White Farms LLC

Comprehensive Nutrient Management Plan

Plan Prepared for:
Claude White
550 Morrow Road
Independence, Oregon 97351
(503) 838-3505

Plan Prepared by:
Northwest Agricultural Consulting
Tom Thomson
1275 Oak Villa Road
Dallas, Oregon 97338
(503) 623-0468

Signature and Certification:

As the Owner/Operator and Decision Maker of White Farms LLC, I certify that:

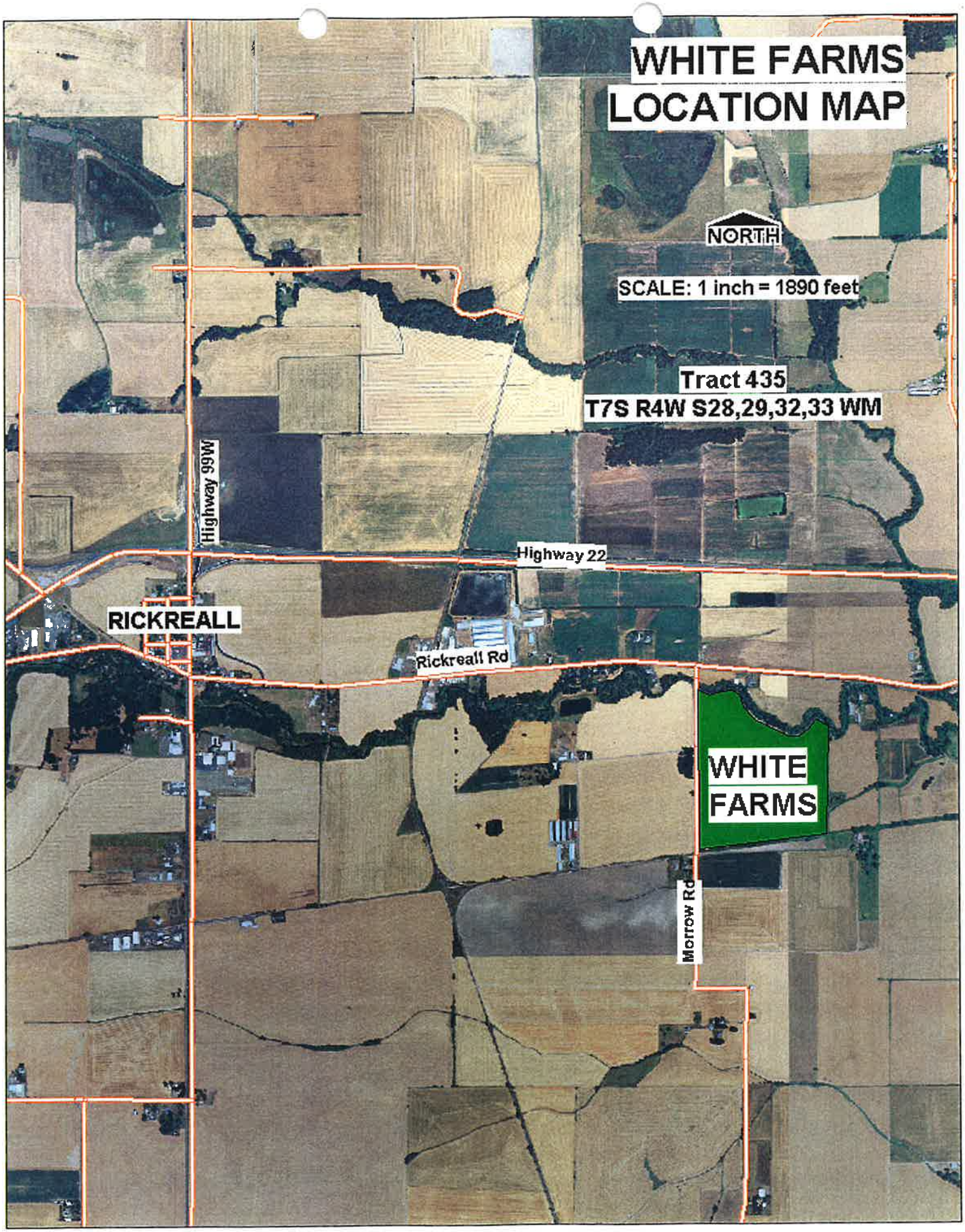
1) I have received a final printed copy of the comprehensive nutrient management plan from Northwest Agricultural Consulting;
2) Northwest Agricultural Consulting has consulted with me during the plan development process to obtain my input;
3) Northwest Agricultural Consulting has explained to me the contents of the final comprehensive nutrient management plan;
4) Northwest Agricultural Consulting has explained to me how to implement the final plan, what records should be kept, and when the plan may need to be updated;
5) Northwest Agricultural Consulting has discussed with me a list of additional NRCS-recommended nutrient management implementation practices that I may wish to consider adopting;
6) Northwest Agricultural Consulting has made a good faith effort to answer all of my questions about the comprehensive nutrient management plan and its contents.

Signature: _____

Date: 8/31/06

MA# 143906
AWMP# 06129
Due Date: 10/20/06

Approved 9/12/06 CH


WHITE FARMS
LOCATION MAP
NORTH
SCALE: 1 inch = 1890 feet
Tract 435
T7S R4W S28,29,32,33 WM
Highway 99W
Highway 22
RICKREALL
Rickreall Rd
WHITE
FARMS
Morrow Rd

Objectives

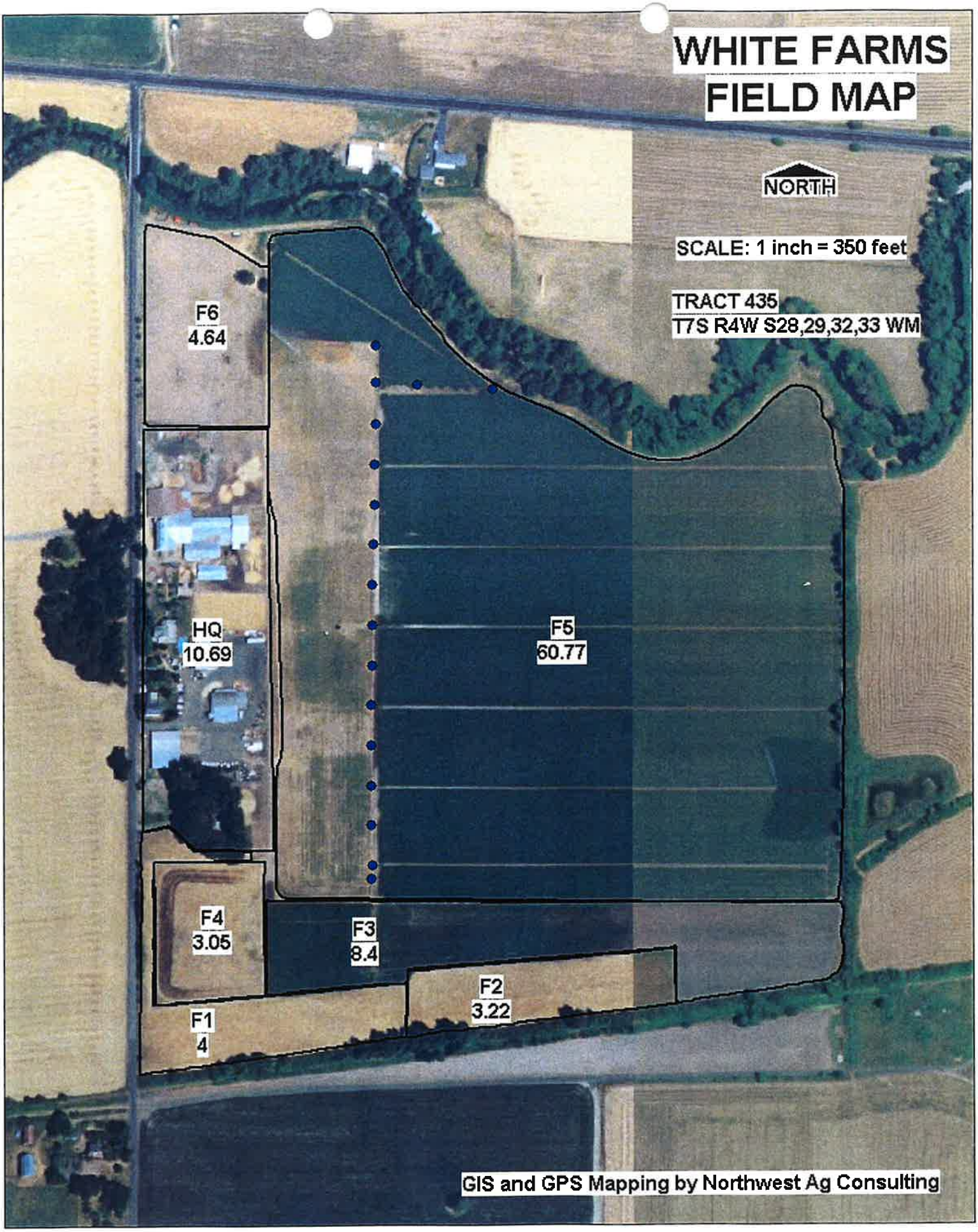
White Farms LLC, is a family farm which was started by Claude White's parents, and is currently operated by Claude and his mother. The farm will pass to the next generation in the future. Claude's main goals are to keep the farm economically viable and to stay in compliance with environmental regulation.

Narrative

White Farms LLC raises beef cattle on 94.8 acres. The operation is a state CAFO, permitted for 200 animals. All animals are confined in the barns from October through March. The grazing season, in a typical year, runs from April through September, depending on weather conditions. The farm has a year round calving schedule. Heifers are sold for breeding stock, when they reach approximately 500 pounds. Steers are sold for locker beef at approximately 1000 pounds.

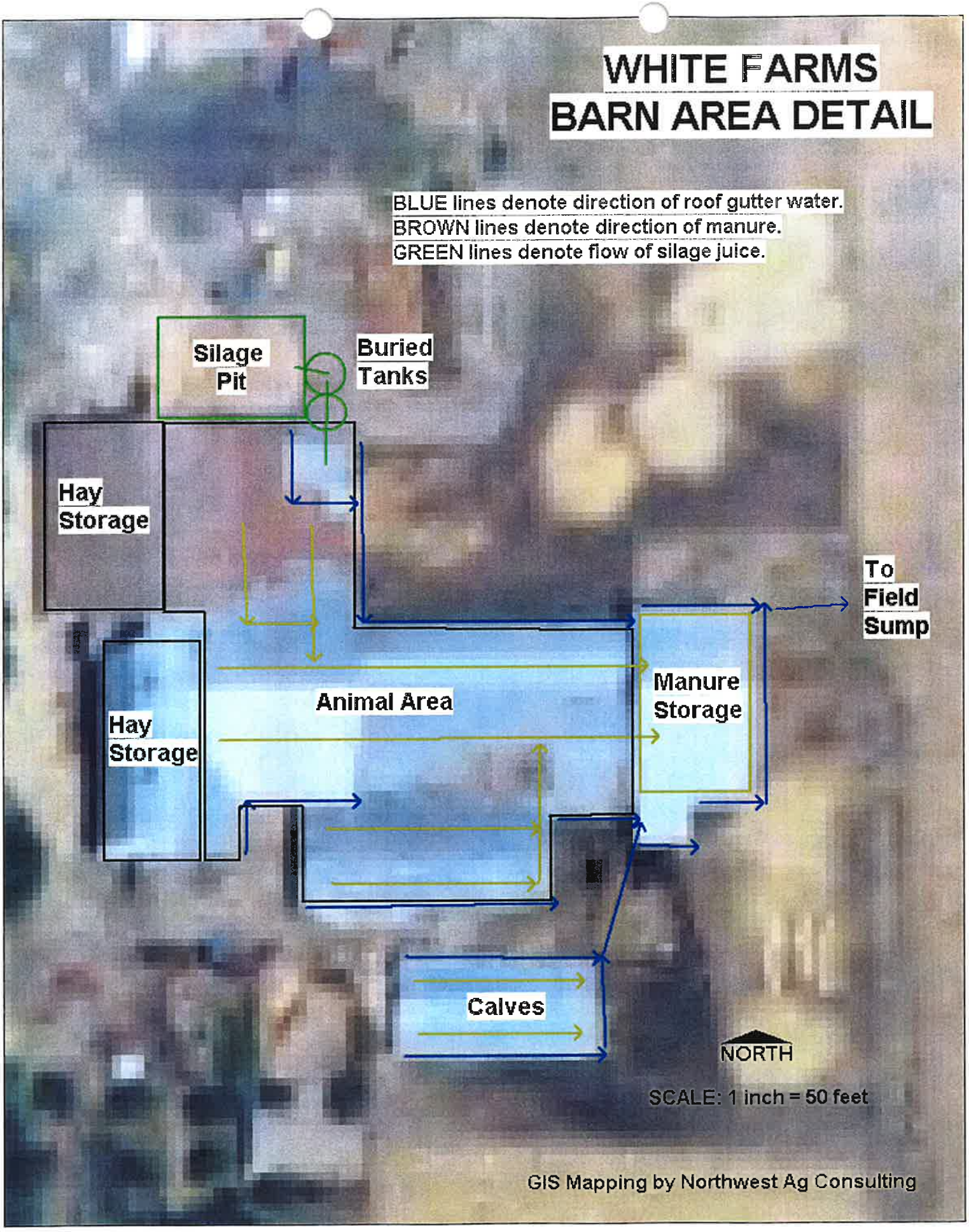
All manure is handled in a dry solid form. Manure is scraped from the barns to a covered, dry stack manure storage facility. All roofs are guttered, with downspouts draining clean water, away from the facility, to a nearby drainage ditch. The silage is covered with plastic for storage and preservation. Silage juice is collected in two below ground, 600 gallon tanks and carried through a pipe to the trough within the animal housing. Cattle drink the silage juice. An exercise lot or sacrifice area is located east of the barns for spring and summer use. Each fall, annual ryegrass seed is broadcast onto the lot and left to grow for the winter.

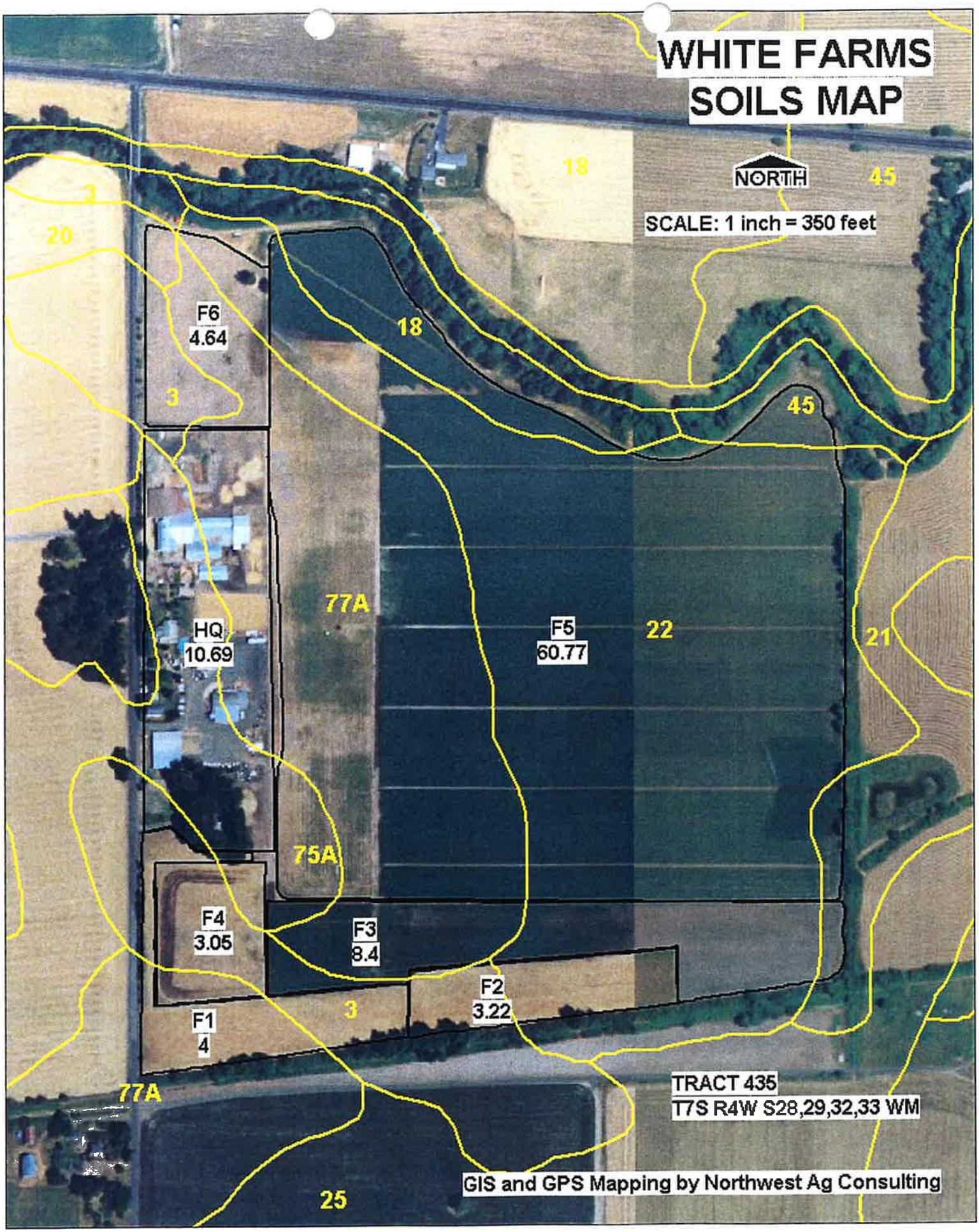
There are 84.1 acres on the farm that are available for manure applications. Solid manure and bedding is hauled with a manure spreader, in the spring of each year and incorporated into crop land prior to planting corn silage. Manure may also be applied to pastures and annual ryegrass silage in the fall. Phosphorus index ratings for farm fields are LOW. This CNMP is balanced for Nitrogen.


WHITE FARMS
FIELD MAP
NORTH
SCALE: 1 inch = 350 feet
TRACT 435
T7S R4W S28,29,32,33 WM
F6
4.64
HQ
10.69
F5
60.77
F4
3.05
F3
8.4
F2
3.22
F1
4
GIS and GPS Mapping by Northwest Ag Consulting


WHITE FARMS
FACILITIES LAYOUT
Morrow Ro
Silage Pit
Hay Barn
Cattle Barns and
Manure Storage
House
Commodity
Storage
House
Shop
Commodity
Storage
NORTH
1 inch = 25 feet
GIS MAPPING BY NORTHWEST AG CONSULTING

WHITE FARMS
BARN AREA DETAIL




WHITE FARMS
SOILS MAP
NORTH
SCALE: 1 inch = 350 feet
18
45
3
20
F6
4.64
18
3
45
77A
HQ
10.69
F5
60.77
22
21
75A
F4
3.05
F3
8.4
F2
3.22
3
F1
4
77A
TRACT 435
T7S R4W S28,29,32,33 WM
GIS and GPS Mapping by Northwest Ag Consulting
25

Soil Descriptions

3-Amity silt loam. This somewhat poorly drained soil is on terraces of the Willamette River and its major tributaries. It formed in mixed silty alluvium. Slopes are 0 to 3 percent and average about 2 percent. Elevation is 170 to 300 feet. The average annual precipitation is 40 to 45 inches, the average annual air temperature is 52 to 54 degrees F, and the frost-free period is 165 to 210 days. Permeability is moderately slow. Effective rooting depth is 60 inches or more. Available water capacity is 9 to 12 inches, and the water-supplying capacity is 20 to 26 inches. Runoff is slow, and the hazard of erosion is slight. A seasonal high water table is at a depth of 6 to 18 inches in winter and spring. This soil is used for small grain, hay, pasture, and grass seed. Drained areas are suited to a wider range of crops. Irrigated areas are used for pole beans, corn; and other row crops. Returning all crop residues to the soil and using a cropping system in which grasses, legumes, or grass and legume mixtures are grown at least 25 percent of the time help to maintain fertility and tilth. Small grain and grasses respond to nitrogen; row crops commonly respond to nitrogen; and phosphorus and legumes respond to phosphorus, sulfur, and lime. The soil is irrigated by sprinkler, furrow, or border irrigation, and sprinklers mainly are used. Irrigation water needs to be applied carefully at rates low enough to prevent runoff. Adequate water for irrigation can generally be obtained from wells. Drainage is the major concern, but if outlets are available the soil responds readily to open or closed drainage systems. The soil generally requires improved outlets to increase the subsurface drainage and lower the seasonal high water table. For maximum use and production, the soil needs a drainage pattern. This soil is poorly suited to commercial timber production. This soil is in capability subclass IIw.

18-Coburg silty clay loam. This moderately well drained soil is on terraces above the flood plain in the Willamette Valley. It formed in silty alluvial deposit. Slopes average about2 percent. Elevation is 180 to 200 feet. The average annual precipitation is 40 to 60 inches, the average annual air temperature is 52 to 54 degrees F, and the frost-free period is165 to 210 days. Included with this soil in mapping are areas of Malabon soils, which make up about 10 percent of this map unit, and Chehalis soils, which make up 5 percent. Permeability is moderately slow. Effective rooting depth is greater than 60 inches. Available water capacity is 10 to 12inches, and the water-supplying capacity is 20 to 26 inches. Runoff is slow, and the hazard of erosion is slight. A seasonal high water table is at a depth of 18 to 30 inches in winter and spring. This soil is well suited to pasture, hay, small grain, grass seed, and vegetable crops. Long-lived, deep-rooted deciduous fruit and nut trees, strawberries, caneberries, and alfalfa are adversely affected by a seasonal high water table, unless the soil is drained. Properly managing crop residues and using a cropping system in which grasses and legumes are grown at least 25 percent of the time help to reduce runoff and erosion and to maintain productivity and workability. Small grains and grasses respond to nitrogen; row crops respond to nitrogen and phosphorus; and legumes respond to phosphorus, sulfur, and lime. If residues are used, additional nitrogen is generally needed to prevent a decrease in yields. The soil may be irrigated by sprinkler, furrow, or border irrigation. Sprinkler irrigation is the most common method and is very satisfactory. Irrigation water should be applied carefully at rates low

enough to prevent runoff. Irrigation water is available from reservoirs or streams. This soil is in capability subclass IIw.

20-Concord silt loam. This poorly drained soil is on terraces of the Willamette River and its tributaries. It formed in silty and clayey alluvium of mixed mineralogy. Slopes average about 1 percent. Elevation is 150 to 300 feet. The average annual precipitation is 40 to 45 inches, the average annual air temperature is 52 to 54 degrees F, and the frost-free period is165 to 210 days. In a representative profile, the surface layer is dark grayish brown silt loam about 8 inches thick. The subsurface layer is grayish brown mottled silty clay loam about 6 inches thick. The subsoil is dark grayish brown mottled silty clay about 17 inches thick. The substratum is dark brown mottled silty clay loam that extends to a depth of 60 inches or more. Included with this soil in mapping are areas of Dayton and Amity soils, which make up as much as 10 percent of this map unit. Permeability is slow. Effective rooting depth is greater than60 inches. Available water capacity is 9 to 12 inches, and the water-supplying capacity is 20 to 26 inches. Runoff is slow to very slow or the soil is ponded, and the hazard of erosion is slight. A seasonal high water table is at a depth of less than 6inches in winter and spring. This soil is used for grass seed, cereal grain, hay, and pasture. Proper management of crop residues and a cropping system in which grasses or legumes or grass and legume mixtures are grown at least 25 percent of the time help to maintain fertility and tilth. Small grains and grasses grown on this soil respond to nitrogen, and legumes respond to phosphorus and sulfur.
Moderate to high applications of lime are needed to correct acidity. Irrigation is needed for maximum production of all crops. Water should be applied carefully so that the soil is not over irrigated. Over irrigation causes a high water table. Water is available, at times, from streams and ponds. This soil is in capability subclass IIIw.

