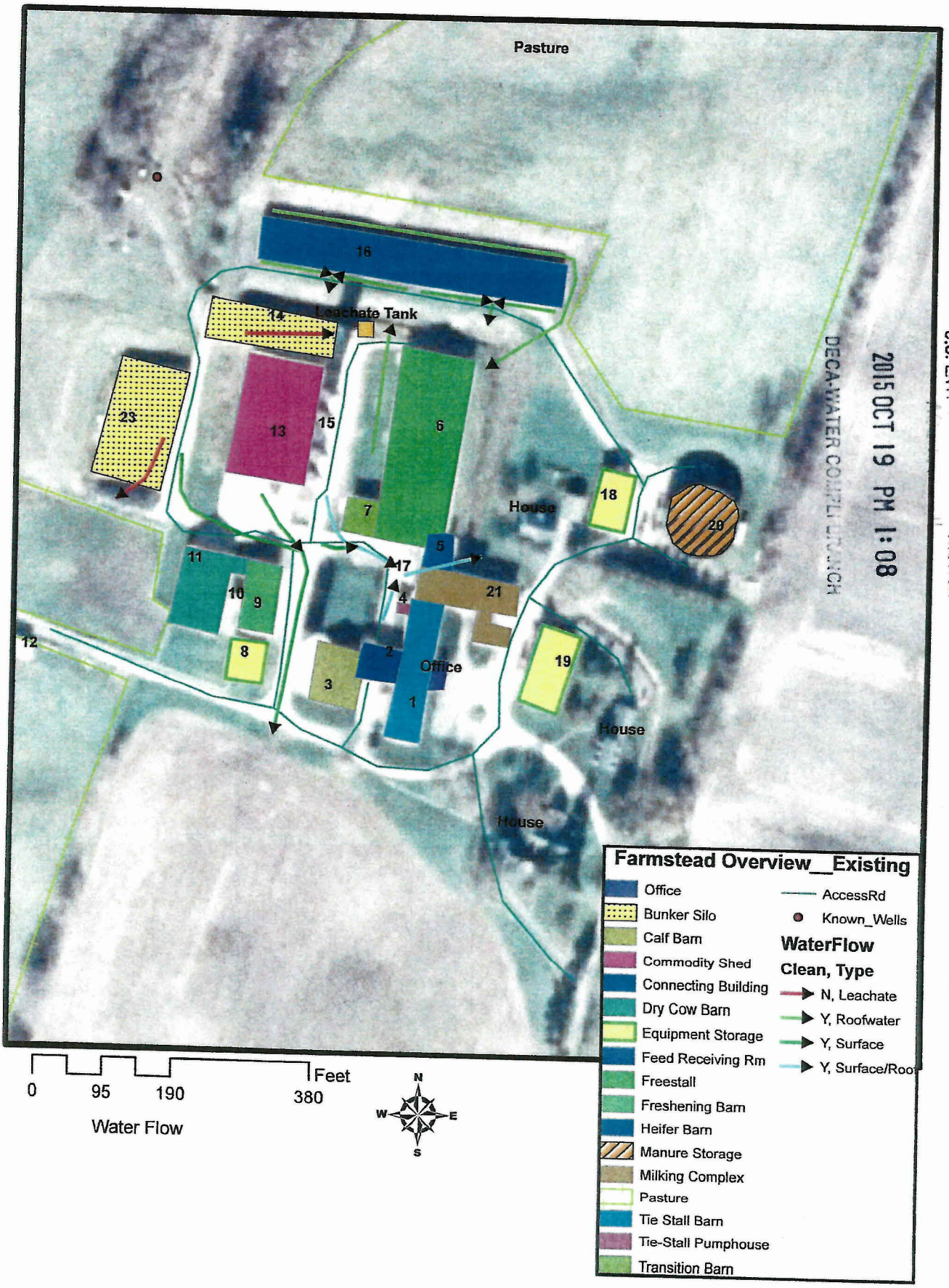
Waterpoint Farms



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DECA-WATER COMPLIANCE BRANCH
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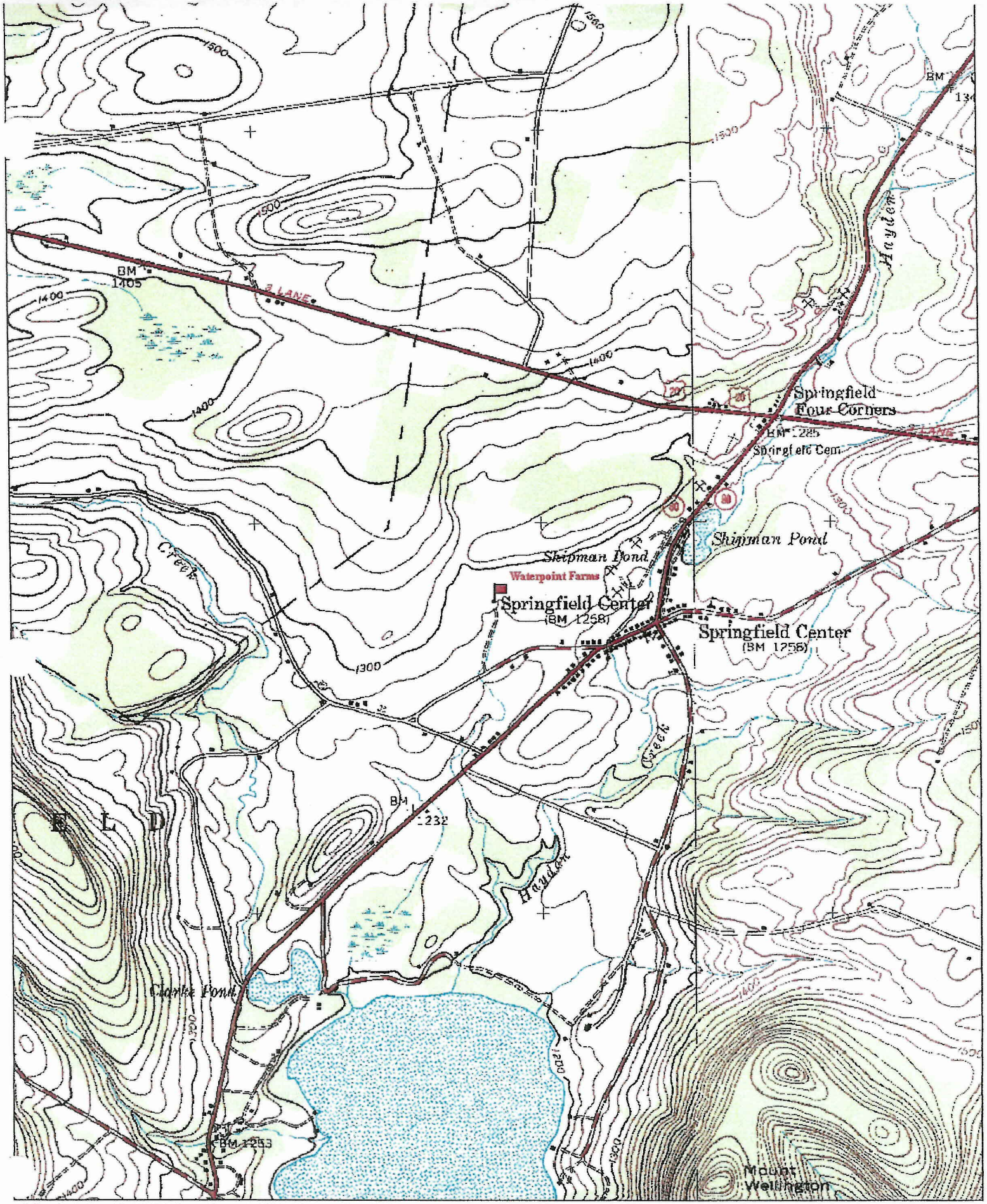


3-D TopoQuads Copyright © 1999 DeLorme Yarmouth, ME 04096 Source Data: USGS

700 ft Scale: 1 : 24,000 Detail: 13-1 Datum: NAD27

OBJECTIVES

STATE

THE OBJECTIVE IS TO COMPLY WITH THE EPA'S 1972 CLEAN WATERS ACT. ANY NEW OR EXPANDING OPERATIONS THAT CONFINE 1000 ANIMAL UNITS OR MORE, MUST APPLY FOR A GENERAL PERMIT GP-99-01, A 'ZERO-DISCHARGE' PERMIT. THE PERMIT STATES THAT THERE CAN BE NO DISCHARGE TO ANY NATURAL SURFACE WATER FROM THE AREA WHERE ANIMALS ARE CONFINED, BEDDED, FED, OR OTHERWISE MANAGED IN A CONCENTRATED MANNER, UNLESS A 25-YEAR 24-HOUR STORM EVENT OCCURS. DISCHARGES OCCURRING AFTER A 25-YEAR 24-HOUR STORM EVENT ARE ALLOWED, PROVIDED THE RUNOFF FROM THIS INITIAL EVENT IS RETAINED.

A REVISION HAS BEEN MADE TO THE GP-99-01 PERMIT AS OF JUNE 2004. ADDITIONAL REQUIREMENTS AND REFINING OF ANIMAL NUMBERS HAVE BEEN MADE IN THE GP-04-02 PERMIT. PLEASE REFER TO THE PERMIT FOR DETAILS.

PLAN

Stitzel's Waterpoint Farms is operated in the Otsego Lake and Upper Susquehanna watershed area. Both water sheds are listed on the Priority Waterbodies List (PWL). (See 0601-0180, 0601-0033) Sediment from erosion and nutrient runoff from agricultural practices have been identified as possible causes. The farm is currently working with the USDA to implement BMP's as a part of the EQIP process. Funding was secured in 2001 under the direction of Jim Pullano, USDA.

FARM SUMMARY

Stitzel's Waterpoint Farms, Inc., is a 360 dairy cow facility located in Richfield Springs, NY. Ronald and Alice Wellenstein operate the farm. The farm has 7 employees that are responsible for crop harvesting, farm chores, and for milking 3x a day in a double 10 parlor.

Manure is handled in the tie stall and freestall by scraping to a reception pit for transfer the 1.25 million gallon Slurry Store manure storage silo. Storage provides 6-8 months worth of storage and is emptied 2x annually. All milkhouse waste is transferred to the storage as well. Manure is land applied using 2 tank spreaders mounted on truck chassis; one has a capacity of ~~3300~~ gallons, the other ~~4000~~ gallons.
3850 - 2 tank 3

Manure from the freshening barn, dry cow barn, and heifer facility are scraped and daily land applied. When manure cannot be spread during the winter months manure is piled on Tract 1744. Manure is applied with a box spreader with a capacity of 10.3 ton.

Pastures are utilized by heifers and dry cows. It appears as though animals do not congregate in any one particular area to cause degradation of the forage and soil. If pastures are supplemented, feeding sites are rotated to allow for re-growth of vegetation and moving nutrients around the field.

Silage leachate has been a concern for the farm as identified by the previous planner. The strategy outlined by the previous planner is to utilize a high flow low flow collection system. The haylage bunker system has been planned out but may need to be modified as current standards have changed since first planned. The farm, current planner, and Tony Capraro-USDA NRCS, are developing the best method for implementation. A newly constructed corn silage bunker has been put into use (100' x 200'). There are no containment walls but silage is put up dry enough to minimize leachate production. A grass filter area is planned for the area to the south of the pad.

Crop production has typically been corn silage, corn grain, and alfalfa-grass. There are about 400 acres of corn and about 600 acres of hay produced annually for feeding the dairy. Manure is utilized on most of the fields for producing high quality forage without incurring additional costs associated with purchased fertilizer. Keith Additon, Agronomist and CCA, has been working with the farm for over 20 years providing nutrient management recommendations and strategies to prevent build up of nutrients caused by over-fertilization. A plan has been developed annually that addressed the nutrient needs of the crop and the use of just enough fertilizer to balance the needs of the crop produced.

The farm has been using strategies to minimize soil erosion. Corn grain is sometimes used to help improve surface residue. Highly erodible fields have been addressed with a conservation plan in the past and have been evaluated using the RUSLE2 to meet T, tolerable soil loss. Typical rotations are corn silage 4, hay 4; or, steeper ground may be corn silage 3, hay 5. Instead of plowing, chiseling the soil in the spring followed by a

finishing implement then planting, has reduced the amount of erosion by disturbing less of the residue and soil.

The manure handling system is comprised of several components;