21-Cove silty clay loam. This poorly drained soil is on alluvial bottoms along tributary streams. It formed in mixed clayey alluvium. Slopes are 0 to 2 percent but average about 1 percent. Elevation is 125 to 300 feet. The average annual precipitation is 40 to 60 inches, the average annual air temperature is 52 to 54 degrees F, and the frost-free period is165 to 210 days. Permeability is very slow. Effective rooting depth is less than40 inches because of a seasonal high water table. Available water capacity is 4 to 6 inches, and the water-supplying capacity is 20 to 26 inches. Runoff is very slow or the soil is ponded, and the hazard of erosion is slight. Flooding is common. A seasonal high water table is at a depth of less than 12 inches in winter. This soil is used mainly for grass seed, hay, and pasture, and some areas are used for spring grain. Management of crop residue and crop rotation are needed to maintain productivity and workability. A crop rotation system that includes grasses and legumes or a grass and legume mixture at least 25 percent of the time improves tilth and yield. Grain and grass crops respond to nitrogen. Legumes need phosphorus, sulfur, boron, potassium, and lime. This soil is in capability subclass IVw.

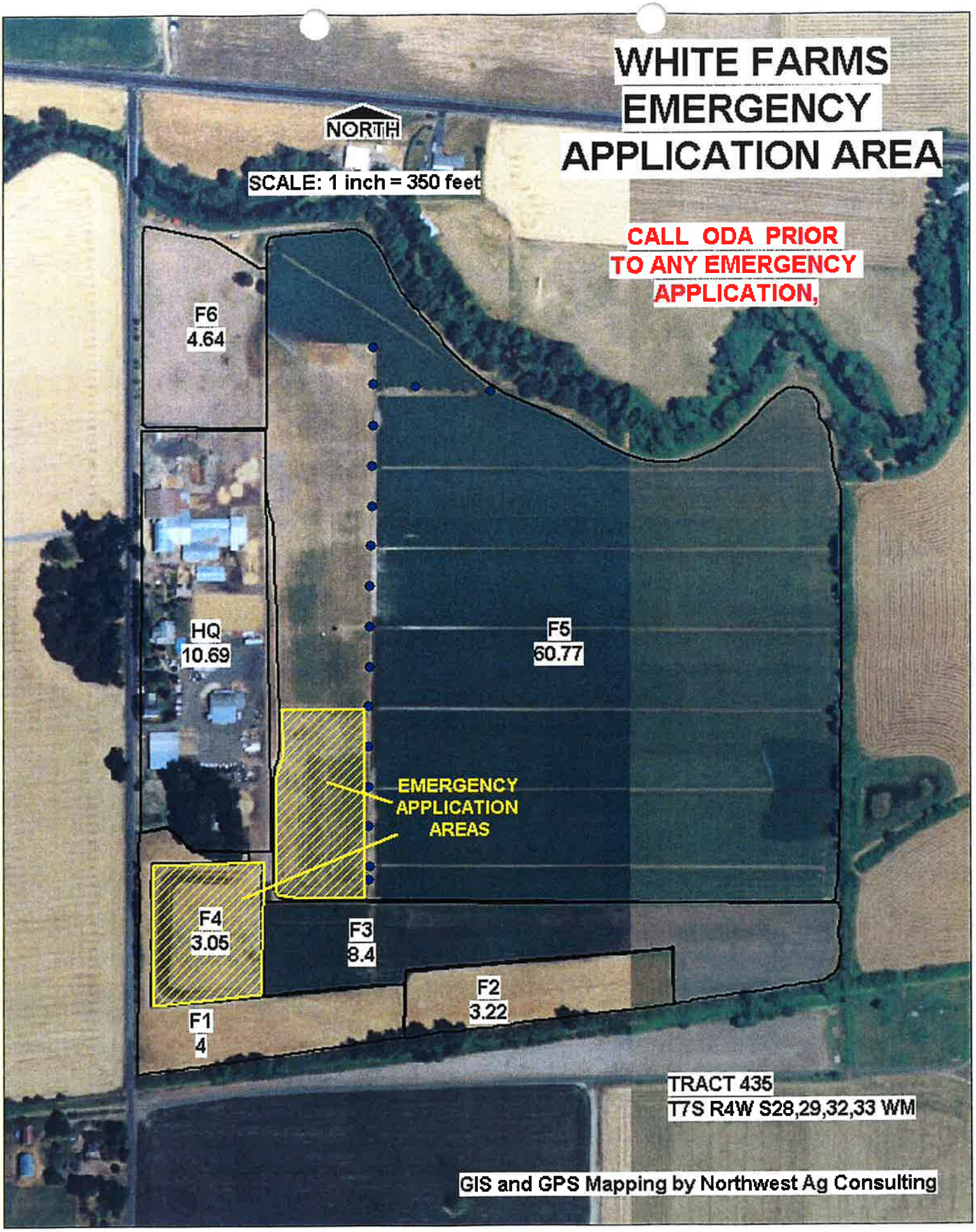
22-Cove silty clay loam, thick surface. This poorly drained soil is on alluvial bottoms along tributary streams. It formed in mixed clayey alluvium. The soil is more than 60 inches deep.

Slopes average about 1 percent. Elevation is 125 to 300 feet. The average annual precipitation is 40 to 60 inches, the average annual air temperature is 52 to 54 degrees F, and the frost-free period is 165 to 210 days. Permeability is very slow. Effective rooting depth is less than 40 inches because of a seasonal high water table. Available water capacity is 5 to 7 inches, and the water-supplying capacity is 20 to 26 inches. Runoff is very slow or the soil is ponded, and the hazard of erosion is slight. Flooding is common. A water table is at a depth of less than 12 inches in winter. This soil is used for small grain, pasture, and hay. Small drained and irrigated acreages are used for vegetables and specialty crops. Deep-rooted perennial crops are not suited to most areas of the soil because adequate drainage generally cannot be maintained in winter and spring. Management of crop residue and crop rotations are needed to maintain productivity and workability. A crop rotation system that includes grasses and legumes or a grass and legume mixture at least 25 percent of the time improves tilth and yield. Grain and grass crops respond to nitrogen. Legumes respond to phosphorus, sulfur, boron, and lime. Vegetables and berries respond to nitrogen, phosphorus, potassium, and sulfur. Sprinkler irrigation is used for vegetable crops, hay, and pasture. Application rates should be low enough to prevent a high water table. Water is available from streams and ponds. This soil has a high water table late in winter. This soil is in capability subclass IIIw.

45-Malabon silty clay loam. This well drained soil is on broad terraces along rivers and major streams. It formed in silty and clayey mixed alluvium. Slopes are 0 to 3 percent but average about 2 percent. Elevation is 200 to 300 feet. The soil is subject to overflow about once in 50 years. The average annual precipitation is 40 to 50 inches, the average annual air temperature is 52 to 54 degrees F, and the frost-free period is about 165 to 210 days. Permeability is moderately slow. Effective rooting depth is more than 40 inches. Available water capacity is 9 to 12inches, and the water-supplying capacity is 20 to 26 inches. Runoff is slow, and the hazard of erosion is slight. This soil is used mainly for cereal grain, grass seed, hay, pasture, vegetable, and specialty crops. Properly managing crop residue and using a cropping system in which grasses and legumes are grown at least 25 percent of the time help to maintain favorable fertility and workability. Small grain and grass respond to nitrogen; row crops respond to nitrogen and phosphorus; and legumes respond to phosphorus, sulfur, and, in many places, lime. If crop residues are used, additional nitrogen is needed to prevent decreased yields. This soil is in capability subclass IIs.

75A-Willamette silt loam, 0 to 3 percent slopes. This well drained soil is on broad terraces above the flood plain. It formed in silty alluvial deposits. Slopes average about 2 percent. Elevation is 150 to 300 feet. The average annual precipitation is 40 to 45 inches, the average annual air temperature is 52 to 54 degrees F, and the frost-free period is165 to 210 days. Permeability is moderate. Effective rooting depth is 60 inches or more. Available water capacity is 10 to 12 inches, and the water-supplying capacity is 20 to 26 inches. Runoff is slow, and the hazard of erosion is none to slight. This soil is one of the most productive in the county. All climatically adapted crops requiring good drainage do well. The major crops are wheat, barley, oats, field corn, orchards, grasses, and forage crops. In irrigated areas, sweet corn, strawberries, mint, hops, and pasture are the crops generally grown. This soil is in capability class I.

77A-Woodburn silt loam, 0 to 3 percent slopes. This moderately well drained soil is on broad terraces above the flood plain in the Willamette Valley. It formed in silty alluvial deposit. Slopes average about 2 percent. Elevation is 150 to300 feet. The average annual precipitation is 40 to 45 inches, the average annual air temperature is 52 to 54 degrees F, and the frost-free period is 165 to 210 days. Permeability is slow. Effective rooting depth is greater than60 inches. Available water capacity is 11 to 13 inches, and the water-supplying capacity is 20 to 26 inches. Runoff is slow, and the hazard of erosion is none to slight. A seasonal high water table is at a depth of 24 to 36 inches in winter and spring. This soil is well suited to pasture, hay, small grain, grass seed, and vegetable crops. Long-lived, deep--rooted deciduous fruit and nut trees, strawberries, caneberries, and alfalfa are adversely affected by the seasonal high water table unless the soil is drained. Properly managing crop residue and using a cropping system in which grasses and legumes or a grass and legume mixture are grown at least 25 percent of the time help to maintain fertility and workability. Small grains and grasses respond to nitrogen; row crops respond to nitrogen and phosphorus; and legumes respond to phosphorus, sulfur, and, in many places, to lime. If residues are used, additional nitrogen generally is needed to prevent a decrease in yields. This soil is in capability subclass IIw.


WHITE FARMS
EMERGENCY
APPLICATION AREA
NORTH
SCALE: 1 inch = 350 feet
CALL ODA PRIOR
TO ANY EMERGENCY
APPLICATION,
F6
4.64
HQ
10.69
F5
60.77
EMERGENCY
APPLICATION
AREAS
F4
3.05
F3
8.4
F2
3.22
F1
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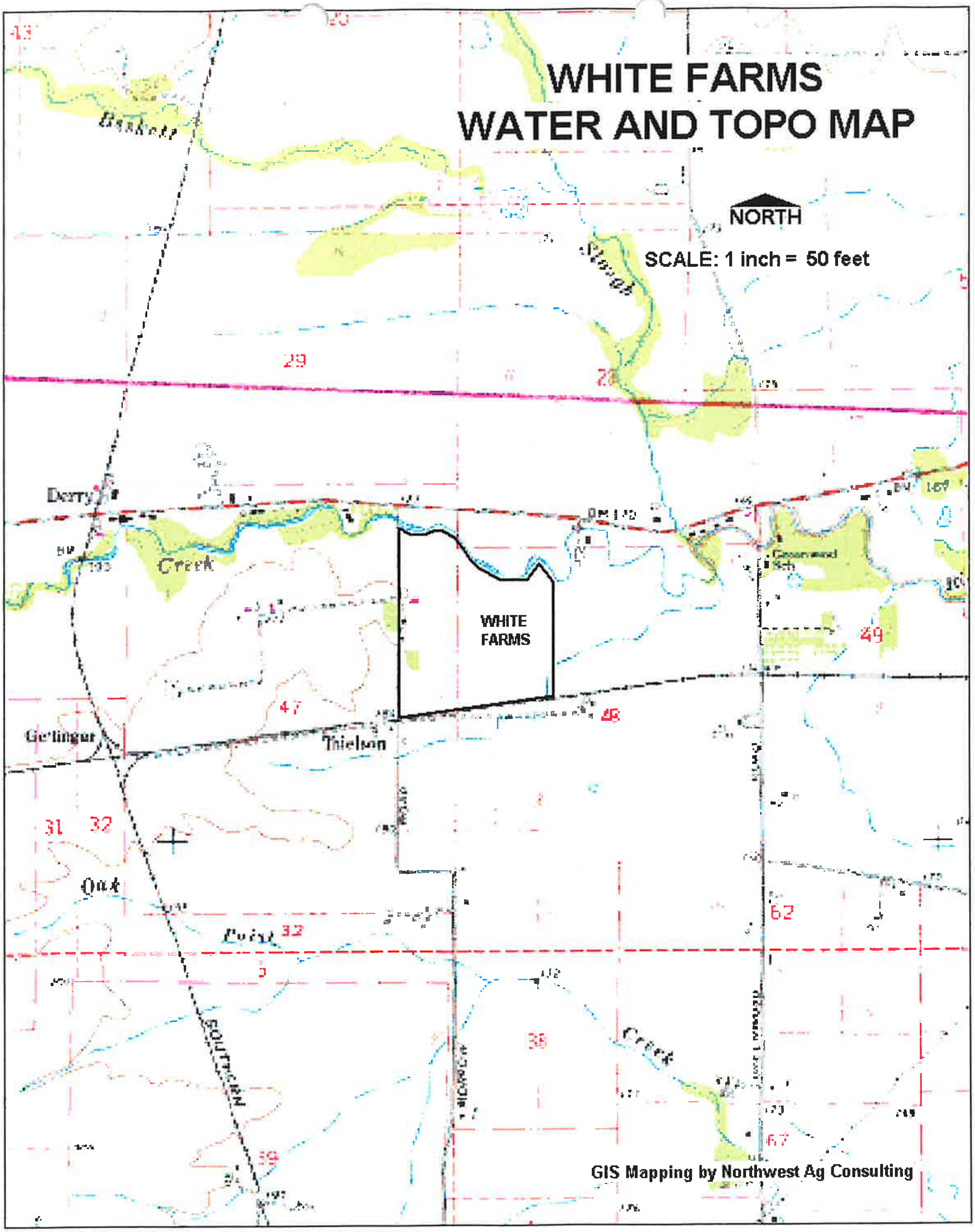
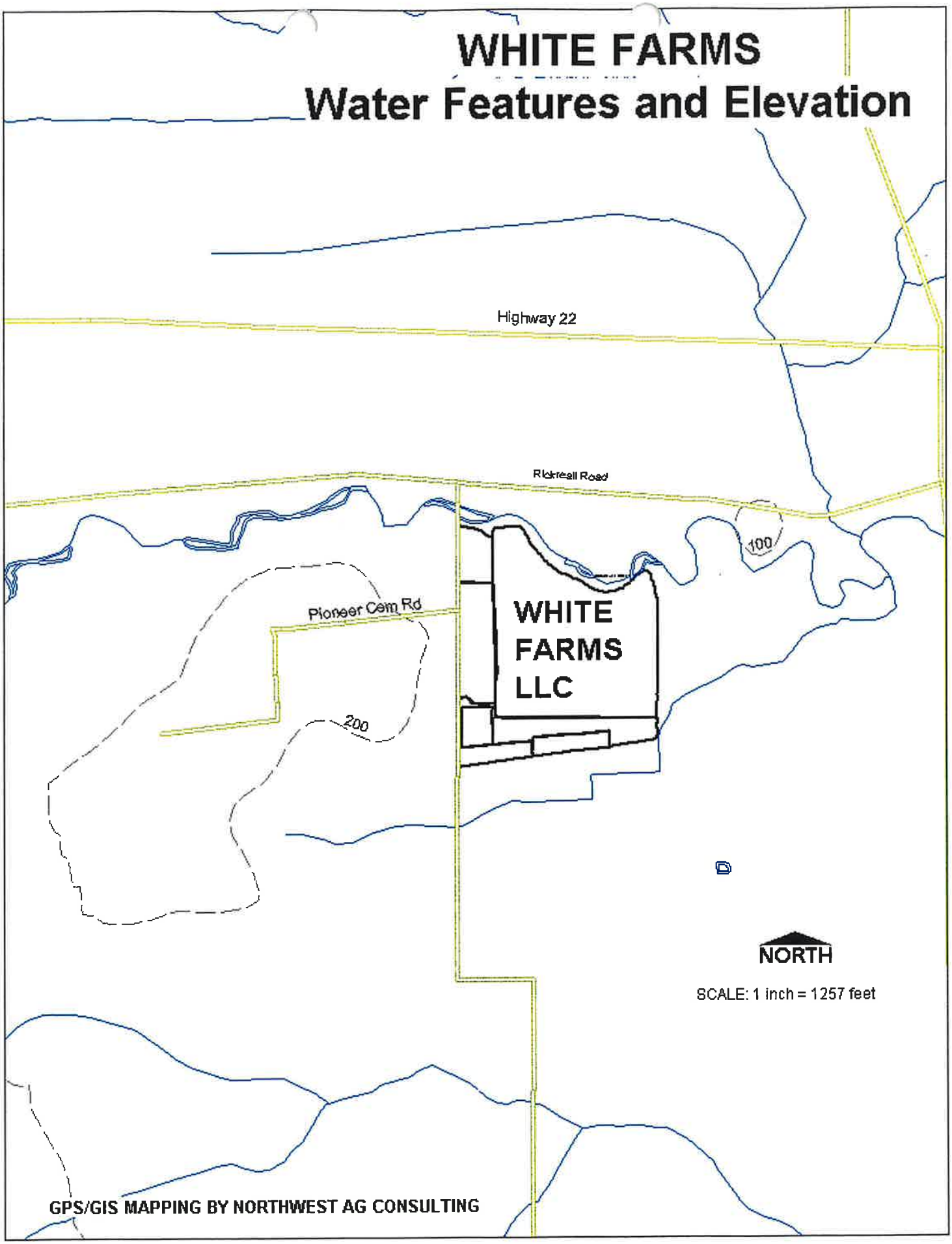
TRACT 435
T7S R4W S28,29,32,33 WM
GIS and GPS Mapping by Northwest Ag Consulting


WHITE FARMS
WATER AND TOPO MAP
NORTH
SCALE: 1 inch = 50 feet
WHITE FARMS
Derry
Creek
Slough
Thielson
Oak
Point
Creek
SOUTHERN
29
47
48
49
31
32
62
GIS Mapping by Northwest Ag Consulting

WHITE FARMS
Water Features and Elevation



GPS/GIS MAPPING BY NORTHWEST AG CONSULTING

Waste Storage Facility

Current Storage

Liquids
All manure is handled in a dry, solid form.

Solids
Type: Covered Dry Stack Facility
Volume: 24,000 cubic feet
Days: 160 according to ORAWM Version 3.0.

Manure Collection Methods

Beef cattle are housed in freestall barns, bedded with straw and sawdust. Manure is scraped from the barns to the covered dry stack manure facility .Any liquid seepage is collected inside the facility and soaked up by the bedding.

The silage pit is 40' x 60' with a 5' wall on the south side. Stacking height is approximately 15'. The pit is sloped to collect the silage juice in two, 600 gallon buried tanks. The juice is piped to a trough located within the animal housing. The silage is covered with plastic to reduce spoilage.

Manure Storage Facilities

Manure and bedding is stored in the 40' x 60' covered dry stack facility. The facility has 4' walls on three sides and a concrete floor. The stacking height is approximately 10'.

Manure Transfer

In the spring, solid manure is applied directly to crop land and incorporated, prior to planting corn. Manure may also be applied prior to planting the annual ryegrass silage crop and to pastures in the fall.

There is no conservation need for additional storage at this time.

U.S. Department of Agriculture
Natural Resources Conservation Service

ANIMAL WASTE MANAGEMENT WORKSHEET

Version HRv3.0

8/29/2006
STATE: OREGON

CLIENT: White Farms LLC
ASSISTED BY: Northwest Ag Consulting - Tom Thomson
CHECKED BY:

ANIMAL WASTE MANAGEMENT SYSTEM INVENTORY

ANIMAL INVENTORY

Type of Animal	Number of Animals	Average Weight (lbs.)	Animal Units (1,000 lb.)	Nutrient Production (lbs./day/1000 lb. Animal Unit) N	P	K	Nutrient Production (lbs./day) N	P	K	Manure CF/D/AU	Annual Days Confined	Annual Days Grazed
BEEF COW	60	1,200	72.0	0.35	0.08	0.25	25.20	5.76	18.00	1.67	274	92
CALVES (1-12 Months)	60	300	18.0	0.42	0.05	0.11	7.56	0.97	1.98	1.34	274	92
CALVES (1-12 Months)	40	500	20.0	0.42	0.05	0.11	8.40	1.08	2.20	1.34	274	92
FINISHING CATTLE	40	750	30.0	0.36	0.05	0.11	10.80	1.50	3.30	1.24	274	92
Totals/Averages-	200	688	140.0	0.37	0.07	0.18	52.0	9.3	25.5	1.5		

GRAZING PERIOD

Type of Animal	Percent of Month and Number of Animals Grazing OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	AU-YR.
BEEF COW	0%	0%	0%	0%	0%	0%	50%	50%	50%	50%	50%	50%	
	60	60	60	60	60	60	60	60	60	60	60	60	216
CALVES (1-12 Months)	0%	0%	0%	0%	0%	0%	50%	50%	50%	50%	50%	50%	
	60	60	60	60	60	60	60	60	60	60	60	60	54
CALVES (1-12 Months)	0%	0%	0%	0%	0%	0%	50%	50%	50%	50%	50%	50%	
	40	40	40	40	40	40	40	40	40	40	40	40	60
FINISHING CATTLE	0%	0%	0%	0%	0%	0%	50%	50%	50%	50%	50%	50%	
	40	40	40	40	40	40	40	40	40	40	40	40	90
													0
													0
													0
													0
													0
													0
Total AUM's Available>	0	0	0	0	0	0	0	0	0	0	0	0	0
Total AUM's Needed>>>	0	0	0	0	0	0	70	70	70	70	70	70	420
Total AUM's>>>>>>>>>>	0	0	0	0	0	0	-70	-70	-70	-70	-70	-70	-420

ANIMAL WASTE MANAGEMENT WORKSHEET

Version HRv3.0

8/29/2006
STATE: OREGON

CLIENT: White Farms LLC

ASSISTED BY: Northwest Ag Consulting - Tom Thomson CHECKED BY:

ANIMAL WASTE MANAGEMENT SYSTEM INVENTORY

WEATHER STATION

DALLAS 2 NE

Month	Precipitation	Evaporation	Paved	Unpaved
	25Yr-24Hr	5.50	Lot Runoff Factors as a Percent of Monthly Precipitation	
	Monthly Average in Inches			
October	3.25	1.53	50%	20%
November	7.64	0.66	55%	25%
December	8.63	0.57	55%	20%
January	7.59	0.68	57%	25%
February	6.26	0.90	50%	20%
March	5.27	1.23	45%	15%
April	3.21	2.01	40%	10%
May	2.23	3.11	37%	10%
June	1.41	4.01	37%	10%
July	0.50	5.20	30%	0%
August	0.67	4.76	35%	10%
September	1.44	3.22	45%	15%
Annual	48.1	27.88	[redacted]	

AREAS CONTRIBUTING RUNOFF TO LIQUID STORAGE FACILITY

Description of Runoff Area	Area in SF
Paved Lot Area >> Is paved lot scraped daily? (Y/N) NO	0
Unpaved Lot Area >>>	0
Roof Area >>>	0
Surface Area of Silage Storage Facility>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> Does Silage Seepage Drain to Storage Facility? (Y/N) NO	2,400
Total Runoff Area Contributing to Liquid Storage Facility>>>>>>>>>>>>>>>>	0

WATER USE THAT ENTERS LIQUID STORAGE FACILITY

Type of Water Use	Number of Animals	Number of Washes per Day	Gallons of Water Used per Wash-Day	Total Water Use per Day, Gallons	Total Water Use per Day, Cubic Feet
Animal Washwater	0.0	0	0.00	0	0.0
Equipment Wash	[redacted]	0	0.00	0	0.0
Flushwater		0	0.00	0	0.0
Miscellaneous		0	0.00	0	0.0
Total>>				0	0.0

CROP DATA

Field Number	Acres	Crop	Condition	Yield Units	Target Yield	Nutrients Removed in Pounds per Acre: Nitrogen N	Phosphorous P_2O_5	Potassium K_2O
F1-F4, F6	23.3	Hay/Pasture Mix 14% Protein	DHM	Ton	5.00	224	62	171
F5	60.8	Ryegrass Haylage	As Harvested	Ton	10.00	250	92	257
F5	60.8	Corn, Silage(AH)	As Harvested	Ton	27.00	208	108	248
Off-Farm								

U.S. Department of Agriculture
Natural Resources Conservation Service

ANIMAL WASTE MANAGEMENT WORKSHEET

Version HRv3.0

8/29/2006
STATE: OREGON

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ASSISTED BY: Northwest Ag Consulting - Tom Thomson   CHECKED BY:

ANIMAL WASTE MANAGEMENT SYSTEM INVENTORY

BEDDING VOLUME

Type of Animal	Type of Bedding Facility	Bedding Material	Unit Weight Lbs/CF	Amount Needed Lbs/Day/AU	Volume CF/Day/AU	Total Volume CF/Day	Total Weight Lbs/Day
BEEF COW	Free Stall	Sawdust	**12.00**	**1.95**	**0.16**	12	140
CALVES (1-12 Months)	Free Stall	Loose Straw	**2.50**	**2.80**	**1.12**	20	50
CALVES (1-12 Months)	Free Stall	Loose Straw	**2.50**	**2.80**	**1.12**	22	56
FINISHING CATTLE	Free Stall	Loose Straw	**2.50**	**2.80**	**1.12**	34	84

SOLIDS SEPARATION FACTOR

Type of Animal	Type of Separator	Separation Factor %	Volume of Solids Separated CF/Day	Volume of Solids in Liquids CF/Day	Volume of Manure in Liquids CF/Day	Volume of Manure in Solids CF/Day	Accumulated Sludge in Storage CF/Day	Density of Separated Solids Lbs/CF	Weight of Separated Solids Lbs/Day
BEEF COW	Dry Scrape System	**100%**	132	0	0	120	0	**36**	4,750
CALVES (1-12 Months)	Dry Scrape System	**100%**	44	0	0	24	0	**36**	1,594
CALVES (1-12 Months)	Dry Scrape System	**100%**	49	0	0	27	0	**36**	1,771
FINISHING CATTLE	Dry Scrape System	**100%**	71	0	0	37	0	**36**	2,546
Total Solids>>			296	0	0	208	0		10,661

U.S. Department of Agriculture
Natural Resources Conservation Service

CLIENT: **White Farms LLC**

ASSISTED BY: **Northwest Ag Consulting - Tom Thomson**

ANIMAL WASTE MANAGEMENT WORKSHEET

Version HRv3.0

CHECKED BY:

8/29/2006
STATE: OREGON

ANIMAL WASTE MANAGEMENT SYSTEM PRODUCTION

MONTHLY VOLUMES

Month	Runoff in Cubic Feet				Facility Water Use	Manure		Bedding		Solids Separated		Solids in Liquids		Total Solids	Total Liquids
	Roof Area Square Feet 0	Paved Slab Area Square Feet 0	Unpaved Lot Area Square Feet 0	Silage Pit Surface Area, SF 2,400	Cubic Feet	Solids Cubic Feet	Liquids Cubic Feet	Cubic Feet	Pounds	Cubic Feet	Pounds	Cubic Feet	Pounds	Cubic Feet	Cubic Feet
October	0	0	0	130	0	6,456	0	2,724	10,255	9,180	330,481	0	0	9,180	0
November	0	0	0	382	0	6,248	0	2,636	9,924	8,884	319,820	0	0	8,884	0
December	0	0	0	345	0	6,456	0	2,724	10,255	9,180	330,481	0	0	9,180	0
January	0	0	0	380	0	6,456	0	2,724	10,255	9,180	330,481	0	0	9,180	0
February	0	0	0	250	0	5,832	0	2,460	9,262	8,292	298,499	0	0	8,292	0
March	0	0	0	158	0	6,456	0	2,724	10,255	9,180	330,481	0	0	9,180	0
April	0	0	0	64	0	3,124	0	1,318	4,962	4,442	159,910	0	0	4,442	0
May	0	0	0	45	0	3,228	0	1,362	5,127	4,590	165,241	0	0	4,590	0
June	0	0	0	28	0	3,124	0	1,318	4,962	4,442	159,910	0	0	4,442	0
July	0	0	0	0	0	3,228	0	1,362	5,127	4,590	165,241	0	0	4,590	0
August	0	0	0	13	0	3,228	0	1,362	5,127	4,590	165,241	0	0	4,590	0
September	0	0	0	43	0	3,124	0	1,318	4,962	4,442	159,910	0	0	4,442	0
Annual	0	0	0	1,839	0	56,962	0	24,030	90,474	80,992	2,915,696	0	0	80,992	0

DAILY NUTRIENT PRODUCTION

Type of Animal	Pounds/Day of Nutrients from **LIQUIDS**			Pounds/Day of Nutrients from **SOLIDS**			Pounds/Day of Nutrients from **GRAZING**		
	N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O
BEEF COW	0.00	0.00	0.00	25.20	13.20	21.69	25.20	13.20	21.69
CALVES (1-12 Months)	0.00	0.00	0.00	7.56	2.23	2.39	7.56	2.23	2.39
CALVES (1-12 Months)	0.00	0.00	0.00	8.40	2.47	2.65	8.40	2.47	2.65
FINISHING CATTLE	0.00	0.00	0.00	10.80	3.44	3.98	10.80	3.44	3.98
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

ANIMAL WASTE MANAGEMENT SYSTEM PRODUCTION

MONTHLY NUTRIENT PRODUCTION

Month	Pounds of Nutrients from LIQUIDS			Pounds of Nutrients from SOLIDS			Pounds of Nutrients from GRAZING			Pounds of Nutrients going OFF-FARM			Total Pounds of Nutrients from ALL SOURCES		
	N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O
October	0	0	0	1,611	661	952	0	0	0	0	0	0	1,611	661	952
November	0	0	0	1,559	640	921	0	0	0	0	0	0	1,559	640	921
December	0	0	0	1,611	661	952	0	0	0	0	0	0	1,611	661	952
January	0	0	0	1,611	661	952	0	0	0	0	0	0	1,611	661	952
February	0	0	0	1,455	597	860	0	0	0	0	0	0	1,455	597	860
March	0	0	0	1,611	661	952	0	0	0	0	0	0	1,611	661	952
April	0	0	0	779	320	461	779	320	461	0	0	0	1,559	640	921
May	0	0	0	805	331	476	805	331	476	0	0	0	1,611	661	952
June	0	0	0	779	320	461	779	320	461	0	0	0	1,559	640	921
July	0	0	0	805	331	476	805	331	476	0	0	0	1,611	661	952
August	0	0	0	805	331	476	805	331	476	0	0	0	1,611	661	952
September	0	0	0	779	320	461	779	320	461	0	0	0	1,559	640	921
Annual	**0**	**0**	**0**	**14,211**	**5,835**	**8,397**	**4,754**	**1,952**	**2,809**	**0**	**0**	**0**	**18,965**	**7,787**	**11,207**

U.S. Department of Agriculture
Natural Resources Conservation Service

ANIMAL WASTE MANAGEMENT WORKSHEET

Version HRv3.0

8/29/2006
STATE: OREGON

CLIENT: White Farms LLC
ASSISTED BY: Northwest Ag Consulting - Tom Thomson
CHECKED BY:

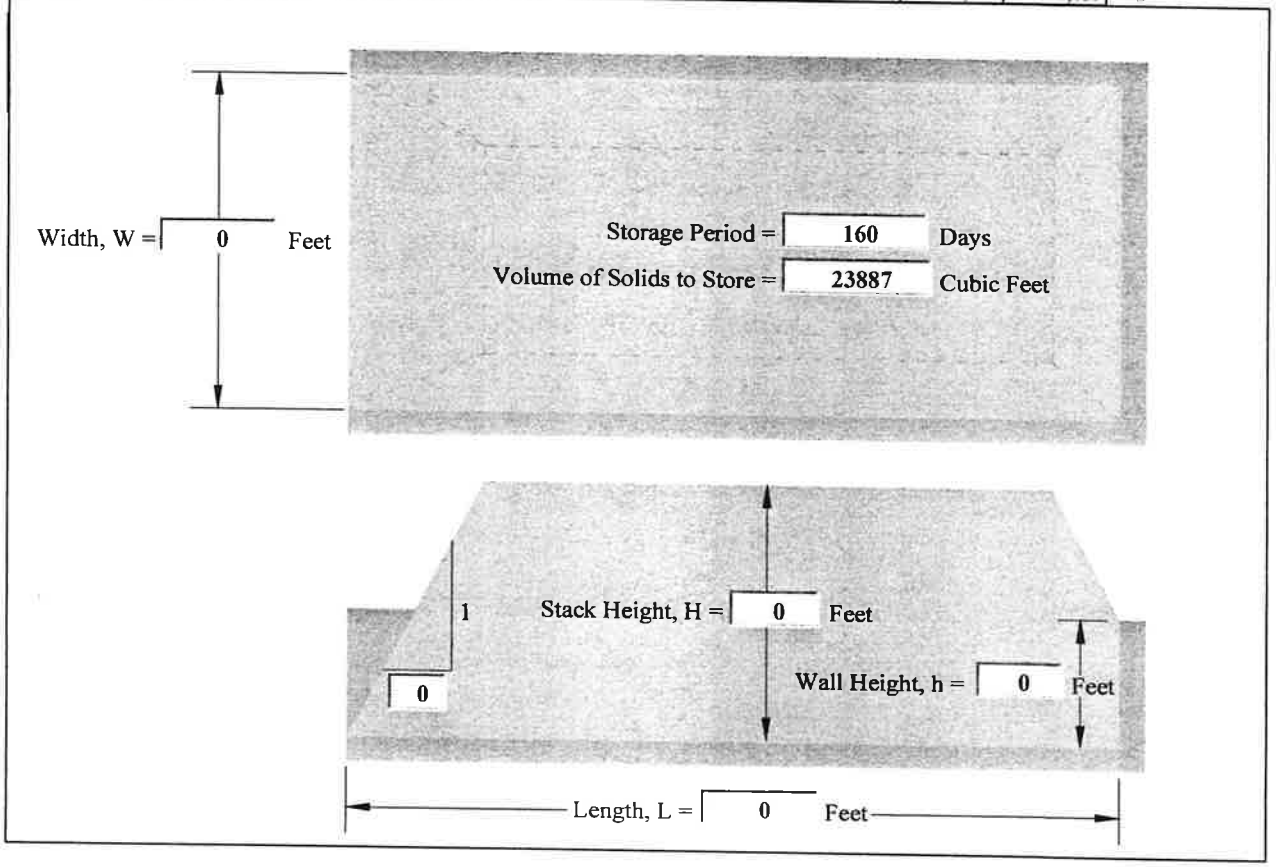
ANIMAL WASTE MANAGEMENT SYSTEM STORAGE

SOLIDS STACKING FACILITY

Solids Storage Facility Parameters	Value
Storage Period, Days=	160
Stacking Width, W in Feet=	0
Stacking Height, H in Feet=	0.00
Wall Height, h in Feet=	0.00
Stack Side Slope (X:1)=	0.00
Existing Storage, Cubic Feet=	24,000
Surface Area of Existing Storage, SF=	~~2,400~~
25 Year-24 Hour Storm Runoff, CF=	~~1,100~~
Volume Needed, Cubic Feet=	23,887
Design Volume, Cubic Feet=	0
Is Facility Covered?	YES

MONTHLY SOLIDS VOLUME STACKED IN FACILITY

Month	Number of Days	Manure CF	Bedding CF	Solids to Store CF	Normal Runoff CF
October	31	6456	2,724	4,590	130
November	30	6248	2,636	4,442	382
December	31	6456	2,724	4,590	345
January	31	6456	2,724	4,590	380
February	28	5832	2,460	4,146	250
March	31	6456	2,724	4,590	158
April	30	3124	1,318	2,221	64
May	31	3228	1,362	2,295	45
June	30	3124	1,318	2,221	28
July	31	3228	1,362	2,295	0
August	31	3228	1,362	2,295	13
September	30	3124	1,318	2,221	43
Annual	365	56,962	24,030	40,496	1,839



Surface Area of existing storage should be 0.

Since the surface area of existing storage is 0 the normal runoff (CF) is also 0.

ANIMAL WASTE MANAGEMENT WORKSHEET

Version HRv3.0

8/29/2006
STATE: OREGON

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ASSISTED BY: Northwest Ag Consulting - Tom Thomson

CHECKED BY:

ANIMAL WASTE MANAGEMENT SYSTEM APPLICATION

MANAGEMENT CRITERIA FOR TRACTOR SPREADER APPLICATION OF SOLIDS

To apply **80,992** cubic feet of solids generated from the operation it will take approximately **407** trips annually. Based on applying NITROGEN, N at agronomic rate use the application depths, travel lengths, and loads per acre listed below for each crop.

Field Number	Acres	Crop	Tractor Spreader Capacity		Spread Width	NITROGEN, N Concentration in Storage Facility		Pounds of Nutrients to be Applied	Number of Applications Needed to meet Crop Demand	Inches of Solids to Apply	Travel Length per Load Needed in Feet	Loads per Acre
			Bushels	CF	Feet	PPM	Lbs/100CF					
F1-F4, F6	23.31	Hay/Pasture Mix 14% Protein	**160**	**199**	**15**	**1,687**	**10.53**	**224**	1.00	1.0	152	19
F5	60.77	Ryegrass Haylage	**160**	**199**	**15**	**1,687**	**10.53**	**250**	1.00	1.2	136	21
F5	60.77	Corn, Silage(AH)	**160**	**199**	**15**	**1,687**	**10.53**	**208**	1.00	1.0	164	18
0												
0												
0												
0												
0												
0												

U.S. Department of Agriculture
Natural Resources Conservation Service

CLIENT: **White Farms LLC**
ASSISTED BY: **Northwest Ag Consulting - Tom Thomson**

ANIMAL WASTE MANAGEMENT WORKSHEET

Version HRv3.0

CHECKED BY:

8/29/2006
STATE: OREGON

ANIMAL WASTE MANAGEMENT SYSTEM UTILIZATION

NUTRIENTS AVAILABLE AFTER STORAGE

Nutrient Source	Type of Operation / Type of Storage Facility	Pounds of Nutrients Available			Percent Nutrients Retained After Storage			Pounds of Nutrients Retained After Storage		
		N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O
Liquids	Beef / Tank (Uncovered)	0	0	0	0%	0%	0%	0	0	0
Solids	Solids Storage Facility (Roofed)	14,211	5,835	8,397	60%	75%	65%	8,527	4,376	5,458
Grazing	NONE	4,754	1,952	2,809	100%	100%	100%	4,754	1,952	2,809

NUTRIENTS AVAILABLE AFTER APPLICATION

Nutrient Source	Type of Application System	Pounds of Nutrients Available			Percent Nutrients Retained After Application			Pounds of Nutrients Retained After Application		
		N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O
Liquids	Sprinkling	0	0	0	0%	0%	0%	0	0	0
Solids	Broadcast (Incorporated 7 or more days after application)	8,527	4,376	5,458	70%	100%	100%	5,969	4,376	5,458
Grazing	Grazing	4,754	1,952	2,809	75%	100%	100%	3,566	1,952	2,809

NUTRIENTS AVAILABLE AFTER DENITRIFICATION

Nutrient Source	Location / Soil Drainage Class	Pounds of Nutrients Available			Percent Nutrients Retained After Denitrification			Pounds of Nutrients Retained After Denitrification		
	Between Coastal and Cascade Mountains	N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O
Liquids	Somewhat Poorly Drained	0	0	0	0%	0%	0%	0	0	0
Solids	Somewhat Poorly Drained	5,969	4,376	5,458	80%	100%	100%	4,775	4,376	5,458
Grazing	Somewhat Poorly Drained	3,566	1,952	2,809	80%	100%	100%	2,853	1,952	2,809

ORAWM states somewhat poorly drained has 85% N retained after denitrification

PERCENT OF MANURE TO BE APPLIED TO FIELD AND UTILIZATION ACRES NEEDED BASED ON NITROGEN, N

Field Number	Acres	Crop	LIQUIDS Percent to be Applied	LIQUIDS Pounds of Nutrients to be Applied	LIQUIDS Acres Needed for Utilization of Nutrients	SOLIDS Percent to be Applied	SOLIDS Pounds of Nutrients to be Applied	SOLIDS Acres Needed for Utilization of Nutrients	GRAZING Percent to be Applied	GRAZING Pounds of Nutrients to be Applied	GRAZING Acres Needed for Utilization of Nutrients
F1-F4, F6	23.3	Hay/Pasture Mix 14% Protein	0%	0	0	10%	477	2	100%	2,853	13
F5	60.8	Ryegrass Haylage	0%	0	0	20%	955	4	0%	0	0
F5	60.8	Corn, Silage(AH)	0%	0	0	45%	2,149	10	0%	0	0
0											
0											
0											
0											
0											
0											
Off-Farm			100%	0		25%	1,194		0%	0	
		TOTALS-	100%	0	0	100%	4,775	16	100%	2,853	13

ANIMAL WASTE MANAGEMENT SYSTEM UTILIZATION

NUTRIENT BALANCE BASED ON AVAILABLE ACRES

Field Number	Acres	Crop	NUTRIENTS APPLIED - Nitrogen, N Lbs/Acre	NUTRIENTS APPLIED - Phosphorous, P_2O_5 Lbs/Acre	NUTRIENTS APPLIED - Potassium, K_2O Lbs/Acre	NUTRIENTS REMOVED - Nitrogen, N Lbs/Acre	NUTRIENTS REMOVED - Phosphorous, P_2O_5 Lbs/Acre	NUTRIENTS REMOVED - Potassium, K_2O Lbs/Acre	= NUTRIENT BALANCE - Nitrogen, N Lbs/Acre	NUTRIENT BALANCE - Phosphorous, P_2O_5 Lbs/Acre	NUTRIENT BALANCE - Potassium, K_2O Lbs/Acre
F1-F4, F6	23.3	Hay/Pasture Mix 14% Protein	143	103	144	224	62	171	-81 -59	41	-27
F5	60.8	Ryegrass Haylage	16	14	18	250	92	257	-234 -234	-77	-239
F5	60.8	Corn, Silage(AH)	35	32	40	208	108	248	-173 -171	-76	-208
0											
0											
0											
0											
0											
0											
Off-Farm											

With the change in N retention after denitrification, Nutrient balance is

NOTE - with the minor changes in ORAWM, it still balances (for N)

15 acres for grazing
17 acres for solid manure

FIELD SUMMARY & P INDEX

Grower:	White Farms LLC
Application Plan by:	Northwest Ag Consulting
Date:	August 17, 2006

Field	F1-F4. F6	F5
Acres	23.3 ~~6.5~~	60.77
Soil	Amity	Amity
Soil test date	October 2, 2003	October 2, 2003
Bray 1 P (ppm)	28	28
Acetate K (ppm)	175	175
pH	5.6	5.6
SMP	5.1	6.1
TRANSPORT FACTORS		
Sheet & rill erosion (tons/ac-yr)	<1	<1
Irrigation erosion (tons/ac-yr)	no irrig. runoff	no irrig. runoff
Runoff Class	medium	medium
Flooding Frequency	none	none
Distance to stream (ft)	100-199 ft	100-199 ft
Buffers	> 30 ft or NRCS spec.	> 30 ft or NRCS spec.
Drainage	no tiles	no tiles
SOURCE FACTORS		
Commercial P2O5 rate (lbs/ac)	0	149
Commercial P2O5 method	None applied	Incorp. in 5 days
Commercial P2O5 timing	None applied	No app. Sept. thru Jan.
Organic P2O5 rate (lbs/ac)	103	46
Organic P2O5 method	Not incorp. in 5 days	Not incorp. in 5 days
Organic P2O5 timing	No app. Nov. thru Jan.	No app. Nov. thru Jan.
SCORE	7.6	10.5
P RUNOFF RISK RATING	Low	Low

Waste Storage Operation and Maintenance (PS 313)

- Do not allow the operation of any equipment that exceeds the design limit on or within twenty feet of the structure.
- Maintain all pumps, agitators, piping, valves and all other electrical and mechanical equipment in good operating condition by following the manufacturer's recommendations.
- Maintain grounding rods and wiring for all electrical equipment in good condition.
- All fences, railings, and/or warning signs shall be maintained to provide warning and/or prevent unauthorized human or livestock entry.
- Immediately repair any vandalism, vehicular or livestock damage to the structure, earthen areas surrounding the structure, or any appurtenances.
- Maintain all lids, grated, and shields on openings to underground structures.
- Immediately remove all foreign debris within the structure that may cause damage to pumps, agitators or earthen structures.
- Periodically inspect spillways and control gates for proper functioning for their ability to maintain the water level to design elevations. Immediately remove any blockage or obstructions in spillways and maintain a minimum of 2 feet of freeboard from the top of the structure to the maximum water surface for earthen storage structures.
- Maintain vigorous growth of vegetative coverings on earthen structures. This includes reseeding, fertilization, and application of herbicides when necessary. Fertilize the established stand with at least 200 lbs of 21-0-0 per acre or equivalent annually or as needed to maintain a uniform vigorous stand. Periodic mowing may also be needed to control height.
- If fences are installed, maintain them to prevent unauthorized or livestock entry.
- Make sure all structure drains are functional and soil is not being transported through the drainage system. Maintain screens and/or rodent guards.
- Eradicate or otherwise remove all rodents or burrowing animals and repair any damage caused by their activity.
- Periodically inspect earthen embankments for longitudinal cracks or unusual settlement.
- Immediately empty storage facilities if damage to the structure may cause failure and immediately seek a qualified engineer to assess the situation. It is

important not to reduce the water level in earthen storage facilities by more than 1 foot per day when emptying the facility.

- For an earthen storage facility:
  - The soil liner must be protected against damage from agitators or other equipment activities that could reduce the soil liners effectiveness. The soil liner must also be protected from the erosive forces of filling operations as well.
  - Prevent animals from entering the waste holding pond and woody vegetation from becoming established to protect the soil liner from punctures.
  - Protect the soil liner from desiccation from drying by maintaining a layer of manure over the liner, disking or adding water.
- Do not allow human entry into any enclosed structure without safety equipment that includes ladders and breathing apparatus.

Emergency Response Plan

IN CASE OF A STORAGE FACILITY SPILL, LEAK, OR FAILURE

1. Stop all other activities to address the emergency.
2. Stop all flow into the storage facility.
3. If the storage facility is at maximum capacity or overtopping, draw the waste level in the facility down by making an application to the emergency application area shown on the plan map in accordance with the instructions in the Safety, Management, Operation and Maintenance section of this plan.
4. Assess the extent of the emergency and determine how much help is needed to correct the problem.
5. Call for help & excavator if needed.
6. If possible, use a skid loader or tractor with blade to contain or divert spill or leak away from environmentally sensitive areas.
7. If containment material is needed, excavate soil from appropriate areas away from the storage facility.
8. If possible, begin pumping manure and spreading in the prescribed fields at the prescribed application rates.
9. Complete the clean-up and repair the necessary components.