1. Two 4" Patz impeller pumps
2. 3 reception pits
3. One 4" Houle impeller pump
4. 6" Schedule 80 PVC transfer pipe

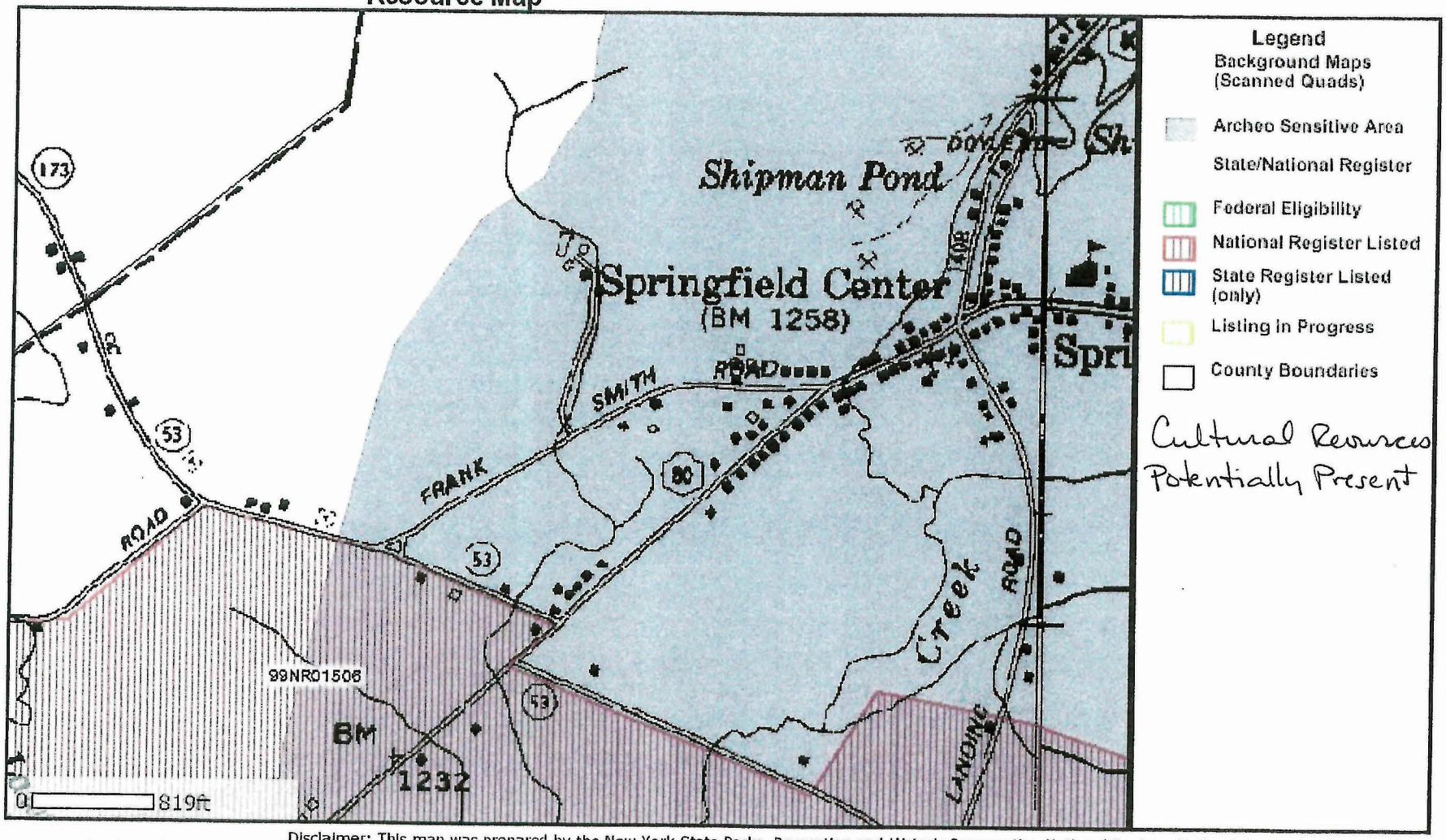
Calf barn manure drops through a slotted flow and gravity flows to a reception pit for transfer via a Patz pump to the tie stall barn.

Manure from the tie stall barn is conveyed to a reception pit by a barn cleaner. In addition to manure from the tie stall, milkhouse waste water and manure from the calf barn are commingled in the same reception pit. All manure is then transferred by the Patz pump via 6" PVC to the freestall reception pit.

The freestall barn is scraped by hydraulic alley scrapers to a grated floor opening. Manure gravity flows over dikes to the reception pit where it is commingled with the waste transferred from the tie stall barn. A 4" Houle impeller pump transfers the waste through a 6" schedule 80 PVC pipe to manure storage. A manual backflow device is in place to prevent backflow. A one way flapper is also part of the pump design within the hopper to provide 2 methods of safety.

The pumping system operates 1x daily. Calf manure is pumped every 3-4 days or as needed.

Waterpoint Cultural Resource Map



October 15, 2007

Disclaimer: This map was prepared by the New York State Parks, Recreation and Historic Preservation National Register Listing Internet Application. The information was compiled using the most current data available. It is deemed accurate, but is not guaranteed.