IN CASE OF A MANURE/WASTE DISCHARGE

1. Stop all other activities to deal with the emergency.
2. Call for help if needed.
3. Call sheriffs office if spilled on road for traffic control and clean the spill immediately from the road and roadside if needed.
4. Contain the spill or runoff from entering the stream or waterway using straw bales, sawdust, or soil material.
5. If flow is coming from a tile, plug the tile with a tile plug immediately.
6. Assess the extent of the emergency and determine how much help is needed.

CONTACTS TO BE MADE WITHIN 24 HOURS OF A DISCHARGE
(SEE NEXT PAGE FOR REQUIREMENTS FOR FILING A WRITTEN REPORT)

Oregon Department of Agriculture: 1-800-282-9378

Oregon Emergency Response System (ORES): 1-800-452-0311

Be prepared to provide the following information:

a. Your Name (See next page)
b. Farm Identification (See next page)
c. Description of emergency.
d. Estimate of the amounts, area covered, and distance traveled.
e. Has manure reached surface waters or major field drains?
f. Is there any obvious damage: employee injury, fish kill, or property damage?
g. What is currently in progress to contain situation?

EMERGENCY CONTACT INFORMATION

Farm Name	**White Farms LLC**
Address	550 Morrow Road, Independence, Oregon 97351
Farm Phone	(503) 838-3505
CAFO Permit #	143906
DIRECTIONS TO FARM	**From the traffic light in downtown Rickreall, turn east on Rickreall Road. Drive about 1 mile and turn right on Morrow Road. Drive south on Morrow Road about ¼ mile to White Farm on the left.**

Emergency Phone Numbers:	
Farm Owner	Claude White
Farm Manager	**Claude White**
FIRE or AMBULANCE	911
Equipment:	

IF A DISCHARGE OCCURS A WRITTEN REPORT IS TO BE MADE BY OWNER OR OPERATOR TO OREGON DEPARTMENT OF AGRICULTURE WITHIN 5 DAYS THAT CONTAINS THE FOLLOWING INFORMATION:

a. A description and cause of the discharge.
b. The period of discharge including exact dates, times and duration of discharge.
c. An estimate of discharge volume.
d. Name or location of receiving water.
e. Corrective steps taken, if appropriate, to reduce, eliminate or prevent reoccurrence of the discharge.

Manure Transfer Operation and Maintenance (PS 634)

Liquid Waste and Irrigation Pipelines

- Flush pipelines used for liquid waste application with clean water following waste application, or as need to prevent solid buildup/
- Drain the pipeline and components in areas that are subject to freezing. If parts of the pipeline cannot be drained, a non-toxic antifreeze solution may be added.
- Check to make sure all valves and air vents are set at the proper operating condition so they can provide protection to the pipeline.
- Inspect pipelines for signs of failure. Inspect risers and valves periodically for leaks or worn gaskets. Repair or replace pipeline, risers and valves as needed.
- Eradicate or otherwise remove all rodents or burrowing animals. Immediately repair any damage cause by their activity.

Pumps and agitators

- Operate and maintain pumps in accordance with good judgment and manufacturer's manuals and recommendations.
- Drain liquid manure from pumps during cold weather to prevent freezing. If parts of the system cannon be drained, a non-toxic antifreeze solution may be added.
- Inspect pumps periodically and remove debris wrapped around shafts and impellers. Maintain foot valves and check valves for proper operation.
- For proper operation of electric motors and controls, maintain lubrication for all bearings, keep electric panel free from obstructions and debris. Maintain electrical safety devices, assure all electrical contacts are tight, and lock electrical switch to the "OFF" position during the non-use season. Maintain adequate share and ventilation for pump motors.
- For proper operation of pumps, maintain lubrication for all bearings and pump shafts, assure belts are adjusted properly, maintain safety covering devices on open shafts and belt drives, check to make sure all safety devices are set at proper operating conditions so they provide protection to the pump and power unit. For centrifugal pumps, periodically measure tolerance between pump impeller and pump casing and replace wear ring as need to help restore new pump operating characteristics.

- Use portable pressure gauge (preferably a liquid filled gauge) to monitor pump performance.

- Operate and maintain agitators in accordance with the manufacturer's manual and recommendations. Inspect all plumbing at least annually.

- Replace, tighten or repair broken or loose connections and lines as needed.

Slabs and Curbs

- Periodically inspect concrete slabs and curbs, repair or replace broken sections as needed.

- Prevent manure from building up next to the curbs or flowing over them.

Roof Runoff Operation and Maintenance (PS 558)

All roofs are guttered with downspouts. The water from the downspouts collects in a main pipe that transports the water to a gravel filled sump, located to the northeast of the dry stack facility. The water percolates into the ground or into the nearby field.

The following operation and maintenance applies to buildings with gutters and downspouts:

- Periodically check gutters, downspouts and all above ground pipelines, trash guards, pumps, structures, and appurtenances for proper operation. Repair or replace if needed.
- Periodically remove debris from gutters, downspouts and outlet facilities.
- Protect downspouts from damage by livestock and equipment. Repair or replace damaged components as needed.
- Keep gutters, downspouts, pumps, conveyance pipelines and ditches and appurtenances in good operating condition with O & M performed as per site specific recommendations for each component.

United States Department of Agriculture

NRCS Natural Resources Conservation Service

Nutrient Management

Conservation Practice Jobsheet

590 OR-JS

Natural Resources Conservation Service, Oregon

August 2002

Client White Farms LLC

Date August 2006

Definition

Nutrient management is managing the amount, sources, placement, form and timing of application of nutrients and soil amendments.

Purpose

Nutrient management is applied as part of a conservation management system to efficiently use scarce nutrient resources to:

- Budget and supply nutrients for plant production
- Properly utilize manure or organic by-products as a plant nutrient source
- Minimize agricultural non-point source pollution of surface and ground water resources
- Maintain or improve the physical, chemical and biological condition of the soil

Where Used

Nutrient management is applicable to all lands where nutrients and soil amendments are applied.

Conservation Management Systems

Nutrient management may be a component of a conservation management system. It may be used in conjunction with Conservation Crop Rotation, Residue Management, Prescribed Grazing, conservation buffer practices and other practices needed on a site-specific basis to address natural resource concerns and the landowner" objectives.

Nutrient Management Planning

The nutrient management component of the conservation plan will contain the following information:

- field map and soil map
- crop rotation or sequence
- results of soil, water plant, and organic material sample analyses
- expected yield
- nutrient budget, including credits of nutrients available
- recommended nutrient rates, form timing and method of application
- location of designated sensitive areas
- guidelines for operation and maintenance

Nutrient management is most effective when used with other conservation practices such as cover crop, residue management, conservation buffers, pest management, and conservation crop rotation.

General Nutrient Management Considerations

Nutrient management needs to consider:

- Testing soil, plants, water and organic by-products for nutrient content
- Establishing realistic yield goals
- Applying nutrients according to soil test recommendations
- Account for nutrient credits from all nutrient sources such as previous legume crops or nutrients in irrigation water

- Drought or excess moisture and their impact on quantities of available nutrients
- Using a water budget or irrigation scheduling to guide timing of nutrient applications
- Utilizing cover and green manure crops where applicable to recover and retain nitrogen and other nutrients between cropping periods

Guidelines for Operation and Maintenance

Responsible and safe operation and maintenance for nutrient management includes:

- Annual review of the nutrient management component of the conservation plan with adjustments made when needed
- Calibration of application equipment to ensure uniform distribution and accurate application rates
- Clean up of residual materials from equipment and proper disposal
- Protection of nutrient storage areas from weather to minimize runoff and leakage
- Using protective clothing when necessary to avoid exposure to fertilizer and organic nutrient sources
- Observing established setback requirements for nutrient applications adjacent to water bodies, drainageways and other sensitive areas
- Maintenance of records of soil, plant, water and organic by-product tests and nutrient applications as required by state and local regulations

Specifications

Site-specific nutrient management requirements are listed on specification sheets. Specifications are prepared in accordance with the NRCS Field Office Technical Guide. See NRCS practice standard, Nutrient Management, code 590.

Nutrient Management Assessment

Developing the nutrient management component of the conservation plan will include making a site-specific environmental assessment of the potential risk of nutrient management. The boundary of the nutrient management assessment is the agricultural management zone (AMZ), which is defined as the edge of the field, bottom of root zone, and top of crop canopy. It is difficult to assess environmental risk beyond the AMZ.

Within an area as designated as having impaired or protected natural resources (soil, water, air, plants and animals) the nutrient management plan should include an assessment of the potential risk for nitrogen and phosphorus to contribute to water quality impairment.

The Nitrogen Index (NI) and Phosphorus Index (PI), erosion prediction models, water quality monitoring or any other acceptable assessment tools may be used to make risk assessments.

Assessment will also include evaluation of areas that might have high levels of nutrients, produced or applied, that may contribute to environmental degradation. This may include areas of high livestock concentrations, or large areas of high-intensity cropping like continuous potatoes, vegetable crops, or other specialty crops where heavy applications of nutrients may be contributing to surface and groundwater concerns.

Conservation practices and nutrient management techniques will be implemented with nutrient management to mitigate any unacceptable risks.

Photos courtesy of USDA, Natural Resources Conservation Service

NUTRIENT MANAGEMENT SPECIFICATION SHEET

Client White Farms LLC

Location 550 Morrow Road, Independence, OR 97351

County/SWCD Polk Farm/Tract No.

Prepared By NW Agricultural Consulting Date August 2006

DESIGN APPROVAL:

Practice Code NO.	PRACTICE	LEAD DISCIPLINE	CONTROLLING FACTOR	UNITS	JOB CLASS				
					I	II	III	IV	V
590	Nutrient Management	CED-EE & BCSD-Agron	Area	Acres	160	320	640	All	All

This practice is classified as Job Class I

Design Approved by:/s/_____ Date:_____

Job title:_____

CLIENTS ACKNOWLEDGEMENT STATEMENT:

The Client acknowledges that:

a. They have received a copy of the specification and understand the contents and requirements.

b. The following information must be provided to NRCS by the client before this practice can be certified as applied:
☒Nutrient management application records including soil, water plant and organic by-product test results.
☒Documentation showing amount, rate, form and application method of nutrients applied.
☒Annual review of nutrient management including adjustments made.

c. It shall be the responsibility of the client to obtain all necessary permits and/or rights, and to comply with all ordinances and laws pertaining to the application of this practice.

Accepted by:/s/_____ Date:_____

CERTIFICATION:

I have completed a review of the information provided by the client and certify this practice has been applied.

Certification by:/s/_____ Date:_____

Job title:_____

NUTRIENT MANAGEMENT DESIGN AND SPECIFICATIONS

Producer:	White Farms LLC	Tract(s):	Field(s): F1-F4, F6
Assisted by:	Northwest Ag Consulting - Tom Thomson		Date: August 29, 2006

PURPOSE (Check all that apply)			
Budget and supply for plant production	x	Utilize manure/organic materials as a nutrient source	x
Minimize agricultural non-point source pollution (water quality)	x	Maintain or improve soil condition	x

Table 1. Field Conditions and Recommendations

CROP SEQUENCE/ROTATION (circle current crop)	EXPECTED YIELD
Hay/Pasture Mix 14% Protein	5

CURRENT SOIL TEST LEVELS (ppm or lb/ac)					
N	P	K	pH	S.O.M.%	EC
NA	28	175	5.6		

RECOMMENDED NUTRIENTS/AMENDMENTS TO MEET EXPECTED YIELD								
N (lbs/ac)		P_2O_5 (lbs/ac)		K_2O (lbs/ac)		LIME	Other	Other
Trial A	Trial B	Trial A	Trial B	Trial A	Trial B			
224	0	62	0	171	0			

Table 2. Nutrient Sources

Credits		N		P_2O_5		K_2O	
		pounds per acre					
1. Nitrogen credits from previous legume crop							
2. Residual from long-term manure application							
3. Irrigation water							
4. Other (e.g., atmospheric deposition)							
5. Total Credits-		0		0		0	
Plant-Available Nutrients Applied to Field		N		P_2O_5		K_2O	
(Circle column that is landuser's decision)		Trial A	Trial B	Trial A	Trial B	Trial A	Trial B
6. Credits (from row 5, above)		0	0	0	0	0	0
7. Fertilizer	Starter						
	Other						
8. Manure / Organic Materials (Source-)	Beef	143	0	103	0	144	0
9.	Subtotal (sum of lines 6, 7 and 8)	143	0	103	0	144	0
10.	Nutrients Recommended (from Table 1)	224	0	62	0	171	0
11.	Nutrient Status (subtract line 10 from line 9)	-81	0	41	0	-27	0

If line 11 is a negative number, this is the amount of additional nutrients needed to meet the crop recommendation.
If line 11 is a positive number, this is the amount by which the available nutrients exceed the crop requirements.

PLANNED NUTRIENT APPLICATIONS						
Amount to be Applied (lb/ac)	N	143	P_2O_5	103	K_2O	144

Method, Form, and Timing of Application

Recommended application rates are taken from ORAWM V. 3.0. Additional commercial nitrogen fertilizer may be applied, after soil testing, to meet nutrient requirements. Manure should be reduced or not applied if soil tests show Phosphorous and Potassium concentrations increase over time and approach very high levels as determined by OSU Extension.

NUTRIEN[illegible]MANAGEMENT DESIGN AND SI[illegible]CIFICATIONS

Producer:	White Farms LLC	Tract(s):	Field(s): F5
Assisted by:	Northwest Ag Consulting - Tom Thomson	Date:	August 29, 2006

PURPOSE (Check all that apply)			
Budget and supply for plant production	x	Utilize manure/organic materials as a nutrient source	x
Minimize agricultural non-point source pollution (water quality)	x	Maintain or improve soil condition	x

Table 1. Field Conditions and Recommendations

CROP SEQUENCE/ROTATION (circle current crop)	EXPECTED YIELD
Ryegrass Haylage	10

CURRENT SOIL TEST LEVELS (ppm or lb/ac)					
N	P	K	pH	S.O.M.%	EC
NA	28	175	5.6		

RECOMMENDED NUTRIENTS/AMENDMENTS TO MEET EXPECTED YIELD								
N (lbs/ac)		P_2O_5 (lbs/ac)		K_2O (lbs/ac)		LIME	Other	Other
Trial A	Trial B	Trial A	Trial B	Trial A	Trial B			
250		92		257				

Table 2. Nutrient Sources

Credits		N		P_2O_5		K_2O	
		pounds per acre					
1. Nitrogen credits from previous legume crop							
2. Residual from long-term manure application							
3. Irrigation water							
4. Other (e.g., atmospheric deposition)							
5. Total Credits-		0		0		0	
Plant-Available Nutrients Applied to Field		N		P_2O_5		K_2O	
(Circle column that is landuser's decision)		Trial A	Trial B	Trial A	Trial B	Trial A	Trial B
6. Credits (from row 5, above)		0	0	0	0	0	0
7. Fertilizer	Starter						
	Other						
8. Manure / Organic Materials (Source-)	Beef	16		14		18	
9.	Subtotal (sum of lines 6, 7 and 8)	16	0	14	0	18	0
10.	Nutrients Recommended (from Table 1)	250	0	92	0	257	0
11.	Nutrient Status (subtract line 10 from line 9)	-234	0	-78	0	-239	0

If line 11 is a negative number, this is the amount of additional nutrients needed to meet the crop recommendation.
If line 11 is a positive number, this is the amount by which the available nutrients exceed the crop requirements.

PLANNED NUTRIENT APPLICATIONS						
Amount to be Applied (lb/ac)	N	16	P_2O_5	14	K_2O	18

Method, Form, and Timing of Application

Recommended application rates are taken from ORAWM V. 3.0. Additional commercial fertilizer will be applied, after soil testing, to meet nutrient requirements. Manure should be reduced or not applied if soil tests show Phosphorous and Potassium concentrations increase over time and approach very high levels as determined by OSU Extension.

NUTRIENT MANAGEMENT DESIGN AND SPECIFICATIONS

Producer:	White Farms LLC	Tract(s):	Field(s): F5
Assisted by:	Northwest Ag Consulting - Tom Thomson	Date:	August 29, 2006

PURPOSE (Check all that apply)			
Budget and supply for plant production	x	Utilize manure/organic materials as a nutrient source	x
Minimize agricultural non-point source pollution (water quality)	x	Maintain or improve soil condition	x

Table 1. Field Conditions and Recommendations

CROP SEQUENCE/ROTATION (circle current crop)	EXPECTED YIELD
Corn, Silage(AH)	27

CURRENT SOIL TEST LEVELS (ppm or lb/ac)

N	P	K	pH	S.O.M.%	EC
NA	28	175	5.6		

RECOMMENDED NUTRIENTS/AMENDMENTS TO MEET EXPECTED YIELD

N (lbs/ac)		P_2O_5 (lbs/ac)		K_2O (lbs/ac)		LIME	Other	Other
Trial A	Trial B	Trial A	Trial B	Trial A	Trial B			
208		108		248				

Table 2. Nutrient Sources

Credits		N		P_2O_5		K_2O	
		pounds per acre					
1. Nitrogen credits from previous legume crop							
2. Residual from long-term manure application							
3. Irrigation water							
4. Other (e.g., atmospheric deposition)							
5. Total Credits-		0		0		0	
Plant-Available Nutrients Applied to Field		N		P_2O_5		K_2O	
(Circle column that is landuser's decision)		Trial A	Trial B	Trial A	Trial B	Trial A	Trial B
6. Credits (from row 5, above)		0	0	0	0	0	0
7. Fertilizer	Starter Commercial	148		149		85	
	Other						
8. Manure / Organic Materials (Source-)	Beef	35		32		40	
9.	Subtotal (sum of lines 6, 7 and 8)	183	0	181	0	125	0
10.	Nutrients Recommended (from Table 1)	208	0	108	0	248	0
11.	Nutrient Status (subtract line 10 from line 9)	-25	0	73	0	-123	0

If line 11 is a negative number, this is the amount of additional nutrients needed to meet the crop recommendation.
If line 11 is a positive number, this is the amount by which the available nutrients exceed the crop requirements.

PLANNED NUTRIENT APPLICATIONS

Amount to be Applied (lb/ac)	N	183	P_2O_5	181	K_2O	125

Method, Form, and Timing of Application

Recommended application rates are taken from ORAWM V. 3.0. Additional commercial fertilizer will be applied, after soil testing, to meet nutrient requirements. Excess phosphorus applied to corn is utilized by the relay crop of annual ryegrass planted in the fall. Manure should be reduced or not applied if soil tests show Phosphorous and Potassium concentrations increase over time and approach very high levels as determined by OSU Extension.

Testing and Monitoring Protocols

Manure Testing

The main purpose of manure testing is to obtain reasonably accurate values for the nutrients that are contained in the manure which will allow application rates to be determined for various crops. Oregon State University (OSU) has fertilizer guides available for the commonly grown crops in the state. Manure tests are obtained from the irrigation system during application to determine the amount of nutrients applied to the crops. Samples are also taken of solid manure.

Liquid manure samples are obtained from the manure pond by throwing a bucket into the pond at a minimum of three sites and consolidating the material to obtain a sample for testing. Samples from the reception pit are obtained by dipping a bucket into the pit while it is being agitated. Other samples may also be obtained form the gun during irrigation. A subsample is placed in screw lid container and frozen prior to shipping unless shipment is to occur that day. At a minimum the samples will be tested for Total nitrogen (TKN), phosphorus (P), potassium (K) and moisture content (%). The test results will be kept at the office.

Solid manure and/or Compost samples will be obtained from a minimum of 10 locations around the solids pile and placed in a suitable, non-leaking and airtight enclosure such as a Ziploc type plastic bag. The samples will be placed in a freezer until shipment or shipped immediately to a laboratory for testing. At a minimum, the samples will be tested for Total nitrogen (TKN), phosphorus (P), potassium (K) and moisture content (%). The test results will be kept at the office.

Annually, after the test results have been obtained, the application sheets will be reviewed to ensure that the gross nutrient applications are within suggested guidelines.

If any manure is hauled off-farm, records will be kept of customer names and addresses for all manure and/or compost sold. Additionally, the customer will be given a data sheet showing the nutrient content of the manure and appropriate agronomic rates for the crop. The level of responsibility for application at proper agronomic rates rest with the customer.

Manure Nutrient Applications:
Manure application rates are derived from the records maintained at the dairy. Dates and rates are determined for each field from the records and used to determine the application rate for each field. Applications rates are determined by the dairy through the use of rain gauges placed in the field during applications. Each traveling gun sprinkler covers an area of approximately its wetted diameter (in feet) times the length of the hose pull divided by 43,560 which equal acres, although actual area is dependent upon the field shape, pump pressure, gun speed, and wind conditions at the time of application. Application volumes are determined by multiplying the number of inches of manure applied by 27,158 gal/acre-inch to get the number of gallons applied per acre.

Estimates of annual manure volumes applied to each field are calculated by multiplying the number of acres in the field and the number of application to that field by the application volume. The actual estimate of nutrients applied on a per acre basis is to be derived from the manure test values for each nutrient times the annual manure volume applied. After calculating for net application losses and denitrification losses, the percent of applied nutrients remaining are estimated at 60, 100, and 100%, for N, P, and K respectively; based upon the poorly drained soil types present on the dairy. These figures are consistent with similar estimates in ORAWM and USDA NRCS guidelines.

Soil Testing

The main purpose of soil testing is to determine the current nutrient status of the soil at the depth of the test. Fields will be sampled at least once every five years. As the soil is a dynamic system highly influenced by climatic conditions, cropping, and farming operations, it is important that adequate sites be sampled in the field to represent the true condition of the soil at the time of the test and , for comparison purposes, that the sampling occur at the same time each year. The OSU Bulletins below provide guidance for soil sampling and interpretation.

OSU BULLETINS

EC 628 - Soil Sampling for Home Gardens and Small Acreages outlines approved methods for obtaining soil samples which are representative of the area being tested and proper handling and shipping procedures.
EC 1478 Soil Test Interpretation Guide outlines interpretations and needs for various crops commonly grown in the state.
EM 8677 - A List of Analytical Laboratories Serving Oregon
EM8768 – Calculating Dairy Manure Nutrient Application Rates details protocols for calibrating manure application equipment.

Soils will be tested annually in the fall of each year after harvest. Soils will be sampled on a field basis with a minimum of 20 cores taken per field to a depth of 12 inches. The sample will be homogenized and placed into a suitable container for shipping. If shipping is not to occur the day of sampling, the sample will be frozen until shipment.

At a minimum, the sample will be tested for nitrate-nitrogen (NO_3-N), ammonium-nitrogen (NH_4-N), phosphorus (P), and potassium (K). The test results will be kept at the office.

Crop Nutrient Removal

Yield Data:
Crop yield data is to be obtained from the dairy for all crops grown. Crop yield information is to be based on scale weights from trucks as they come in from the field. If truck loading is consistent, a few random loads may be selected for weighing rather than weighing all loads. Data will be kept as to the number of loads and test weight for each field. Dry matter yields are calculated by multiplying the mean per acre yield value by the acreage and moisture percentage.

Crop Nutrient Uptake:
Crop nutrient removal rates are derived by multiplying the calculated DM yields by the appropriate nutrient concentration estimate for that crop. Nutrient removal by crops are derived from laboratory test results of the harvested crops. This method allows the nutrient mass balance to be calculated more precisely for the dairy rather than using values derived from national averages.

Nutrient Balance Estimates:
The overall nutrient balance is estimated by dividing the amount of nutrients applied by the amount of nutrients taken up by the crop. An estimate of performance is calculated as the in(de)crease in over application compared to last years status review on a pound per pound basis.

Manure Utilization

Manure resources are utilized on land owned by White Farms LLC, except for approximately 25% of the solid manure which is exported from the farm, each year. There are 84.1 acres available for manure applications. There are 23.3 acres of permanent pasture and 60.7 acres are double cropped with corn silage and ryegrass silage. Application of manure to fields will be based the on following key factors: 1) Manure will be applied to an actively growing plant, usually determined by active root growth or to cropland prior to planting; 2) Manure will not be applied when soil is saturated or frozen; 3) Applications will be made when there is no foreseeable precipitation in the next 48 hours. Depending on the actual weather conditions, in a given year, manure applications may begin as early as February when actively growing plants are seeking nutrients for uptake and last through October, supplying nutrients for fall re-growth.

All manure on the farm is handled in a solid form. Solid manure is hauled to crop land in the spring and fall, spread and incorporated with a disc. The farm does not produce enough nutrients in the form of manure to supply the crop's requirements. Commercial fertilizer is applied annually. Soil test results are used to accurately select the appropriate fertilizer blend.

In general, there will be no manure applications made during the months of November through January. Storage is available and these months have almost constant precipitation and cool temperatures. If necessary, solid applications during these months may be made in areas designated on the Emergency Application Area map.

Protocol for calibrating the manure application equipment is provided in Waste Utilization Worksheet (PS 633). This CNMP provides book value data using the ORAWM worksheet and on-farm data, which relays current manure utilization practices.

United States Department of Agriculture

NRCS Natural Resources Conservation Service

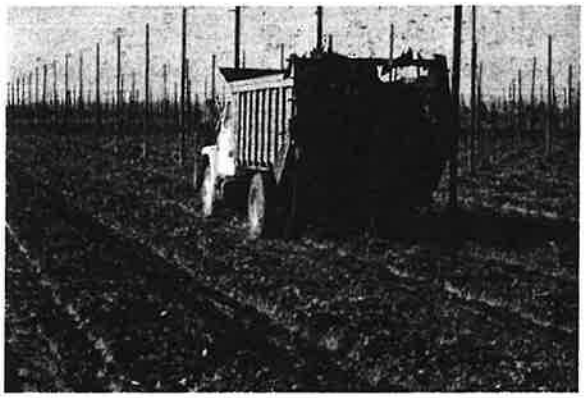
Waste Utilization

Conservation Practice Jobsheet

633 OR-JS

Natural Resources Conservation Service, Oregon February 2002

Client: White Farms LLC Date: August 2006



Definition

Waste Utilization is the beneficial use of agricultural wastes such as manure and wastewater or other organic residues.

Purpose

The ultimate purpose of waste utilization is to insure the proper use of agricultural wastes while protecting soil, water, air, plant, and animal resources. Agricultural wastes can be used to provide nutrients for crops, forage, and fiber production and forest products. Agricultural waste also can be used as an amendment to improve or maintain soil structure, provide feedstuff for livestock, or provide a source of energy. The focus of this job sheet will be the use of agricultural wastes to provide fertility for crops, forage, and fiber production and forest products; and to supply organic material to the soil.

Where used

Waste utilization is used where agricultural wastes (primarily animal manure and polluted runoff from livestock and poultry operations) are generated and collected as part of a resource management system. Wastes can be used as a source of fertility on cropland and pastureland, and occasionally on forest land or rangeland. Use of the Soil Condition Index (SCI) can be used to determine the effects of organic material on soil quality.

Conservation Management Systems

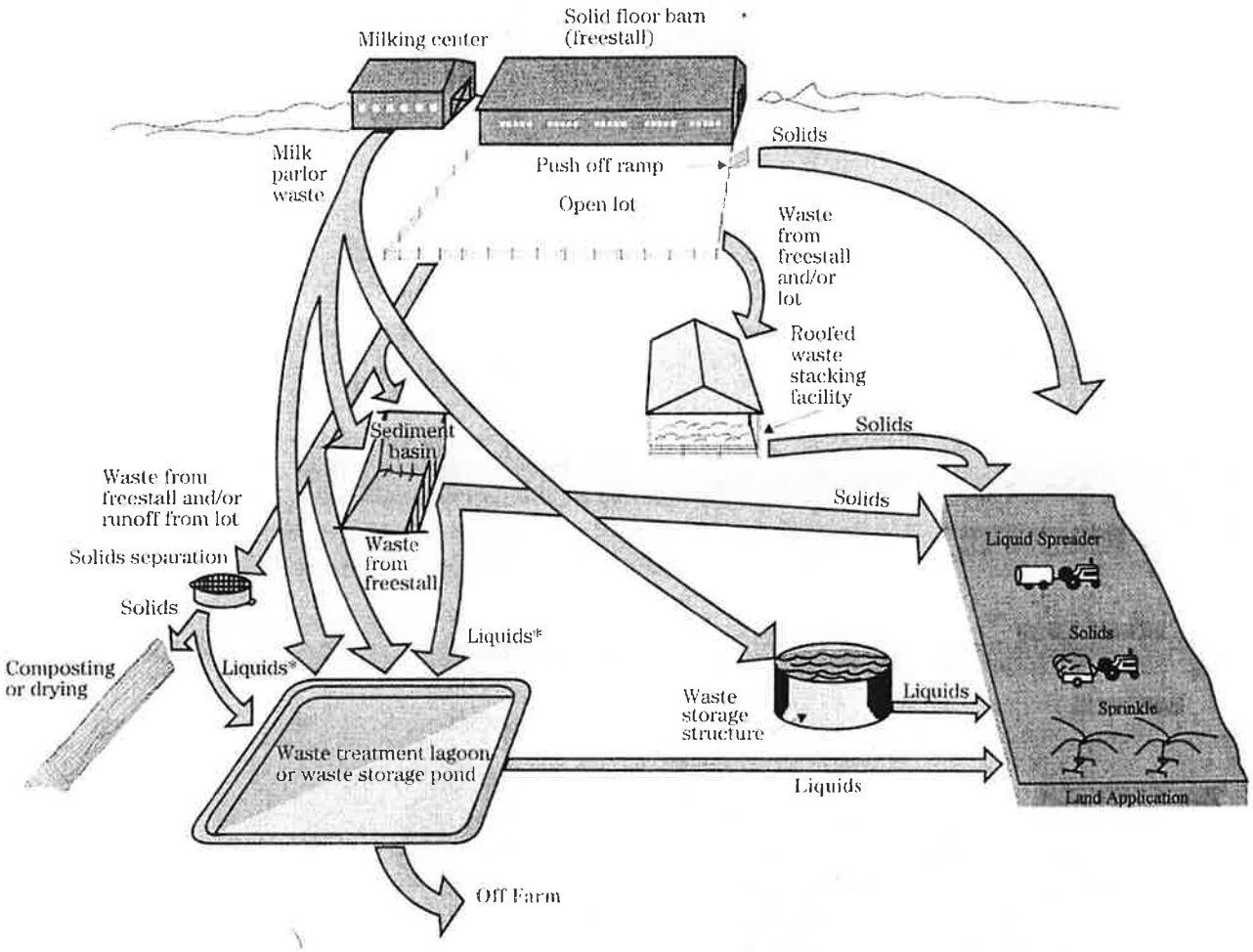
Waste utilization is generally one of several components of a resource management system used to manage manure and polluted water from livestock and poultry operations. Where the wastes are used to supply the fertility needs of crop and pasture, waste utilization is done as part of an overall resource management plan for the enterprise.

Waste Utilization Planning

Waste utilization components of the conservation plan will contain the following information:

- field map and soil map
- crop rotation or sequence
- results of soil, water, plant, and organic material samples analyses
- expected yield
- sources of nutrients to be applied
- nutrient budget, including credits of nutrients available
- recommended nutrient rates, form, timing, and method of application
- location of designated sensitive areas
- guidelines for operation and maintenance

Waste utilization is most effective when used with other conservation practices such as cover crop, residue management, conservation buffers, irrigation water management, nutrient management, pest management, and conservation crop rotation.



* Liquids from lot runoff discharged to waste storage pond only

Schematic of a Resource Management System for a Dairy

Operation and maintenance

Operation and maintenance activities shall include record keeping for 5 years or longer that includes the following:

- Quantity of manure and other agricultural wastes produced, and their nutrient content.
- Soil test results.
- Dates and rates of waste application where land applied, and the dates and amounts of waste removed from the system due to feeding, energy production, or export from the operation.
- Waste application methods.
- Crops grown and yields (both yield goals and measured yield).
- Other tests as needed, such as determining the nutrient content of the harvested product.
- Calibration of the application equipment.
- Changes in soil condition(SCI).
- Plan map showing fields where waste is applied.

Specifications

Site specific requirements for waste utilization are listed on specification sheets. Specifications are prepared in accordance with the NRCS Field Office Technical Guide. See NRCS practice standard, Waste Utilization, code 633. Use NRCS's Agricultural Waste Management Field Handbook or locally accepted references for procedures to calculate values such as residual nitrogen from past waste applications, and to estimate available nutrients in wastes where lab analyses are not available.

Natural Resources Conservation Service, Oregon February 2002

WASTE UTILIZATION SPECIFICATION SHEET

Client White Farms LLC

Location: 550 Morrow Road, Independence, OR 97351, Polk County

Prepared By Northwest Agricultural Consulting Date August 2006

Perform the following operations:
❑ Have your technical assistance provider review the resource management system plan for your operation at least once every 5 years.
❑ Maintain records for all waste applications.
❑ Calibrate application equipment to apply wastes in accordance with the recommended amount and timing specified on the nutrient budget specification sheet, NRCS practice code 590, for the crop being grown.
❑ Chemical analysis of soils, plant tissue and waste should be used annually to monitor and adjust amounts of waste applied. Refer to Oregon State University Extension Service publication EC1478, "Soil Test Interpretation Guide" for guidance in getting soil tested and interpreting soil test results. Refer to Oregon State University Extension publication EM8585, "Manure Application Rates for Forage Production" and EM8768, "Calculating Dairy Manure Nutrient Application Rates" for guidance in getting animal waste tested for nutrient concentrations and computing application rates.
❑ Apply waste in a manner that will cover no more than 25 percent of the leaf surface with solids unless clean water applications are planned immediately after wastes are applied. For pasture/hayland it is best to apply waste 7 days after harvesting forage by haying or grazing.
❑ To reduce odor problems, apply waste in mid morning when temperatures are warming and air is rising rather than in the afternoon or evening when air is cooling and settling. Avoid applications during periods of fog.
❑ Do not apply waste directly into an open watercourse or where waste is likely to enter an open watercourse. Observe all waste application setbacks identified in the resource management system plan.
❑ Do not apply waste to fields where there is no growing crop. If applications are needed during fall and winter periods due to unforeseen circumstances, such as the storage facilities being full, use the following guidelines for waste applications: a) Only spread waste on fields that are growing a crop, preferably grass. b) Increase all waste application setbacks identified in the resource management system plan by at least 15 feet. c) Don't apply waste during any rainfall event that will cause runoff. d) Use maximum travel rates for the traveling big gun sprinkler and solids spreader. e) Use soil tests, such as the Pre-sidedress Soil Nitrate test, to determine if additional applications of waste are needed on those fields receiving emergency winter applications.
❑ Do not apply waste to fields with frozen or snow covered soil conditions unless provisions are made to control runoff.
❑ Do not spread waste on fields where soils are saturated, ponded, flooded and/or during times when waste is likely to runoff into open watercourses.
❑ Be aware of the location of sensitive areas, concerns of neighbors or concerns of the public which require special application procedures
❑ Handle all waste material with caution. Wear appropriate protective clothing.
❑ Clean up residual materials from equipment and dispose of properly.
❑ Equipment used in waste utilization should be regularly inspected and maintained as needed in accordance with equipment operation and maintenance guidelines from the manufacturer or provided by NRCS.
Additional Guidance and Notes: Any manure discharge into an pen water course will be reported to Oregon Department of Agriculture (ODA) within 24 hours. Within 5 days a written statement describing the manure discharge will be submitted to ODA. Annual CAFO permit reports will be submitted on time to ODA.

633 OR-Specification

Natural Resources Conservation Service, Oregon February 2002

WASTE UTILIZATION SPECIFICATION SHEET

DESIGN APPROVAL:

Practice Code NO.	PRACTICE	LEAD DISCIPLINE	CONTROLLING FACTOR	UNITS	JOB CLASS				
					I	II	III	IV	V
633	Waste Utilization	BCSD-Agron & CED-EE	Area	Acres	20	40	80	180	All

This practice is classified as Job Class _____

Design Approved by:/s/_____ Date:_____

Job title:_____

CLIENTS ACKNOWLEDGEMENT STATEMENT:

The Client acknowledges that:

a. They have received a copy of the specification and understand the contents and requirements.

b. The following information must be provided to NRCS by the client before this practice can be certified as applied:
   - ❑ Waste application records which include the date, crop, type of waste applied, and amount of waste applied.
   - ❑ Calibration records for waste application equipment.
   - ❑ Analysis of nutrient concentrations in solid and liquid wastes.

c. It shall be the responsibility of the client to obtain all necessary permits and/or rights, and to comply with all ordinances and laws pertaining to the application of this practice.

Accepted by:/s/_____ Date:_____

CERTIFICATION:

I have completed a review of the information provided by the client and certify this practice has been applied.

Certification by:/s/_____ Date:_____

Job title:_____

Natural Resources Conservation Service, Oregon

WASTE UTILIZATION WORKSHEET

Spreader Equipment Calibration

(Using Bucket, Pan or Tarp)

Name: White Farms LLC Date: _____

Operator: _____ Spreader ID: _____

Perform the following operations to calibrate the solids spreader equipment:

- ✓ Place buckets, pans, or tarps in the application area to collect the applied or spread waste material.
- ✓ Spread waste material over the application area using the spreading pattern normally used in the field. Make sure the spreader is traveling at the speed it typically travels over the collection area. Record engine rpm and gear settings used.
- ✓ Collect and weigh the waste material and calculate the average application rate. Use this worksheet to record the weights and calculations.

Note: Use Tarps instead of buckets or pans when using dry stack manure or separated solids as the variability in the weight will be less.

Data and Calculations:

Steps	ID of Bucket, Pan or Tarp					
	A	B	C	D	E	F
1. Date of calibration test-						
2. Engine RPM during spreading -						
3. Gear selected during spreading -						
4. Weight of empty bucket (lb) =						
5. Weight of bucket with waste (lb) =						
6. Weight of Waste (lb) - line 5 – line 4 =						
7. Collection Area (sq ft) - Area of the top of the bucket, pan or tarp used to collect the waste =						
8. Waste Applied (lb/sq ft) - line 6 ÷ line 7 =						
9. Covert to tons per acre - line 8 x 21.78 =						
10. Average Application Rate (tons per acre)- Sum of values in cells A9 through F9 divided by the total number of calibrations completed =						

Additional Notes:

633 OR-Specification

Natural Resources Conservation Service, Oregon — February 2002

WASTE UTILIZATION WORKSHEET

Spreader Equipment Calibration

(Using a Full Spreader Load)

Name: White Farms LLC Date: _____

Operator: _____ Spreader ID: _____

Perform the following operations to calibrate the solids spreader equipment:

- ✓ Determine the weight of the waste material loaded in the spreader by using truck scales to weigh the spreader equipment when it is empty and full.
- ✓ Spread the loaded spreader on the field using consistent speed and spreader settings to cover the field uniformly. Spread in a rectangular pattern so the area calculation will be simple. Record engine rpm and gear settings used.
- ✓ Measure the length and width covered by the full load and compute the application rate in tons per acre using this worksheet.

Data and Calculations:

Steps	ID of Calibration Test					
	A	B	C	D	E	F
1. Date of calibration test-						
2. Engine RPM during spreading -						
3. Gear selected during spreading -						
4. Weight of empty spreader (lb) =						
5. Weight of loaded spreader (lb) =						
6. Weight of Waste in spreader (lb) - line 5 – line 4 =						
7. Length of spreading area (ft) =						
8. Width of spreading area (ft) =						
9. Area spread (sq ft) - line 7 x line 8 =						
10. Waste applied (lb/sq ft) – line 6 ÷ line 9=						
11. Convert to tons per acre - Line 10 x 21.78=						
12. Average Application Rate (tons per acre) – Sum of values in cells A11 through F11 divided by the total number of calibrations completed =						

Additional Notes:

Natural Resources Conservation Service, Oregon

WASTE UTILIZATION WORKSHEET

Tank Equipment Calibration

(Using a Full Tank Load)

Name: White Farms LLC Date: _____

Operator: _____ Spreader ID: _____

Perform the following operations to calibrate the tank equipment:

- ✓ Determine the maximum capacity of the tank equipment from the manufacturer's maintenance manual or the owners manual for the equipment.
- ✓ Fill the tank and reduce the volume of the tank by the appropriate amount if the tank is not filled to its maximum capacity. Normally a tank spreader is only filled to about 80 percent of its maximum capacity and therefore the maximum rated capacity of the tank should be multiplied by 0.8 to reflect the volume of the loaded tank during the calibration exercise.
- ✓ Spread the loaded tank on the field using consistent speed and settings to cover the field uniformly. Try to spread in a rectangular pattern so the area calculation will be simple. Record engine rpm and gear settings used.

Data and Calculations:

Steps	ID of Calibration Test					
	A	B	C	D	E	F
1. Date of calibration test-						
2. Engine RPM during spreading-						
3. Gear selected during spreading-						
4. Maximum rated capacity of tank (gallons) =						
5. Volume of filled tank (gallons)- Line 4 x ____ % of tank filled ÷ 100% =						
6. Length of spreading area (ft) =						
7. Width of spreading area (ft) =						
8. Area spread (sq ft)- line 6 x line 7 =						
9. Waste applied (gal/sq ft)- line 5 ÷ line 8 =						
10. Convert to gallons per acre - Line 9 x 43,560 =						
11. Average Application Rate (gallons per acre) – Sum of values in cells A10 through F10 divided by the total number of calibrations completed =						

Additional Notes:

633 OR-Specification

Natural Resources Conservation Service, Oregon — February 2002

WASTE UTILIZATION WORKSHEET

Traveling Big Gun Sprinkler Calibration

(Using Catch Cans)

Name: White Farms LLC Date: _____

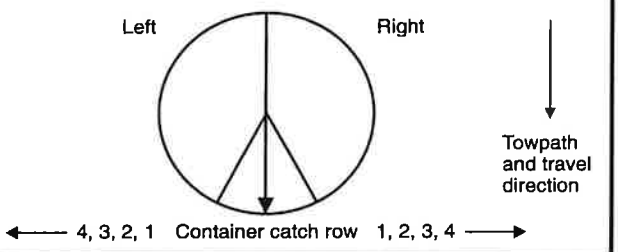
Perform the following operations to calibrate the traveling big gun sprinkler:

- ✓ Use 5 to 10 catch cans to collect the sprinkler-irrigated waste. Use straight-sided buckets for catch cans. Two pound coffee cans work well. Make sure all of the catch cans have the same diameter.
- ✓ Place one of the catch cans on a level surface and fill it with water to a known depth (1-3 inches). Pour the water from the catch can into a large measuring cup. Determine how many measuring cups of water are equal to an inch of water in the catch can.
- ✓ Place at least five catch cans across the towpath of the big gun sprinkler. Try to space the catch cans uniformly from the center of the towpath to the outer edge of the wetted area of the sprinkler. Stake the catch can in place or put a rock in the bottom of the catch can to keep it upright. Allow the traveling big gun sprinkler to completely pass over the catch cans. Use the measuring cup previously used to calibrate the catch cans to measure the amount of liquid collected in each can and convert the volume to inches. Be sure to add together the amount measured from the catch cans that would receive overlap from the adjacent towpath. For example, if catch can #4 will receive liquids from the adjacent towpaths, add the amount from container #4 on the left to container #4 on the right side to compute the total amount applied at the location of container #4 on the right and left sides of the towpath.

Catch Can Calibration:

Example: 1 inch = 5 Cups
1 cup = 0.2 Inches

Your Catch Cans: 1 inch = _____ Cups
1 cup = _____ Inches



Travel Rate Setting During Test:

Data and Calculations:

Catch Can ID	Volume of Liquid							
	Cups	Inches	Cups	Inches	Cups	Inches	Cups	Inches
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
Average =								

WASTE UTILIZATION WORKSHEET

Nitrogen Based Waste Application

Name: White Farms LLC Date: _____

Example:

Corn silage is being grown and the recommended nutrient application from the nutrient budget worksheet is 200 pounds of nitrogen(N) per acre. A traveling big gun sprinkler will be used to make 1 application of liquids from a non-agitated waste storage pond and a tractor spreader will be used to make 1 application of solids from a dry stacking facility that will not be incorporated into the field.

Waste application rates and amounts:

Steps	Example		Your Calculations			
	Liquid	Solids	Liquid	Solids	Liquid	Solids
1. Type of waste-	Dairy	Dairy				
2. Crop receiving waste-	Corn Silage	Corn Silage				
3. Desired nitrogen application rate, lb/acre-	100	100				
4. Nutrient concentrations in storage from laboratory analysis or from Table 1-1: **Nitrogen (N)-**	lb/1000 gal 4	lb/ton 9	lb/1000 gal	lb/ton	lb/1000 gal	lb/ton
Phosphorus (P_2O_5)-	1	4				
Potassium (K_2O)-	6	19				
5. Plant availability of nitrogen from Table 1-1 in percent-	100 %	100 %	%	%	%	%
6. Nitrogen retained, in percent, after application from Table 1-2-	75 %	70 %	%	%	%	%
7. Calculate nitrogen availability- line 4 N x line 5 x line 6 ÷ 10,000=	lb/1000 gal 3	lb/ton 6.3	lb/1000 gal	lb/ton	lb/1000 gal	lb/ton
8. Determine nitrogen application rate from the nutrient application charts: **Nitrogen (N)-**	inches/acre 1.75	tons/acre 17	inches/acre	tons/acre	inches/acre	tons/acre
9. Determine the amount of phosphorus and potassium applied from nutrient concentration data on line 4 and nutrient application charts: **Phosphorus (P_2O_5)-**	lb/acre 50	lb/acre 70	lb/acre	lb/acre	lb/acre	lb/acre
Potassium (K_2O)-	250	300				
10. Total Nutrients Applied, lb/acre: **Nitrogen (N)-** (Sum of liquids and solids from line 3)	200 lb/acre		lb/acre		lb/acre	
Phosphorus (P_2O_5)- (Sum of liquids and solids from line 9)	120 lb/acre		lb/acre		lb/acre	
Potassium (K_2O)- (Sum of liquids and solids from line 9)	550 lb/acre		lb/acre		lb/acre	

633 OR-Specification

Natural Resources Conservation Service, Oregon — February 2002

WASTE UTILIZATION WORKSHEET

Phosphorus Based Waste Application

Name: White Farms LLC Date: _____

Example:

Corn silage is being grown and the recommended nutrient application from the nutrient budget worksheet is 100 pounds of phosphorus(P_2O_5) per acre. A traveling big gun sprinkler will be used to make 1 application of liquids from a non-agitated waste storage pond and a tractor spreader will be used to make 1 application of solids from a dry stacking facility that will not be incorporated into the field.