Waterpoint Farms

DEC Waterway Map

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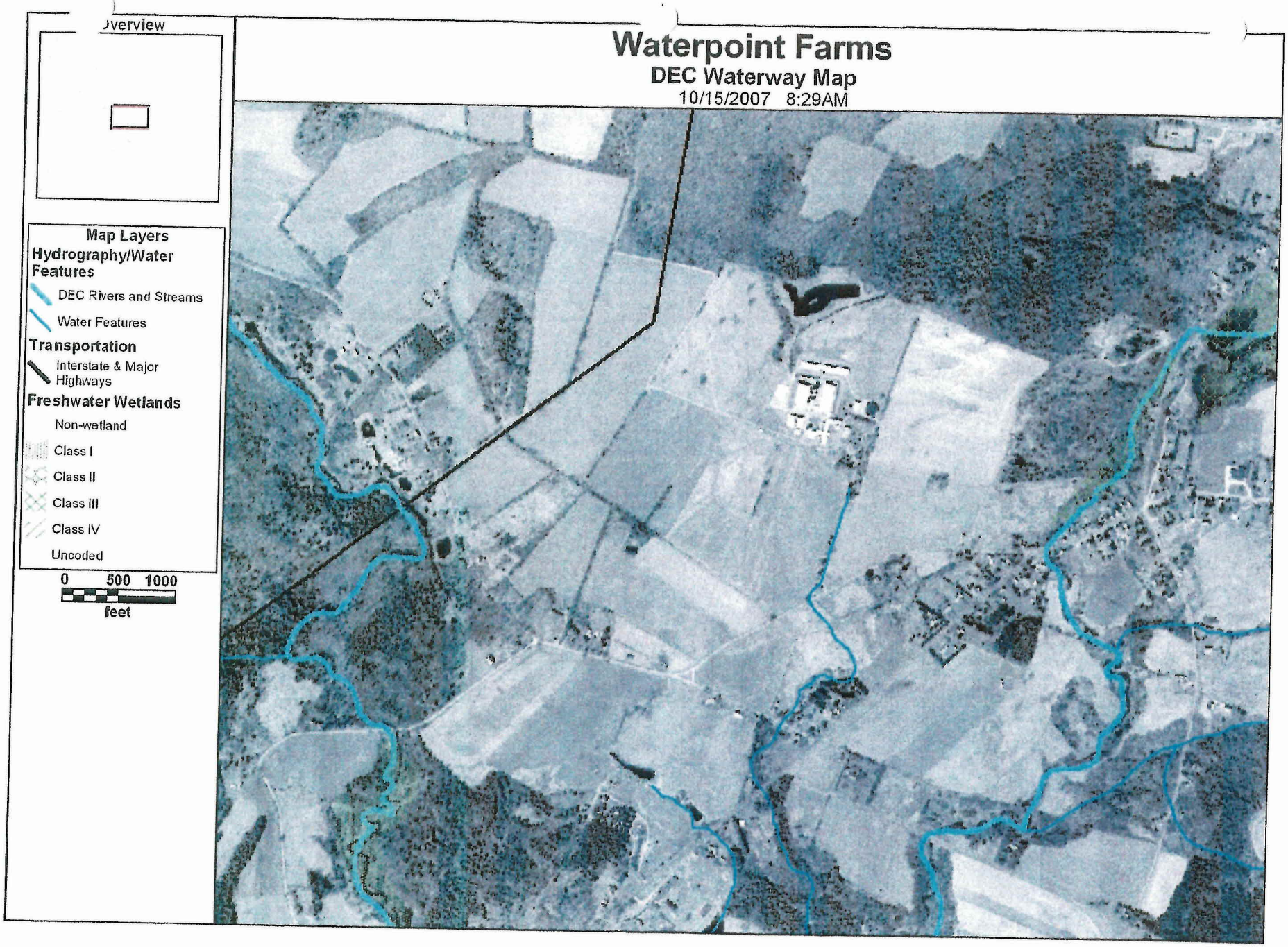

Hayden Creek and tribs (0601-0180) Need Verif

Waterbody Location Information

Revised: 06/26/

Water Index No:	SR-P404-12	**Drain Basin:**	Susquehanna River
Hydro Unit Code:	02050101/030 **Str Class:** C(T)		Upper Susquehanna-Unadilla R
Waterbody Type:	River	**Reg/County:**	4/Otsego Co. (39)
Waterbody Size:	18.7 Miles	**Quad Map:**	RICHFIELD SPRI (J-21-4)...
Seg Description:	entire stream and tribs		

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sourc

Use(s) Impacted	Severity	Problem Documentation
Aquatic Life	Stressed	Possible

Type of Pollutant(s)

Known: NUTRIENTS, SILT/SEDIMENT
Suspected: - - -
Possible: - - -

Source(s) of Pollutant(s)

Known: AGRICULTURE, STREAMBANK EROSION
Suspected: - - -
Possible: - - -

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 1 (Waterbody Nominated, Problem Not Verified)
Lead Agency/Office: ext/WQCC
TMDL/303d Status: (TMDL Not Required (No Impairment))

Resolution Potential:

Further Details

Fish/aquatic life support in Haden Creek and its tributaries may be limited by nutrient enrichment and excessi sedimentation. Agricultural activities (barnyard runoff, manure spreading, livestock access to streams) and streamba erosion in the tributary watersheds are cited as significant sources. Increases in nutrient loads and chlorides have be documented by the SUNY Oneonta Biological Field Station. Although water quality impacts in the stream itself ne to be verified, the trib has been identified as a significant contributor of nutrients and sediments to Otsego Lake. (T State of Otsego Lake, Harmon etal, SUNY Oneonta Biologic Field Station, 1997)