Waste application rates and amounts:

Steps	Example		Your Calculations			
	Liquid	Solids	Liquid	Solids	Liquid	Solids
1. Type of waste-	Dairy	Dairy				
2. Crop receiving waste-	Corn	Corn				
3. Desired phosphorus application rate, lb/acre-	50	50				
4. Nutrient concentrations in storage from laboratory analysis or from Table 1-1: **Nitrogen (N)-**	lb/1000 gal 4	lb/ton 9	lb/1000 gal	lb/ton	lb/1000 gal	lb/ton
Phosphorus (P_2O_5)-	1	4				
Potassium (K_2O)-	6	19				
5. Determine phosphorus application rate from the nutrient application charts: **Phosphorus (P_2O_5)-**	Inches/acre 1.0	tons/acre 14	inches/acre	tons/acre	inches/acre	tons/acre
6. Plant availability of nitrogen from Table 1-1 in percent-	100 %	100 %	%	%	%	%
7. Nitrogen retained, in percent, after application from Table 1-2-	75 %	70 %	%	%	%	%
8. Calculate nitrogen availability- line 4 N x line 6 x line 7 ÷ 10,000=	lb/1000 gal 3	lb/ton 6.3	lb/1000 gal	lb/ton	lb/1000 gal	lb/ton
9. Determine the amount of nitrogen and potassium applied from nutrient concentration data on line 8, line 4 and the nutrient application charts: **Nitrogen (N)-**	lb/acre 75	lb/acre 75	lb/acre	lb/acre	lb/acre	lb/acre
Potassium (K_2O)-	150	250				
10. Total Nutrients Applied, lb/acre: **Nitrogen (N)-** (Sum of liquids and solids from line 9)	150 lb/acre		lb/acre		lb/acre	
Phosphorus (P_2O_5)- (Sum of liquids and solids from line 3)	100 lb/acre		lb/acre		lb/acre	
Potassium (K_2O)- (Sum of liquids and solids from line 9)	400 lb/acre		lb/acre		lb/acre	

WASTE UTILIZATION WORKSHEET

Table 1-1
Typical Manure Nutrient Concentrations for Different Handling Systems

The table below shows typical values of the nutrient content of manure from different animal waste handling systems. You can use them as a rough estimate of the nutrient content of your manure. Because manure nutrient content varies widely among farms and even over time on the same farm, it is recommended to test your manure to get realistic nutrient content numbers for your farm. Refer to Oregon State University Extension Publication PNW 505, "Which test is best?" for more information on manure testing.

Typical nutrient content, solids content, density, and nitrogen availability of animal manure at the time of application:

Solids from:	Nitrogen N (lb/Ton)[2]	Phosphorus P_2O_5 (lb/Ton)[2]	Potassium K_2O (lb/Ton)[2]	Solids (Percent)	Bulk Density (lb/cubic yard)	Nitrogen Availability (Percent)[1]
Broiler with litter	73	64	66	70	900	40-70
Laying Hen	37	57	47	40	1400	40-70
Sheep	18	9	35	28	1400	25-50
Horse	9	6	16	37	1400	0-20
Beef	12	6	17	23	1400	20-40
Dairy:						
Dry Stack	9	4	19	35	1400	20-40
Separated Solids	5	2	3	19	1100	0-20
Liquids from:	**Nitrogen N (lb/1,000gal)**	**Phosphorus P_2O_5 (lb/1,000gal)**	**Potassium K_2O (lb/1,000gal)**	**Solids (Percent)**	**Density (lb/gal)**	**Nitrogen Availability (Percent)[1]**
Dairy:						
Holding Tank	21	14	24	8	9.2	75-85
Pond, no agitation	4	1	6	<1	8.4	85-95
Pond, agitated	12	7	18	4	9.0	80-90

[1] Nitrogen available in the first growing season after application. For a field that has received manure annually for 4 years or more, consider 100% of the nitrogen available.

[2] Manure is at the moisture content typically found in storage.

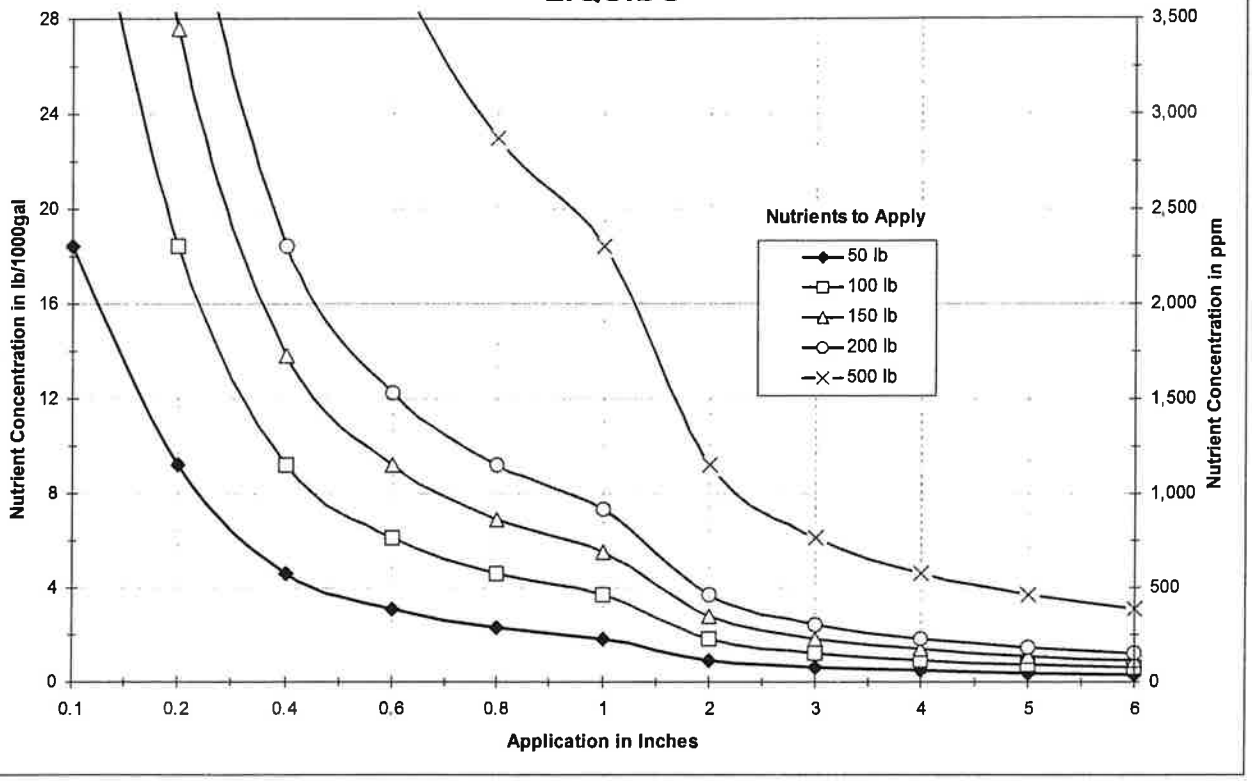
Table 1-2
Typical Nutrient Availability After Application

Typical nutrient content of animal manure retained after application:

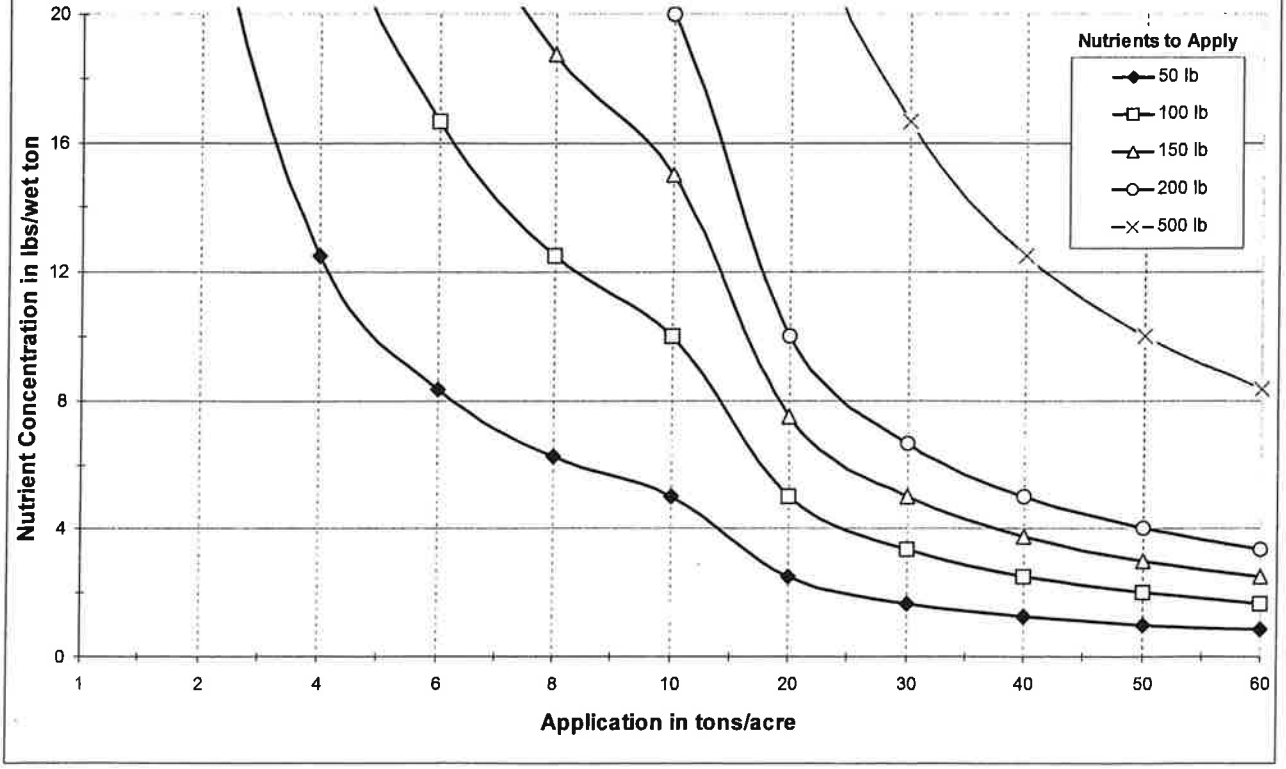
Application Method	Percent of original nutrient content of manure retained after application		
	N	P_2O_5	K_2O
Injection	95%	100%	100%
Sprinkling	75%	100%	100%
Broadcast (Incorporated 1 day after application)	90%	100%	100%
Broadcast (Incorporated 4 days after application)	80%	100%	100%
Broadcast (Incorporated 7 or more days after application)	70%	100%	100%

WASTE UTILIZATION WORKSHEET

NUTRIENT APPLICATION CHART for LIQUIDS



NUTRIENT APPLICATION CHART for SOLIDS



Limitations to Manure Applications

Rickreall Creek flows past White Farm's north property boundary. To protect surface and ground water, the following practices have been implemented:

- Solid manure applications are set back greater than 35' of Rickreall Creek.
- Solid manure applications are set back from all roadways to avoid potential runoff into ditches.
- No manure applications are made in areas with saturated or frozen soils.
- Designated emergency winter application areas are on appropriate soil types away from surface water. Manure will not be applied on slopes great than 7% during any necessary winter application.

Irrigation Water Management (PS 449)

White Farms LLC has water rights from Rickreall Creek for irrigation purposes. A buried mainline transports water to the fields. A big gun traveler is used to irrigate fresh water. Cropland is irrigated in sets, once every 10 days.

Desired outcomes are to:

- Manage soil moisture to promote desired crop response
- Optimize use of available water supplies
- Minimize irrigation induced soil erosion
- Decrease non-point source pollution of surface and groundwater resources
- Manage salts in the crop root zone
- Manage air, soil, or plant micro-climate

IRRIGATION VOLUME CALCULATIONS

Diameter Throw	450	feet
Length of Pull	1300	feet
AREA IRRIGATED	13.43	acres

Nozzle Diameter	1.5	inch
Volume	555	gpm
Pump Pressure	70	psi
Reel Speed (fph)	50	feet/hour
Set Time	26.0	hours

Application Rate	64,469	gal/A
	2.37	inch/A
Number Applications	7	
Total Applied	16.62	inch/A

NELSON 150 BIG GUN

Nozzle Diameter (in)	PSI at Elbow	Wetted Diameter	GPM	Application (gal/set)	Application (gal/acre)	Acre-inch per pull
0.8	50	270	130	202,800	15,101	0.56
	60	285	143	223,080	16,611	0.61
	70	300	155	241,800	18,005	0.66
	80	310	165	257,400	19,166	0.71
	90	320	175	273,000	20,328	0.75
	100	330	185	288,600	21,490	0.79
	110	340	195	304,200	22,651	0.83
	120	350	204	318,240	23,697	0.87
0.9	50	290	165	257,400	19,166	0.71
	60	305	182	283,920	21,141	0.78
	70	320	197	307,320	22,884	0.84
	80	335	210	327,600	24,394	0.90
	90	345	223	347,880	25,904	0.95
	100	355	235	366,600	27,298	1.01
	110	365	247	385,320	28,692	1.06
	120	375	258	402,480	29,969	1.10
1.0	50	310	205	319,800	23,813	0.88
	60	325	225	351,000	26,136	0.96
	70	340	245	382,200	28,459	1.05
	80	355	260	405,600	30,202	1.11
	90	365	275	429,000	31,944	1.18
	100	375	290	452,400	33,686	1.24
	110	385	305	475,800	35,429	1.30
	120	395	320	499,200	37,171	1.37
1.1	50	330	255	397,800	29,621	1.09
	60	345	275	429,000	31,944	1.18
	70	360	295	460,200	34,267	1.26
	80	375	315	491,400	36,590	1.35
	90	390	335	522,600	38,914	1.43
	100	400	355	553,800	41,237	1.52
	110	410	370	577,200	42,979	1.58
	120	420	385	600,600	44,722	1.65
1.2	50	345	300	468,000	34,848	1.28
	60	365	330	514,800	38,333	1.41
	70	380	355	553,800	41,237	1.52
	80	395	380	592,800	44,141	1.63
	90	410	405	631,800	47,045	1.73
	100	420	425	663,000	49,368	1.82
	110	430	445	694,200	51,691	1.90
	120	440	465	725,400	54,014	1.99
1.3	50	360	350	546,000	40,656	1.50
	60	380	385	600,600	44,722	1.65
	70	395	415	647,400	48,206	1.78
	80	410	445	694,200	51,691	1.90
	90	425	475	741,000	55,176	2.03
	100	440	500	780,000	58,080	2.14
	110	450	525	819,000	60,984	2.25
	120	460	545	850,200	63,307	2.33

United States Department of Agriculture

NRCS Natural Resources Conservation Service

Irrigation Water Management

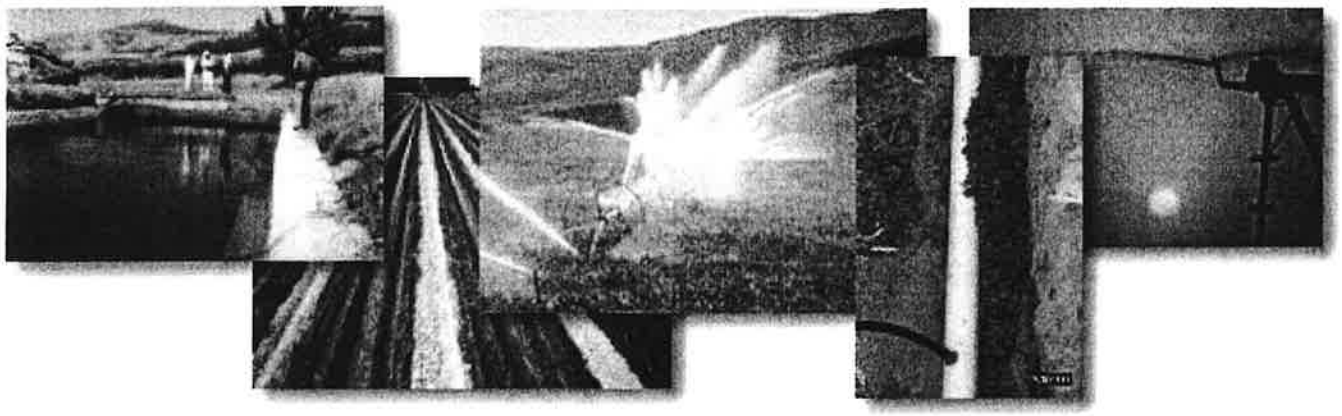
Conservation Practice Job Sheet

449 OR-JS

Natural Resources Conservation Service, Oregon

February 2004

Client White Farms LLC Date August 2006



Definition

Irrigation water management (IWM) is the process of determining and controlling the volume, frequency, and application rate of irrigation water in a planned, efficient manner.

Purpose

IWM is applied as part of a conservation management system to support one or more of the following:

- Manage soil moisture to promote desired crop response
- Optimize use of available water supplies
- Minimize irrigation induced soil erosion
- Decrease non-point source pollution of surface and groundwater resources
- Manage salts in the crop root zone
- Manage air, soil, or plant micro-climate.

Where used

This practice is applicable to all irrigated lands. An irrigation system adapted for site conditions (soil, slope, crop grown, climate, water quantity and quality, etc.) must be available and capable of applying irrigation water to meet the intended purpose(s).

Conservation Management Systems

IWM is generally one of several components of a resource management system used to manage water supplied to a crop through an irrigation system that is part of an overall resource management plan for the irrigated cropland.

Irrigation Water Management Planning

IWM components of the conservation plan will contain the following information:

- field map(s) and soil survey information
- crop rotation or sequence
- recommended irrigation water application rates, timing, and method of application
- locations of designated sensitive areas
- guidelines for irrigation system operation and maintenance

IWM is most effective when used in conjunction with other conservation practices such as irrigation system design, cover crop, residue management, conservation buffers, nutrient management, pest management, and conservation crop rotation.

IWM requires knowledge, skills, and desire to determine when irrigation water should be applied. The main factors influencing IWM are ***irrigation interval*** (time between irrigations), ***irrigation set time*** (time water is applied), and ***application rate*** (rate at which water is applied). These parameters define the timing and duration of irrigation and the amount of water applied. System design and maintenance are also important factors influencing IWM.

Water Rights

Under Oregon law all water is publicly owned and anyone planning to store or divert surface or groundwater for the purpose of irrigation must obtain a permit or water right from the Oregon Water Resources Department. These permits or water rights must be obtained prior to the use of the water. It is the responsibility of the landowner to file for the necessary permits or water rights.

Operation and maintenance

There are no operation and maintenance (O&M) aspects applicable to this standard. Necessary O&M items are addressed in the physical component standards considered as companions to this standard.

Specifications

Site-specific requirements for IWM are listed on specification sheets. Specifications are prepared in accordance with the NRCS Field Office Technical Guide. See NRCS practice standard, Irrigation Water Management, Code 449. Use a *Soil Survey* and NRCS National Engineering Handbook, Part 652 – *Irrigation Guide* or locally accepted references for procedures to calculate values such as application rates for various irrigation systems, and to estimate water holding capacities of soils.

Water Flow Rates and Conversion Factors

$$Q * T = D * A$$

where:

Q = flow rate (acre-in/hr or cfs)
T = time (hr)
D = gross depth applied (in)
A = area (acres)

$$Q = \frac{453 * A * D}{F * H}$$

where:

Q = flow rate (gpm)
A = area (acres)
D = gross application depth (in)
F = irrigation period (days)
H = hours of operation per day

Water Flow Rates:
1 cubic foot per second (cfs)
= 448.8 gallons per minute
1 cfs for 1 hour = 0.99 acre-inch
1 cfs for 24 hr = 1.98 acre-ft
1,000 gpm = 2.23 cfs
1,000 gpm for 24 hr = 4.42 ac-ft
1 cfs = 40 miner's inches in OR, AZ, MT, No. CA
1 cfs = 50 miner's inches in ID, KS, NE, NM, ND, SD, So. CA
1 cfs = 38.4 miner's inches in CO
1 miner's inch = 11.22 gpm in OR
1 cfs = 28.32 liters/sec
1 cfs = 0.02832 cubic meters/s
1 cubic meter/sec = 35.3 cfs
1 liter/sec = 15.85 gpm

Pump Power Requirement:

$$\text{Horsepower} = \frac{\text{Pump Head in ft} * \text{gpm}}{3960 * \text{Pump Efficiency}}$$

Water Volumes & Weights:
1 cubic foot = 7.48 gallons
= 62.4 lb
= 28.3 liters
1 acre-foot = 43,560 cubic feet
(1 acre covered 1 ft deep)
12 acre-inches = 1 acre-ft
1 million gallons = 3.07 acre-ft
1 acre-ft = 1,234 cubic meters
1 cubic meter = 1,000 liters

Pressure and Pressure Head:
1 psi = 2.31 ft of pressure head
1 atmosphere (sea level)
= 14.7 psi = 33.9 ft of head

Lengths and Areas:
1 mile = 5,280 ft = 1.61 km
1 meter = 3.28 ft = 39.37 inches
1 acre = 43,560 square ft
1 hectare = 2.47 acres

IRRIGATION WATER MANAGEMENT SPECIFICATION SHEET

Client: White Farms LLC

Job Location: 550 Morrow Road, Independence, OR 97351

County: Polk Farm/Tract No.:

Referral No.: Prepared by: Northwest Agricultural Consulting Date: August 2006

DESIGN APPROVAL:

Practice Code NO.	PRACTICE	LEAD DISCIPLINE	CONTROLLING FACTOR	UNITS	JOB CLASS				
					I	II	III	IV	V
449	Irrigation Water Management	CED-WME & BCSD-Agron	Area	Acres	40	320	640	2000	All

This practice is classified as Job Class _____

Design Approved by:/s/_____ Date:_____

Job title:_____

CLIENT ACKNOWLEDGEMENT STATEMENT:

The Client acknowledges that:

a. The Client has received a copy of the specification and understands the contents and requirements.

b. The Client will provide to NRCS the following information before this practice can be certified as applied:
- ❑ Irrigation water application records which include the dates and amounts of water applied.
- ❑ Documentation showing the irrigation scheduling technique used.
- ❑ Evaluation of the irrigation system used.

c. It shall be the responsibility of the Client to obtain all necessary permits and/or rights, and to comply with all ordinances and laws pertaining to the application of this practice.

Accepted by:/s/_____ Date:_____

CERTIFICATION:

I have completed a review of the information provided by the Client and certify this practice has been applied.

Certification by:/s/_____ Date:_____

Job title:_____

Client: White Farms LLC **Date:** _____

IRRIGATION SYSTEM WALK-THROUGH INSPECTION EVALUATION

This form is used to identify and evaluate those components of an irrigation system that directly affect irrigation system operation and water management. Other aspects not directly affecting irrigation water management, such as energy-use efficiency, may also be noted.

ITEM	OK	Needs attention	Comments
Irrigation water supply			
Adequate water supply for area irrigated			
Suitable quality of irrigation water supply			
Inflow controlled by valve and/or gate			
Inflow is measured easily and accurately			
Type of water measuring device:			
Source of irrigation water:			
Type of delivery schedule if applicable:			
Irrigation water conveyance			
Adequate capacity in ditch and/or pipe			
Ditch or pipe free of leaks			
Adequate water control devices			
Irrigation water application			
Adequate water control for uniform application			
Uniformity of application throughout field			
Wet and/or dry spots			
Excessive runoff Note: There should be no runoff from sprinkler-irrigated areas.			
Overall system condition			
General maintenance			
Other (note):			

IRRIGATION WATER MANAGEMENT WORKSHEET

Client: White Farms LLC

NOTE: • This worksheet pertains to **each** crop irrigated and months throughout the growing season.
• A computerized version of this worksheet is available at NRCS field offices.
Make additional copies of this sheet as needed.

IRRIGATION REQUIREMENT HOW MUCH water to apply?	Date	Date	Date	Date	Date	Date
Field ID:						
Soil Name:						
Available Water Capacity (in/in): (Average throughout the managed root zone)						
Soil Intake Rate (in/hr) :						
Crop:						
Effective Rooting Depth (in) :						
Total Available Water Capacity (in): Effective rooting depth * Available Water Capacity						
Management-Allowed Deficit (%:):						
Net Irrigation Requirement (in): Total Available Water Capacity * MAD						
IRRIGATION TIMING WHEN to apply water?						
Average Daily Crop Water Use (in/day):						
Irrigation Frequency (days): Net Irrigation Requirement / Daily Water Use						
Actual Irrigation Period (days) :						
Desired Net Irrigation Application (in): Daily crop water use * Actual Irrigation Period						
SYSTEM CAPACITY						
System Application Efficiency (%): (Water Required / Water Applied)						
GROSS Irrigation Requirement (in): (Net Irrigation Application / Application Efficiency)						
Irrigated Acres:						
Gross Application Requirement (acre-in): Gross Irrigation Requirement * Acres						
Required System Flow Rate (gpm or cfs) (Equations on p. 2)						

Compare **Irrigation Timing** and **System Capacity** with **documented** system operation - pp. 6-8

IRRIGATION WATER MANAGEMENT WORKSHEET

Client: **White Farms LLC**

NOTE: Make additional copies of this sheet as needed.

IRRIGATION APPLICATION RECORD			
Field ID:		**Field Area (acres):**	
Application System Type:		**Application Efficiency (%):**	

Date	Application Flow Rate Measured (cfs or gpm) (circle one)	Irrigation Duration (hr)	**GROSS** Application (in)	**NET** Application (in)	Notes Including soil moisture level, crop appearance, and runoff

IRRIGATION WATER MANAGEMENT WORKSHEET

Client: White Farms LLC **Field ID:** ____________

NOTE: Make additional copies of this sheet as needed.

CHECKBOOK METHOD FOR IRRIGATION SCHEDULING AND DOCUMENTATION										
Date	Available Soil Water (inches)	-	Crop Water Use (inches)	+	Effective Rainfall (inches)	+	Effective Irrigation (inches)	=	Remaining Water (inches)	Comments
		-		+		+		=		
		-		+		+		=		
		-		+		+		=		
		-		+		+		=		
		-		+		+		=		
		-		+		+		=		
		-		+		+		=		
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		-		+		+		=		
		-		+		+		=		

Natural Resources Conservation Service, Oregon February 2004

IRRIGATION WATER MANAGEMENT WORKSHEET

Client: White Farms LLC **Field ID:**

NOTE: Make additional copies of this sheet as needed.

SOIL WATER OBSERVATIONS AND MEASUREMENTS

Record Results of Soil Probing** and/or **Sensor Readings from Tensiometers or Resistance Blocks at Least Once per Week

	OBSERVATIONS or READINGS			Irrigation	Rainfall	COMMENTS
DATE	8-inch depth Other ( )	18-inch depth Other ( )	30-inch depth Other ( )	(inches)	(inches)	

Mortality Disposal

Mortalities are hauled off farm by White's Farm.

Record Keeping and Reporting

Record Keeping

- Manure application records, including amount of nitrogen and phosphorus applied will be kept for each application.

- Records of exporting manure will also be kept, if applicable.

Reporting to Oregon Department of Agriculture (ODA)

- Any discharge will be reported orally to ODA within 24 hours. Within 5 days, a written statement describing this discharge will also be submitted to ODA.

- The amount of manure, litter and process waste applied will be reported on ODA's Annual Report.

- The amount of manure, litter and process waste exported will be reported on ODA's Annual Report.

Natural Resources Conservation Service, Oregon

WASTE UTILIZATION WORKSHEET

Waste Application Record

Name: White Farms LLC Field ID: _____

Crop: _____ Acres: _____ Seeding Date: _____

Date	Crop Stage	**Waste Type** Liquids **(L)**, Solids **(S)**, Separated Solids **(SS)**, Etc.	**Amount Applied** (Loads, Inches, Tons, Hours of Operation, Etc.)	Notes

590 OR-Specification

Natural Resources Conservation Service, Oregon — August 2002

CLIENT NUTRIENT MANAGEMENT RECORD WORKSHEET

Client: White Farms LLC. **Date:** _____

Tract number(s):		**Field Number(s):**		**Total Acres:**	
Current Crop:		**Yield Goal:**			

Soil and Organic Test Information

Soil Sample Area	Soil Test Results (ppm) N	P	K	Other	Organic Test (solid, liquid)	Organic Test Results (lbs/ton, lbs/acre-in) N	P_2O_5	K_2O

Nutrient Application

Date	Nutrient Source (fertilizer, manure	Gross Applied (per acre)	Units* (lbs, tons, ac-in)	Formulation* N	P_2O_5	K_2O	Net Applied (lbs/acre) N	P_2O_5	K_2O
					Totals				

* Units and Formulations must be consistent. For commercial fertilizer, units should be lbs and formulation should be %. For solid manure, units should be tons and formulation should be lbs/ton. For liquid manure, units should be ac-in and formulation should be lbs/ac-in.

RECORD KEEPING

Off-Farm Transfer Worksheet

Transferred To:	Date	Amount (tons or Gallons)	Nutrient Content N	P2O5	K2O

NOTES:

RECORD KEEPING

Spill Log

Date	Source of Spill	Report filed with ODA?	Cleanup Completed by:	Date

NOTES:

RECORD KEEPING

Record of Plan Reviews and Changes

Date	Name of Reviewer	Changes to plan needed?	Actions Completed by:	Date

NOTES:

RECORD KEEPING

Record of Operation and Maintenance Inspections for

Date	Name of Inspector	Corrective Actions Needed?	Actions Completed by:	Date

NOTES:

RECORD KEEPING

Record of Application Equipment Calibration

Date	Equipment Calibrated	Calibrated by:

NOTES:

From: William Matthews <wmatthew@oda.state.or.us>
Subject: **Fwd: AWMP< Extension Requests**
Date: July 6, 2006 9:16:27 AM PDT
To: Micah Wells <mwells@oda.state.or.us>, Kathryn N Higgs <khiggs@oda.state.or.us>
1 Attachment, 2.7 KB Save

Folks; Can you sort these out a prepare extension letters? Thanks -Wym

Begin forwarded message:

From: "Tom Thomson" <tomt@onlinenw.com>
Date: July 6, 2006 8:51:06 AM PDT
To: "Wym Mathews" <wmatthew@oda.state.or.us>
Subject: AWMP< Extension Requests

Wym:

I would like to the following dairymen to receive extensions on the date by which they need to file the AWMP with the ODA. The plans are in process and I expect to have them complete within the time frame the USDA-NRCS has given for completion of the CNMP process which is September 1, 2006.

Claude White White Farms
Dave Cruickshank

==========

Tom Thomson Northwest Agricultural Consulting
1275 Oak Villa Road tomt@onlinenw.com
Dallas, Oregon 97338 Phone/FAX 503-623-0468

"The only difference between a problem and a solution is that everyone understands the solution." Charles Kettering

==========

winmail.dat (2.7 KB)

Oregon
Theodore R. Kulongoski, Governor

Celebrating 75 years!
Department of Agriculture
635 Capitol Street NE
Salem,OR 97301-2532

June 7, 2006

Claude White
White Farms LLC
550 Morrow Road
Independence, OR 97351

RE: Animal Waste Management Plan (AWMP)

Dear Mr. White:

For those of you who have not met me, I am your new area CAFO inspector. I have replaced your former inspector, Sarah Harshberger.

I just wanted to take a moment to remind you that your AWMP for your facility is due to the department by **July 1, 2006**. That is less than one month away!

If you do not think you will be able to meet this deadline, an extension will need to be filed with the department. If you would like to file for an extension, please call me and I can help you with this.

If you have any questions or need any assistance, please feel free to contact me at 503-986-4780.

Sincerely,

Kathryn Higgs

Kathryn Higgs
Livestock Water Quality Specialist
PH: 503-986-4780
FX: 503-986-4730

To: deb
From: "Steven M. Skarda" <sskarda@wiley.oda.state.or.us> «Dominant»
Subject: White's Hauling
Cc:
Bcc:
X-Attachments:

Deb:

Ron and I conducted the follow-up inspection for White's Hauling today, which was thirty business days from when they signed for the NON. We mentioned to Claude White that we have received his permit application (1.), but was lacking the LUCS and proposal with a time schedule for implementation of BMP's. He stated that he will be mailing us the LUCS, BMP proposal, and request for a 30 day extension. The following is a list of five remaining items from the NON issued in November:

2. *Stop all wastewater discharge from both silage bunkers and manure pond.* Manure pond full and overflowing - small berm constructed at lower end of manure pond not adequate (constructed after Oct. 6). Neither is the diversion to keep the clean water (mostly from roof runoff) from flowing into manure pond. Discharge from two silage bunkers somewhat contained by two collection ponds constructed since the Oct. 6 inspection.

3. *To minimize silage pit drainage, provide a temporary cover for each bunker.* There was no apparent effort to cover the silage area. Claude mentioned that the silage was to soft to safely walk on and cover. While covering the silage with plastic may not reduce the volume of water entering the collection ponds, it should improve the quality of the water entering and exiting.

4. *For the north bunker and along the east end, stack straw bales or equivalent material to contain and minimize wastewater discharge. Apply this same practice to the south bunker.*
This item is no longer relevant, since collection pits have been constructed.

5. *Clean up all accumulated bean silage, manure solids, and liquids in the North field.* The north field has been heavily disks and seeded to ryegrass and wheat in October.

6. *Submit your proposal and time schedule describing your permanent BMP....* There has been no proposal submitted, however he indicated that he will write one out and send it along with the LUCS by the end of this week. We discussed the difference between a proposal and schedule, and a complete AWMP. He is working with NRCS on an AWMP.

Conclusion: Claude has committed to: a) submit a completed LUCS, b)white a letter asking for an extension of time, and c) outlining his proposals and time line for implementing a BMP's.

December 31, 1997

Oregon
Department
of Agriculture

OFFICE OF THE
DIRECTOR

Paul Smull
8290 Rickreall Road
Rickreall, Oregon 97371

Dear Mr. Smull:

You will recall a recent inquiry you made to Governor Kitzhaber's office regarding your concern about water pollution at the Rickreall Dairy. At the request of Paula Burgess, the Governor's Natural Resources Advisor, I contacted you for more detailed information on December 15, 1997.

Your earlier complaint was received September 30, 1997, and investigated by Oregon Department of Agriculture staff October 13, 1997. My follow-up discussion with you and my on-farm inspection were to ensure our investigation had addressed your concerns regarding the dairy runoff drainage system and any impacted waterways.

The inspection conducted by department staff included extensive water sampling for E. coli bacteria which is an indicator of animal waste in water. The water quality standard for bacteria is 406 E. coli organisms per 100 ml of water according to limits set pursuant to the Clean Water Act. Sample sites were selected in consultation with you to assure representative results. All test results are low and well within established limits. The results of the sample analyses and a map of the sample sites are enclosed.

Sample site "T" is the point of discharge of the drainage system to Ash Creek, a tributary to Rickreall Creek. Please note that bacteria concentrations at sample site "T", the point at which there is discharge into Ash Creek, are extremely low. They are much lower than both the water quality standard for Ash Creek, and the general water quality in Ash Creek. My inspection of the dairy drainage system from the barns through the fields and to Ash Creek indicated a high level of management which is effectively preventing contamination from animal waste.

I appreciate your interest in water quality related to agricultural operations in the Rickreall Creek watershed. My inspection of Rickreall Dairy and analysis of water quality samples indicates this facility is in compliance with water quality regulations. The department considers Rickreall Dairy to be in compliance with their Confined Animal Feeding Operation permit.

Thank you for contacting me with your concerns.

Sincerely,

Bruce Andrews
Director

enclosures: Sample analyses; map of sample sites
cc: Governor John A. Kitzhaber

John A. Kitzhaber
Governor

635 Capitol Street NE
Salem, OR 97310-0110
(503) 986-4552
FAX (503) 986-4747

Ron,

FYI - Keep or pitch if you want.

Steve

CAFO: White's Hauling & Farm
Address: 550 Morrow Road
City: INDEPENDENCE
SWCD: Rickreall Creek
SEC: 28 **Twp:** 7S **R:** 4W
Phone #: 838-3505
Lic #:

Duplicate

Oregon Department of Agriculture
Natural Resources Division
635 Capitol Street NE
Salem, Oregon 97310
(503) 986-4700

Confined Animal Feeding Operations

Planning and Implementation Notes

Date	Investigator	Complaint No.:	Minutes:
02/09/94	D. Wilkinson	94018	120

Received complaint, referred to Polk SWCD , Pat Sougstad for investigation.

02/18/94	P. Sougstad	94018	120

Pat completed inspection and returned report to ODA for review and disposition.

03/04/94	AJY	94018	60

Reviewed report. Recommended NON. DEQ has regulatory authority.

09/30/97	AJY	97064	120

Received complaint from Governor Kitzhaber's office. Complaint filed by Paul Smull. Completed aerial photo documentation for information and layout of facility.

11/24/97	Esther Flamme	97064

NON given to Debbie for signature.

11/28/97	Esther Flamme	97064

NON returned to me & I mailed it, along with notice of certified service, & additional letter from Debbie explaining NON.

12/17/97		97064

Received letter from Harold White telling of his progress toward meeting NON requirements. See case file.

01/08/98		97064

Letter from ODA director to Paul Smull. See case file copy.

01/13/98	RDE	97064

R.Edwards & S.Skarda conducted a follow-up inspection of the items described in the NON issued 11/24/97.

01/14/98	Esther Flamme	97064

Gave file to Joel as he has to review CAFO permit application. Steve indicated that when he & Ron visited Mr. White yesterday, Mr. White said he would send in LUCS form soon.

Date: 1/16/98

8

Oregon
Department
of Agriculture

November 24, 1997

Harold White
White's hauling & Farm
550 Morrow Road
INDEPENDENCE OR 97351

Duplicate

Dear Mr. White,

Thank you for cooperating with the recent inspection of your feedlot operation. The inspection was prompted by a complaint that public waters may have been contaminated by runoff from the feedlot and silage bunker. It is this department's responsibility to respond to the complaint and to assess compliance with state water quality regulations.

The enclosed Notice of Noncompliance (NON) is your formal notification of the department's findings based on the inspection. The NON contains information to help you identify the problems and take appropriate actions.

Because you have not had a CAFO permit, you may be unfamiliar with water quality regulations affecting livestock operations and the procedures to correct pollution problems. I would be happy to talk with you about Oregon's initiatives to improve water quality and to restore fish and wildlife habitat through water quality management activities. And, should you have questions regarding the department's findings or would like help obtaining technical assistance, please give me a call.

Sincerely,

DGorham

Debbie Gorham
Acting Administrator
Natural Resources Division
Ph (503) 986-4704
FAX (503) 986-4730

Enclosure
cc: Joe Roberto, EPA

John A. Kitzhaber
Governor

Mailing address:
635 Capitol Street NE
Salem, OR 97310-0110
Location address:
3420 Cherry Ave NE

November 24, 1997

Oregon
Department
of Agriculture

Harold White
White's Hauling & Farm
550 Morrow Road
INDEPENDENCE OR 97351

NOTICE OF NONCOMPLIANCE
CERTIFIED MAIL

Dear Mr. White:

On Monday October 6, 1997, an inspector from the Oregon Department of Agriculture (ODA) investigated a complaint regarding your livestock operation. The inspection confirmed several violations of state water quality statutes. Conclusions regarding these violations are based on direct observations, video photography and statements made by you to the inspector. The inspector's observations are summarized below.

1. White's Hauling & Farm has inadequate storage facilities to contain silage pit drainage. The first unauthorized discharge occurred from the north silage bunker. Unconfined wastewater leached from the bunker and discharged into a feedlot and accumulated on bare soil with no vegetation. In the feedlot, the leachate mixed with accumulated animal wastes and flowed north to a small pickup ditch. The unconfined wastes discharged into a swale that bisects the pasture in a northwest to southeast direction. The combined sources flowed in two directions; east to the property boundary and north toward Rickreall Creek. The second or south bunker silage pit drainage was conveyed through a subsurface pipe connected to an undefined pond and discharged from the pond to pastureland. The unconfined wastes flowed east to the same property boundary and accumulated in the pasture. Unconfined wastes allowed to accumulate in streamside fields are likely to leach into groundwater or runoff in rainfall events. Placing wastes in locations where they are likely to escape or be carried into surface or groundwater of the state is a violation of Oregon Revised Statutes (ORS) 468B.025.

2. White's Hauling & Farm has inadequate wastewater facilities to contain, treat, and hold animal wastes. From the main barn all wastes are scraped to an excavated holding pond. The accumulated solids are annually removed by an excavator and spread on pastureland while the liquids are allowed to evaporate. Wastewater discharged from the pond was allowed to accumulate unconfined in the pastures. Accumulated animal wastes in excess of agronomic needs is likely to leach nutrients to groundwater or cause surface runoff. The wastes then flow north to the previously described swale. Placing wastes in locations where they are likely to escape or be carried into surface or groundwater of the state is a violation of ORS 468B.025.

3. White's Hauling & Farm is a confined animal feeding operation (CAFO) as described in ORS 468B.205, which states "a CAFO means the concentrated feeding or holding of animals or poultry, including, but not limited to horse, cattle, sheep, or swine feeding areas, dairy confinement areas, slaughterhouses or shipping terminal pens, poultry and egg production facilities and fur farms, in buildings or in pens or lots where the surface has been prepared with concrete, rock or fibrous material to support animals in wet weather or have wastewater treatment works". Your livestock are confined in buildings and pens that have a concrete surface, and you have wastewater treatment works as defined in ORS 468B. 005 (6). By your admission you confine livestock on a year around basis. CAFO(s) which have wastewater facilities and confine for more than four months per year are required to register for the CAFO permit in accordance with ORS 468B.050.

John A. Kitzhaber
Governor

Mailing address:
635 Capitol Street NE
Salem, OR 97310-0110
Location address:
3420 Cherry Ave NE

To correct these violations, White's Hauling & Farm is required to complete the following actions within 30 business days from the date of this letter.

1. Complete a CAFO Registration Form and a Land Use Compatibility Statement (LUCS) and return both forms along with the $75.00 filing fee to the department. mailed this 12/3/97

2. Stop all wastewater discharges from both silage bunkers and manure pond.

3. To minimize silage pit drainage, provide a temporary cover for each bunker.

4. For the north bunker and along the east end, stack straw bales or equivalent material to contain and minimize wastewater discharges. Apply this same practice to the south bunker.

5. Clean up all accumulated bean silage, manure solids and liquids in the north field.

6. Submit your proposals and time schedules describing your permanent best management practices (BMP) designed to store and distribute feedstocks, contain all wastewater, manure collection, handling, retention, and disposal. The proposal shall include plans for clean water diversions and operational and maintenance information for each BMP.

To address these violations described above, we recommend that you obtain professional assistance, such as private engineers, or agricultural assistance for the purpose planning, designing and implementing waste management practices that will enable you to comply with the state's water quality laws.

I must emphasize that it is your responsibility to initiate and carry out the actions required to resolve these violations. I am obligated to advise you that if these violations continue 30 business days from the date of this notice, you may be liable for enforcement action including civil penalties.

Thank you for your cooperation in this matter. If you have any questions, please contact Alan J. Youse. He can be reached at (503) 986-4708.

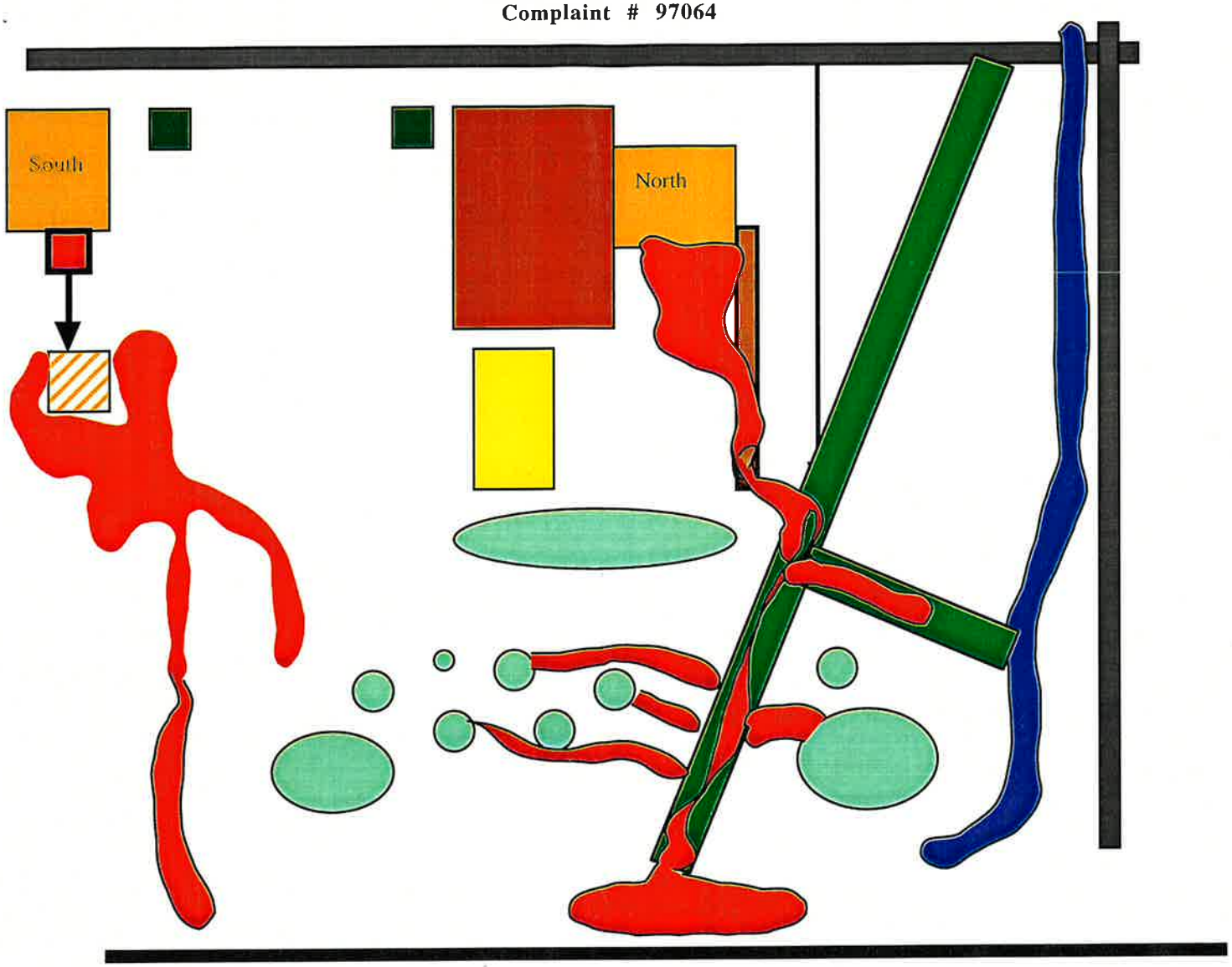
Sincerely,

Debbie Gorham
Acting Administrator
Natural Resources Division
Ph 503-986-4700
FAX 503-986-4730

Enclosure

cc: Joe Roberto, EPA Region 10

White's Hauling & Farm
550 Morrow Rd
Independence OR 97351
Complaint # 97064



North

LEGEND

- Animal Waste Holding Pond
- CAFO
- Bean Silage Stacks
- Morrow Road Rickreall Road
- Silage Bunkers
- Silage Pit
- 550 Morrow Rd
- Rickreall Creek
- Surface Inlet for silage
- Swale
- 12" Pipe
- Wastewater Flows

Alan J. Youse
10-16-1997

MEMO

Folder TO Spool Chain

To: Debbie Gorham
From: Alan J. Youse
Subject: Inspection Results for Rickreall Dairy, L. L. C. , and White's Hauling & Farm
Date: October 21, 1997

Listed below is a summary of my investigations and findings regarding the complaints filed by Mr. Paul Smull through Governor's Office. As you are aware we are required to draft a response and forward our findings to their office. When the information is received by their office they will forge a response to Mr. Smull.