Comprehensive Nutrient Management Plan Summary

Waterpoint Farms

This Comprehensive Nutrient Management Plan has been developed as the key element in helping the farm operator to achieve compliance with the guidelines set forth by the CAFO General Permit, NYS DEC, and NRCS Waste Management System Practice Standard (NY-312). This standard addresses a system of Best Management Practices which guide the proper management of liquid and solid wastes around the farmstead facilities and fields. Every attempt has been made to set this information forth in a format that is easy to follow and understand, and the farm operator is encouraged to review this document often. In the true spirit of stewardship, it is hoped that these guidelines will be followed to achieve a lasting agriculture and a healthy environment.

The core elements of the Waste Management System Standard that have been applied to the operation are as follows:

Farm Inventory: A farm inventory has been conducted to identify areas of potential pollution source. The tools used in this evaluation include various NRCS Standards, Cornell Cropware, RUSLE2, soil testing, and farmstead evaluations, etc. The results of this inventory are summarized as existing conditions within the sections of the CNMP and are the basis for all planned BMPs and recommendations.

Farmstead & Barn Areas: Manure is collected and sent to the Slurrystor unit. Silage is stored in bunk silos and a leachate collection system with Vegetative Treatment Area is in place. (Concentrated Sources Section)

Nutrient Management: A plan to direct the application, timing, and rate of fertilizer and manure to crop fields has been developed, based on an evaluation of runoff, erosion, and leaching risk for each field. (Nutrient Management Section)

Record Keeping: The plan contains several record keeping systems that need to be kept current. These records are required to document compliance with the CNMP, and they will track crop rotations, manure and fertilizer applications, and other field activities. Documentation should also take place as BMPs are installed according to the BMP implementation schedule. (Record Keeping Section)

— BMP's —

IMPLEMENTATION SCHEDULE

ITEM OF CONCERN	IMPLEMENTATION DATE
Record Keeping (NY748) Manure Spreading Fertilizer Use Lime Use Crop Rotations Yield per field Rain (every 0.3 inch)	**Winter 2006**
Manure Pile (NY749)	**Spring 2006**
Manure Storage (NY313)	**Fall 2008**
Silage Leachate Control (NY312, NY393a) Direct low flow to tanks Grass filter area (GFA) high flow	**Fall 2007**
Clean Water Exclusion (NY312, NY558, NY707) Keep rain water out barnyard areas	**Summer/Fall 2006**
Feed Lot Rotational Grazing, Clean Water Exclusion, Storage	**Summer 2008**
Barnyard Management (NY707) Home and Butler Rd	**Fall 2007**
Pasture Management (382, 614) ***Utilize 90% cost share CRP funding***	**Fall 2008**
Cropland BMP's Utilize buffer strips as necessary--CRP money, NRCS can help 90% cost share Utilize tile drainage (NY606) where recommended -Continued Next Page- Diversions, and Grass waterways, as needed Sure up head cuts on field border	**Summer/Fall 2008**
Petroleum Storage Secondary Containment	**Fall 2008**
Soil Testing (NY590) Every Manured Field 1 out of 3 years	**Annually**

Manure Sampling (NY312, NY590)	**Every year**
PSNT Sampling (NY590) On high NLI fields (<10)	**Every year additional commercial N is desired.**
Update Nutrient Management Plan (NY590)	**Yearly**

Waterpoint Farm Concentrated Sources

1. **Tie Stall Barn:** The covered and enclosed facility houses 69 cows from 2 years onward to mortality. Alley silage waste, sawdust bedding and manure is scraped daily and deposited into spreader for daily application. Small amount of manure and waste that deposits in gutter system is pumped into slurry system. **There are no documented problems with this facility.**

2. **Feed Receiving Shed:** Covered Area used to house truck that stores bedding for tie stall. Feed-cart for tie stall also housed in shed. Area cleaned as necessary with skid steer. **There are no documented problems with this facility**.

3. **Calf Barn:** This covered and enclosed facility houses 40 young stock from new borne to two months in age. The facility is part tie stall and part cages. Calves are fed by a computer feeder. Straw is used for young calves and sawdust for weaned heifers. Water, bedding and manure is pumped first to the tie-stall barn then to the free-stall barn and ends up in the slurry. **There are no documented problems with this facility.**

4. **Tie-stall Pumphouse:** This small building houses the pump system for the tie-stall facility. Manure is pumped from this location to the free-stall. **There are no documented problems with this facility.**

5. **Connecting Building:** This covered and enclosed building connects the milking parlor to the main free-stall barn and is used as a transient area by the cows prior to milking. Area is daily scraped and all waste goes to the slurry. This facility has a veterinary pen that is not used as an overnight facility and this building houses the main pump system for all wastes to the slurry. **There are no documented problems with this facility.**

6. **Main Free-stall Barn:** This covered and enclosed facility can accommodate 208 cows. Bedding consists of shredded cardboard. All waste feed, bedding and manure are scraped daily to the slurry system. **There are no documented problems with this facility.**

7. **Transition Barn:** This covered small facility located off of the free-stall barn houses 10 to 14 heifers and/or fresh heifers. Bedding consists of shredded card board and all waste material is scraped and daily spread. **There are no documented problems with this facility.**

8. **Equipment Shed:** This covered and enclosed facility formerly housed horses and now is used as an equipment storage building. Horses are no longer on the farm. **There are no documented problems with this facility.**

9. **Freshening Barn:** This covered and enclosed facility houses 5 to 12 cows for birthing. Bedding is straw with lesser amounts of shredded cardboard. All waste is scraped daily for dail spreading. **There are no documented problems with this facility.**

10. **Water Filtration House:** Small building located off the freshening barn houses the water filtration system for entire facility, including three residences. Water pumped into facility from one spring with a impounded pond as a backup. Water is screened with ultra-violet rays. Clean-water wastewater from facility drains into dry well under facility to ground. **There are no documented problems with this facility.**

11. **Dry Cow Barn:** This newer facility is covered and enclosed. It has a 70 cow capacity and houses heifers, 1st class heifers from two years old to cows to mortality. The more recent dry cows (far-aways) or approximately half the herd has access to pasture. Bedding is shredded cardboard and all waste is scraped daily for daily spreading. **There are no documented problems with this facility.**

12. **Equipment Shed:** This shed is located in the dry cow pasture and generally stores equipment. Seasonally, and during adverse weather the facility is used as a pasture shelter for the dry cows. **There are no documented problems with this facility.**

13. **Commodity Shed:** This covered and enclosed facility stores all the feed and bedding for the various livestock facilities. **There are no documented problems with this facility.**

14. **Bunk Silo Effluent:** This area generally stores first cutting haylage and is covered by a tarp. Silage leachate currently flows from bunk to concrete lanes and eventually drains into tributary to Otsego Lake. A low flow collection system will be installed where all leachate is collected into a tank which will be pumped into spreader for daily application. (50x170)

15. **Tower Silos:** Four silos used on operation, three for haylage one for high moisture corn. Silos are sealed with no evidence of leaking or leachate. **There are no documented problems with this facility.**

16. **Heifer Facility – Barn-on-the-Hill:** This covered facility can house up to 180 heifers. Heifers with confirmed pregnancies have access to the pasture immediately north of the barn. Bedding is sawdust and all waste is daily scraped into the spreader and daily spread. **There are no documented problems with this facility.**

17. **Facility Runoff:** Concrete encompasses the areas between the tie-stall barns, the calf barn, the free-stall and the transition barn. This are is used as transient areas for equipment and assorted farm machinery. Cows are confined and do not have access to this area. The tie-stall barn has underground drainage into the tributary of Hayden Creek. The majority of water on this concrete area is from rain. Grading takes the water to a collection east of the tie-stall barn where water directly discharges into the tributary to Hayden Creek. The water is clean-water, however, there is a possibility that small amounts of feed or waste from vehicular tires may end up in the drain. It is recommended that a solid catch system is installed above or beneath the drainage grate to collect solids from entering the system. The collection can be cleaned as necessary to allow water through.

18. **Equipment Shed:** Facility used to house farm machinery and assorted equipment. **There are no documented problems with this facility.**

19. **Equipment Shed:** Facility used to house farm machinery and assorted equipment. **There are no documented problems with this facility.**

20. **Slurry Store:** Storage provides a 6 to 8 month capacity. Structure generally emptied twice annually in the spring and fall. Straw blown on top of storage in summer months to control odor. **There are no documented problems with this facility.**

21. **Milkhouse:** This covered and enclosed facility includes a double-10 parlor and holding area. Approximately 1100 gallons of water goes through the milkhouse daily and is pumped to the slurry store with all wastes. **There are no documented problems with this facility.**

22. **Manure Field Pile:** Field pile located on Tract 1744 (not on facility map photo). Pile area is in a well-drained Wassaic soil and over 300 feet to the nearest watercourse. **There are no documented problems with the pile area.**

23. Corn Bunker Silo (100' x 200') See map for discussion

All dead animals from all facilities are removed from the farm within approximately 24 hours by a commercial rendering service.

II. Comprehensive Nutrient Management Plan (CNMP)

The CNMP is designed to take into account many different factors that may influence the build up of nutrients within the soil, and, factors that may result in the loss of those nutrients to creeks, streams, wells, etc. The strategies laid out are to meet NY312, NY590, and NY633. Keeping records (NY748) of inputs and yields will allow for more accurate management strategies to be implemented.

As this is a comprehensive plan, detail about the dairy ration, spreader calibrations, and manure storage capacity is also included.

A. Animal Numbers

The farm has 360 mature dairy cows and 240 heifers. The total number of animal units is 672. The amount of waste generated is calculated to be 3.4 million gallons. Records indicate that volumes produced is closer to 4 million gallons annually.

B. Waste Calculations

In order to determine the amount of generated waste the following calculations were used;
No. of cows x (Ave. wt/1000 lbs)+ No. of heifers x (Ave. wt/1000 lbs)= No. of animal units
No. of animal units x 15 ton of manure produced per year per animal unit=tons of manure Annually

Bedding used

Source	Tons per year
Paper Bedding	936
Sawdust	350

Amount of rain or sprinkler water entering manure storage annually=gallons per year

Source	Surface Area (sq.ft)	Total Gallons
Slurry Store (101')	8007	206,000

Amount of Milkhouse waste water (MHWW) generated annually=gallons per year

Source	Gallons per Day
Parlor and milkhouse	1200

Tons of manure and bedding are added, multiplied by 2000 and divided by 8.35 lbs to get gallons generated annually. Add total to MHWW volume and Rainwater volume for total volume to be managed.

C. Land base

The farm operates 855.7 acres; 338.4 acres of corn, 516 acres of hay, and 6 acres of pasture. The number of animal units per acre is 0.78.

D. Dairy Ration Information

The dairy ration is currently being by Dr. Robert Ladue. The National Research Council has determined that dairy cows can produce milk and breed satisfactorily with dietary P levels as low as 0.32% of the ration DM. Before dropping to this level make sure benchmarks are in place to avoid financial losses. A middle of the road level would be to have the dietary P level at 0.38% of the ration DM. Your level in the diet is 0.38%. By minimizing overfeeding P in the diet manure P should be reduced.

Milk urea nitrogen (MUN) levels should also be checked to determine if too much protein may be fed for the amount of carbohydrates in the diet. Reducing the amount of N excreted in the manure and urine will be beneficial both environmentally and herd health wise. Work with you nutritionist to optimize accordingly.

E. Manure Spreader Calibrations

Manure spreader calibrations are necessary to help determine accuracy in covering fields with the right number of loads. If spreaders have not changed from the last plan update no additional calibrations were completed. If a new spreader has been added to the operation the following information outlines the spreader details.

Spreader	Capacity	Gal.	Tons	Completed by	
Truck 1	3485	X		K. Additon	
Truck 2	3600	X		K. Additon	
Truck 3	3600	X		K. Additon	
Box Spreader	10.3		X	K. Additon	

F. Manure Storage Capacity

The amount of storage capacity normally does not change without making structural changes; however, the number of months worth of storage can be affected by cow number, additions of milkhouse waste water, bedding use, or poor exclusion of rain water. The following is intended to be used as a guide to help determine timing of applications.

Storage Structure	Volume	Months Storage based on Waste Calculations
Earthen Storage (101' diameter x 25') See Manure Analysis, Collection, and Storage supplement	1,378,357	7

Description of pumping and disposal mechanisms utilized

For manure management

The manure handling system is comprised of several components;

1. Two Patz impeller pumps
2. 3 Reception pits
3. One Houle impeller pump
4. 6' Schedule 80 PVC transfer pipe

Calf barn manure drops through slotted floors and gravity flows to a reception pit for transfer via a 4" Patz (7.5hp)pump to the tie stall barn.

Manure from the tie stall barn is conveyed to a reception pit (12.5' x 17' x 4') by a barn cleaner. In addition to manure from the tie stall, milkhouse waste water and manure from the calf barn are commingled in the same reception pit. All manure is then transferred by the Patz (10hp) pump via 6" PVC to the freestall reception pit (12' x 10.5' x 8').

The freestall barn is scraped by hydraulic alley scrappers to a grated floor opening. Manure gravity flows over dikes to the reception pit where is it commingled with the waste transferred from the tie stall barn. A 4" Houle (30hp) impeller pump transfers the waste through a 6" schedule 80 PVC pipe to manure storage. A manual backflow device is in place to prevent backflow. A one way flapper is also part of the design within the hopper to provide 2 methods of safety.

The pumping system operated 1x daily. Calf manure is pumped every 3-4days or as needed.