White's Hauling & Farm

On Monday October 6, after interviewing, Mr. Smull, I conducted an announced inspection of White's Hauling & Farm. My primary point of contact was Mr. Harold White, owner and registered agent. There are two types business located at 560 Morrow Road, Independence, OR.

1. They are a contract harvester/hauler of silage and cannery wastes. White's have contracts with an unknown number of farmers and dairies throughout the valley to cut field corn or grasses. The harvested crops are either directly hauled and stored on each farm or stockpiled atWhite's operation. Also, White's Hauling contracts with local food processing plants to collect, haul and stockpile processed food wastes to be used as feed for livestock.

2. White's Hauling & Farm is a non permitted confined animal feeding operation. Throughout the year they maintain a 50 head to 240 head replacement heifer business for dairy operations in the valley and the coast. During the inspection I observed unconfined silage pit wastewater and animal wastes discharging from inadequate or no wastewater facilities. The unconfined wastewaters were allowed to accumulate in pastures and natural drainageways. The unauthorized placement of wastes create a potential groundwater pollution problem, in addition, to wastes being placed in a position to be carried into surface waters of the state.

This past summer for 45 consecutive days, 50 tons per day of bean silage was randomly deposited throughout 90% of the pasture and used as feed. The feed was not removed from the field and continued to decay posing a potential threat to groundwater and surface water runoff into Rickreall Creek.

Violations

This complaint is valid and White's Hauling & Farm operation has violated ORS Chapter 468B. Specifically:

- 468B.205, Confined animal feeding operations; White's Hauling & Farm is a cafo as described in this statute
- 468B.025, Prohibited Activities, by placing wastes in locations where they are likely to escape or be carried into waters of the state.
- 468B.050, When permit required (1) (d) By constructing, installing and operating a waste disposal system without first obtaining a permit.

Compliance Pathway

- ODA to issue a Notice of Noncompliance describing the violations
- Identify temporary corrective measures to contain, treat, hold and dispose of animal wastes
- Complete and submit a cafo registration form
- Negotiate a Plan of Correction

Rickreall Dairy, L. L.C.

On Monday October 13, I investigated a second compliant filed by Paul Smull through the governor's office regarding Rickreall Dairy, L. L. C. The complainant alleged manure and wastewater discharged to a series of ditches directly connected to Rickreall Creek. My primary point of contact was Louis Kazemier, owner, general manager.

During the inspection I located five subsurface pipes designed to convey roof runoff water away from the animal confinement buildings. Four of the five pipes are connected to exposed 6' wide by 480' long concrete sluiceway. Adjacent to each sluiceway are animal confinement areas and alleyways. Manure accumulates in the alley way and is flushed to a separate waste collection system. During the flush cycle an unknown volume of wastewater splashes over a one foot high concrete curb to each sluiceway. This curb separates the sluiceway from the alleyways in the animal confinement area. During the animal confinement period occasional direct deposits of manure from livestock drops onto the sluiceway. In addition to the livestock, the dairy farm has a very large unwanted bird population. The birds scavenge feed, and defecate while roosting in the barn and along the roof tops. Upon any rainfall event water drops from the roofs onto the sluiceway and flows east to inlet pipes located at the end of each of the four sluiceway. The inlet pipes are individually connected to four sealed continuous plastic pipes that outlet into a ditch east of the heifer barn. Then wastewater flows north along the east pond embankment and empties into another pipe. This pipe emerges approximately 1000' east of the pond and discharges into another ditch along Highway 22. All runoff from the pipe, ditches and the highway flows to an excavated pond on a neighboring farm. Water from the pond enters another ditch connected to Ash Creek.

The complaint filed by Paul Smull was valid. Based on my observations of pollution indicators(blood worms, slimes, anaerobic conditions) in the ditch along the east heifer barn I collected water samples for e-coli analysis. The results verify violations of ORS 468B.

Violations

- ORS 468B.025, Prohibited Activities and,
- Special Condition one of the operator's Water Pollution Control Facilities Permit (0800 (General Permit)
- OAR 340-41-442 (2)(e), Exceedance of the Bacteria Standards set for the Willamette Basin. The standard describes no single sample shall exceed 406 E.coli organisms per 100 milliliters of water. The lab results showed concentrations ranging from 120 MPN(most probable number)MPN/100 ml to 140,000 MPN/100ml.

Compliance Pathway

- Issue a Notice of Noncompliance describing the documented violations, and
- Identify temporary measures to minimize the wastewater discharges, and
- Negotiate a Plan of Correction

STATE OF OREGON
DEPARTMENT OF AGRICULTURE

#551259 1/8/ RDOC CK $75.00

OFFICIAL USE ONLY
41004
8512 $50--8510 $25
Facility I.D. No.:
Hydrocode No.:

FOR CASHIER'S USE ONLY

GENERAL PERMIT REGISTRATION FOR CONFINED ANIMAL FEEDING OPERATION (CAFO)

Firm # 142650
Lic # 143906-99

NEW APPLICANTS:	
New Application Fee	$50
New Management Fee	25
Total	$75

Dairy

1a. Name and mailing address: Harold White
550 Morrow Rd.
Ind. OR. 97351
Independence

2. Location of CAFO facility if different than 1.:
Polk

1b. Assumed business name:
White's Hauling & Farm
Telephone No.: 503-838-3505

3. Brief description of CAFO facility (see instructions): old Dairy converted To Cow - Calf operation

4a. Number and type of confined animals on hand (see instructions): 90 Beef Cows 46 Heifers for Dairy Replacement.

4b. Number of animals for which the waste handling facilities were designed (see instructions): 160 milk Cows

5. Describe the sources of wastewater generated (see instructions): manure - corn Silage - Rain water

6. Describe the type and size of wastewater and manure collection and storage facilities (see instructions): See map A yellow in color.

7. Describe the manure and wastewater land application system (see instructions): we use manure Spreader to Distribute in Spring & Summer.

MAXIMUM NO. OF ANIMALS

(Turn page over to complete form)

new operation

8. Describe the land available for manure and wastewater application (see instructions): Land is owned By White - waste water is applied to permeat pasture and Rye grass - See maps A & B -

9. Do you have a written animal waste management plan? NO But Plans are Being Reviewed.
(Yes/No)

10. Attach a simple diagram of your CAFO operation, including the confinement facility, all wastewaters and where they go, the storage facilities, and land application area. Also show surface streams, lakes and waterways in the vicinity of the collection, storage, and application areas. (An aerial photograph of your facility with the various units marked on the photo will be accepted in lieu of the diagram.)

I hereby certify that the information included in this application is true and accurate to the best of my knowledge.

Signature: Harold Wahto
Title: Owner
Date: 12-31-97

APPLICATION MUST BE SIGNED AND FEES ATTACHED

RETURN APPLICATION TO:

Oregon Department of Agriculture
Natural Resources Division
635 Capitol Street NE
SALEM OR 97310-0110

NOTE: Oregon Revised Statutes, ORS 468.740, require that any person with a wastewater disposal system must have a permit issued by the DEQ. Liquid manure and wastewater disposal systems used by CAFO facilities, except those that confine for four months or less, are included under that requirement and must have a permit to construct and/or operate the wastewater and liquid manure disposal system, even though the manure is put to beneficial use.

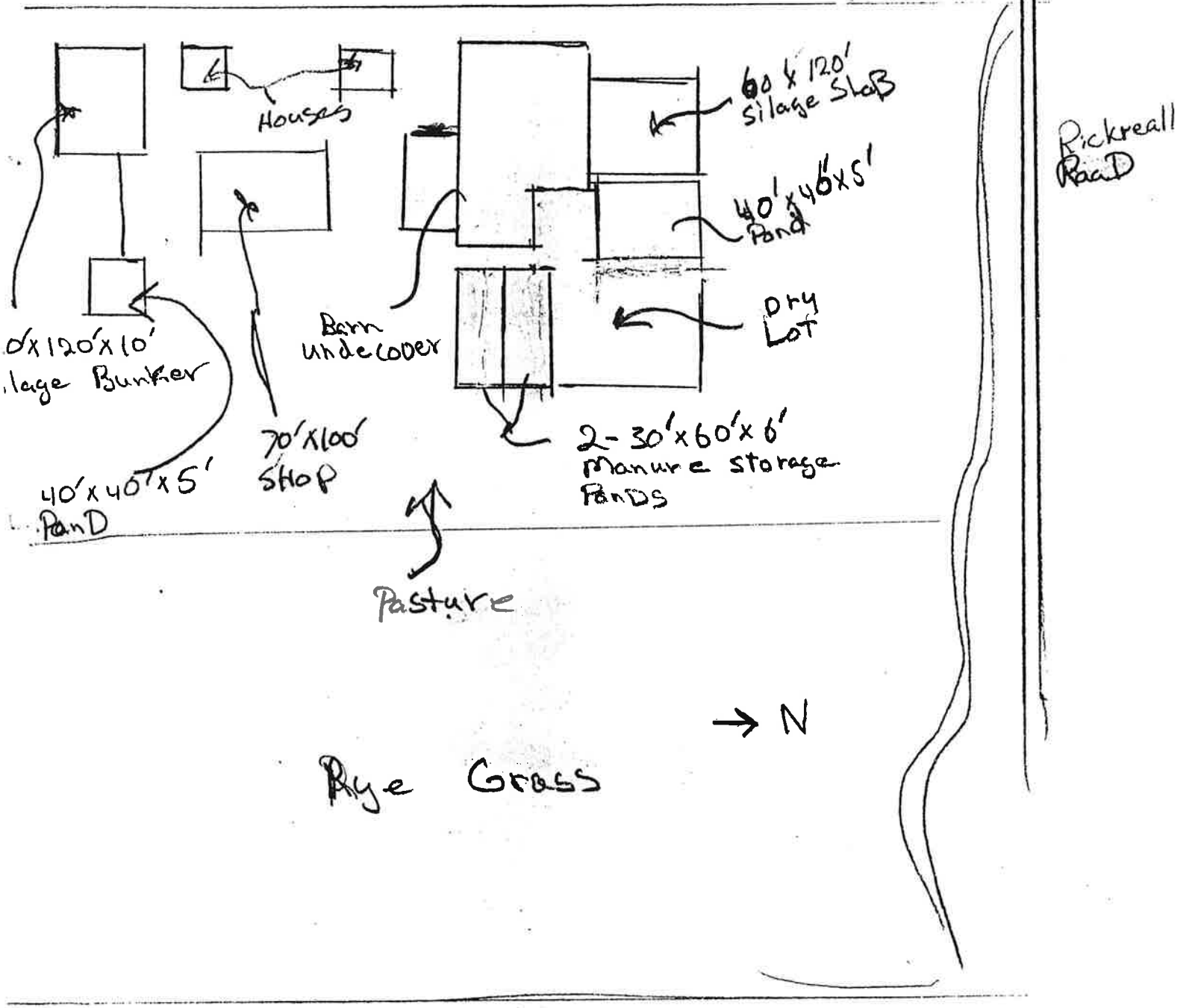
DO NOT COMPLETE THIS APPLICATION IF YOUR OPERATION CONFINES FOR FOUR MONTHS OR LESS. IN THIS CASE A PERMIT IS NOT REQUIRED.

If you have any questions about this application or how it applies to your operation, please contact the Natural Resources Division of the Oregon Department of Agriculture at the address above, or telephone (503) 986-4700.

If you desire some technical advice on your CAFO operation or your wastewater management system, please contact the Natural Resources Division at the same address and telephone number.

NR/CAFO/NR108
FORM 7001
7/95

map A


Morrow RD
Houses
60 x 120' Silage Slab
40' x 40' x 5' Pond
Dry Lot
Barn Undercover
0' x 120' x 10' lage Bunker
40' x 40' x 5' Pond
70' x 100' Shop
2- 30' x 60' x 6' Manure storage Ponds
Pasture
Rickreall Road
N
Rye Grass

WHITES HAULING

From pschulte@or.nrcs.usda.gov Tue Jan 12 18:31:22 1999
Date: Tue, 12 Jan 1999 18:02:08 -0800
From: Pat Schulte <pschulte@or.nrcs.usda.gov>
To: jpalmer@peak.org
Subject: Claude White AWMP

01/12/99

Good day Joel Palmer,
Pat Schulte here. How have you been?
The Claude White AWMP is now on my desk. Would you help me to help these folks bring their operation up to spec?

Situation Update: On the facilities side the Whites have built additional covered storage for solids which should allow them to dry stack for the entire rainy season. All buildings now guttered with rain led to safe outlet. I am working with Claude to find a solution to silage storage. In the meantime no silage will be stored on the place. On the management side the Whites will use manure and soil testing with an assist from the NRCS and Extension to bring nutrient application into balance.

I have a copy of your May 13 Email to Bruce. In it you mention some problems that you saw in the AWMP that Monte worked up with the Whites. I wonder if you would help me to address the issues that are of concern.
Could I fix the plan with attachments to provide clarifications or additions?

Problem you mentioned: No accounting for silage seepage in ORAWM.
My comment: White's are not now storing silage on the place. Claude and I have talked over several alternatives for safe storage but we are still in the early planning stage.

Problem: ORAWM calls for waste disposal beginning in January..
Comment: You think this is too early? If so schedule could be modified.

Problem: No guidance on depth of application or nutrient content.
Comment: Nutrient content must be known and therefore tested before depth of application can be specified.
Plan should specify testing and suggest ways and means for application at agronomic rates.

Problem: 100% of annual P in single application.
Comment: I need to sit down with Claude and understand his cropping system. I take it you are suggesting split application.

Problem: No O&M except for irrigation.
Comment: Plan should include standard language on O&M.

Problem: Engineering soil tests.
Comment: Not required since as you noted no earthwork currently planned.

Worksheet OR10A-1--Waste storage period determination

Adjusted Storage Period: ASP_{LIQUID} = _____ Days ASP_{SOLID} = _____ Days

ASP = SPb X Fm X Fs X Fl X Fn X Fa

ASP_{LIQUID} = _____ X _____ X _____ X _____ X _____ X _____

ASP_{SOLID} = _____ X _____ X _____ X _____ X _____ X _____

Adjusted earliest Day of Year for application, **E_a** = ASP - (365 - L)

$E_{a\ LIQUID}$ = _____ - (365 - _____) = _____

$E_{a\ SOLID}$ = _____ - (365 - _____) = _____

Storage Period: SP_{LIQUID} = _____ Days SP_{SOLID} = _____ Days

The storage period must span the seasonal flooding conditions. The storage period must also span frozen ground and snow conditions where the land slope exceeds 5% and a buffer strip of less than 100 feet exists next to open water courses that affect the application area-

a. Enter **L** from Sheet 1 and determine the Day of Year **L_f** when seasonal frozen ground, snow or flooding conditions are first anticipated for the application area-

L = _____ **Days** **L_f** = _____ **Days**

If L_f comes before L then $L_{sp} = L_f$

If L_f comes after L or there is no seasonal frozen ground, snow or flooding then L_{sp} = L

L_{sp} = _____ **Days**

b. Determine the Day of Year **E_f** when seasonal frozen ground, snow or flooded conditions are no longer anticipated for the application area-

E_f = _____ **Days**

If E_f comes after E_a then $E_{sp} = E_f$

If E_f comes before E_a or there is no seasonal frozen ground, snow or flooding then $E_{sp} = E_a$

$E_{sp\ LIQUID}$ = _____ **Days** **$E_{sp\ SOLID}$** = _____ **Days**

c. **SP_{LIQUID}** = 365 - (L_{sp} - $E_{sp\ LIQUID}$) = 365 - (_____ - _____) = _____ Days

SP_{SOLID} = 365 - (L_{sp} - $E_{sp\ SOLID}$) = 365 - (_____ - _____) = _____ Days

d. **Earliest date(E_{sp}) for manure application (month-day):**

$E_{sp\ LIQUID}$ = _____

$E_{sp\ SOLID}$ = _____

e. **Latest date(L_{sp}) for manure application (month-day)** = _____

If you could take a few moments to comment on my comments it would point me in the right direction.
Looking forward to working with you.

Best Regards,

Pat Schulte
NRCS Dallas FO

Day of Year Calendar

Day of month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	1	32	60	91	121	152	182	213	244	274	305	335
2	2	33	61	92	122	153	183	214	245	275	306	336
3	3	34	62	93	123	154	184	215	246	276	307	337
4	4	35	63	94	124	155	185	216	247	277	308	338
5	5	36	64	95	125	156	186	217	248	278	309	339
6	6	37	65	96	126	157	187	218	249	279	310	340
7	7	38	66	97	127	158	188	219	250	280	311	341
8	8	39	67	98	128	159	189	220	251	281	312	342
9	9	40	68	99	129	160	190	221	252	282	313	343
10	10	41	69	100	130	161	191	222	253	283	314	344
11	11	42	70	101	131	162	192	223	254	284	315	345
12	12	43	71	102	132	163	193	224	255	285	316	346
13	13	44	72	103	133	164	194	225	256	286	317	347
14	14	45	73	104	134	165	195	226	257	287	318	348
15	15	46	74	105	135	166	196	227	258	288	319	349
16	16	47	75	106	136	167	197	228	259	289	320	350
17	17	48	76	107	137	168	198	229	260	290	321	351
18	18	49	77	108	138	169	199	230	261	291	322	352
19	19	50	78	109	139	170	200	231	262	292	323	353
20	20	51	79	110	140	171	201	232	263	293	324	354
21	21	52	80	111	141	172	202	233	264	294	325	355
22	22	53	81	112	142	173	203	234	265	295	326	356
23	23	54	82	113	143	174	204	235	266	296	327	357
24	24	55	83	114	144	175	205	236	267	297	328	358
25	25	56	84	115	145	176	206	237	268	298	329	359
26	26	57	85	116	146	177	207	238	269	299	330	360
27	27	58	86	117	147	178	208	239	270	300	331	361
28	28	59	87	118	148	179	209	240	271	301	332	362
29	29		88	119	149	180	210	241	272	302	333	363
30	30		89	120	150	181	211	242	273	303	334	364
31	31		90		151		212	243		304		365

From wilsonb@or.nrcs.usda.gov Sun May 17 15:14:22 1998
Date: Wed, 13 May 1998 20:19:11 -0700
From: "Bruce D. Wilson" <wilsonb@or.nrcs.usda.gov>
To: Joel Palmer <jpalmer@peak.org>
Subject: Re: Claude White AWMP

[The following text is in the "iso-8859-1" character set]
[Your display is set for the "US-ASCII" character set]
[Some characters may be displayed incorrectly]

Hi Joel,

Monte must of forgot to let me look the subject plan over. Since the Lower Willamette Basin has lost Fred Gelderman, Lee Ko and Randy VanHoy, Monte has had a pretty full plate and has been pretty stressed out. I'll contact Monte and see what's up.

Bruce

CONSERVATION PLAN

Client: Maack, Ray
Assisted By: Mitch Cummings

Ray Maack

LAND UNITS		PLANNED			APPLIED		
TRACT	FIELD	AMOUNT	MONTH	YEAR	AMOUNT	DATE	PLANNED CONSERVATION TREATMENT
							A 5 inch Class Code 125 PVC pipe will be installed to transfer liquid manure from the below ground liquid manure tank to the above ground liquid manure tank.
339	F	1.0No	09	1998			MANURE TRANSFER An agitator will be professionally installed in the above ground liquid manure tank to prevent solid manure buildup in the bottom of the tank.
339	F	325.0Cy	08	1998			WASTE STORAGE FACILITY The site for the above ground liquid manure tank will be prepared by removing all vegetation and woody debris so that only mineral soil is present at the site.
339	F	4700.0Sf	08	1998			WASTE STORAGE FACILITY Fiber mat will be placed on the above ground liquid manure tank site following site preparation. The fiber mat will be equal to Fiber-Tex Geotextile Grade 300.
339	F	410.0Cy	08	1998			WASTE STORAGE FACILITY Pit run rock or other suitable material approved by NRCS will be used for the above ground liquid manure tank's foundation base. Reject sand or 3/4 inch minus gravel will be used as grading material.
339	F	33930.0Cf	08	1998			WASTE STORAGE FACILITY An above ground liquid manure tank will be constructed to increase liquid manure storage capacity. A 60'x 12' above ground liquid manure tank will be installed. The tank will be installed in accordance with NRCS Drawing OR-E-516. This liquid manure tank when roofed and in combination with the existing below ground liquid manure tank will provide 170 days storage for the existing 103 - 1000 lb units.
339	F	2.0no	09	1988	2.0no	09/07/1988	TROUGH OR TANK
339	F	2513.0Cf	08	1988	2513.0Cf	06/02/1988	WASTE STORAGE FACILITY A below ground liquid manure tank has been installed. A 20'x 8' reinforced concrete liquid manure tank was installed. The facility was roofed to prevent any rain water from entering the tank. The tank was installed in accordance with NRCS specifications and an approved design. The liquid manure tank will provide 10 days liquid waste storage for the existing 103 - 1000 lb units.

email to Bruce Wilson on May 13, 1998

Bruce:

We received on May 8 an AWMP for Claude White's livestock operation in Polk County. It is signed by Monte Graham, but not by you. Are you still reviewing and signing-off on NRCS-produced AWMPs?

I can already see problems with the AWMP. There is no accounting for the silage seepage in ORAWM. ORAWM calls for waste disposal beginning at the end of January. There is no guidance about depths of application, or nutrient content, except ORAWM which describes only applying 100% of annual P in a single application. The only O&M is for irrigation. Engineering soil tests are mentioned, but no earthworks are described that would seem to require these.

Can you tell me what's up with this one?

- Joel

5/6/98

#9809

Oregon Department of Agriculture
635 Capitol St NE
Salem, Or. 97310-0110

Attention: Steve Skada

In regards to the attached Waste Management Plan, I Claude White being the responsible party have been farming and raising livestock since 1978.

In addition to the enclosed Waste Management Plan, I have discussed alternate water management systems with Mr. Ken Hale and Mr. Mike Gaenwerth (NRCS), Mr. Monte Graham (USDA Soil and Conservation Service) and Mr. Robert Dyke (Marion County Soil and Water). We have come up with a cost estimate of approximately $70,000.00.

Regarding the skills required to perform inspections, I have dealt with livestock waste for over ten years and have updated myself in all new procedures. Also, State NRCS (National Resource Conservation Service) will be doing periodic inspections on practice installation. We also have Western Laboratories Inc.(PO Box 1020 Parma, Id 83660) doing our soil samples.

We feel the required time to complete inspections is approximately thirty hours over a year. There are no alternate testing equipment or facilities required.

As the person doing the inspections I, Claude White, have been dealing closely with Ken Hale (NRCS) in developing an EQUIP Plan. I also am on the Rickreall Water Shed Committee and a member of the Farm Bureau. I will also be working with the Dept. of Agriculture on senate bill 1010 as it comes to our area. Being a full time resident of the property I am on call 24 hours a day.

Sincerely,

Claude White
550 Morrow Rd.
Independence, Or 97351

STATE OF OREGON
DEPARTMENT OF AGRICULTURE

OFFICIAL USE ONLY
41004
8512 $50--8510 $25
Facility I.D. No.:_____
Hydrocode No.:_____

FOR CASHIER'S USE ONLY

GENERAL PERMIT REGISTRATION FOR CONFINED ANIMAL FEEDING OPERATION (CAFO)

RECEIVED
MAY 08 1998
NATURAL RESOURCES DIVISION

NEW APPLICANTS:

New Application Fee	$50
New Management Fee	25
Total	$75

1a. Name and mailing address: Harold White
550 Merrow Rd.
ENT, OR-97351

1b. Assumed business name:
White's Hauling + Farm
Telephone No.: 503-838-3505

2. Location of CAFO facility if different than 1.:

3. Brief description of CAFO facility (see instructions): old Dairy converted To Cow-Calf operation

4a. Number and type of confined animals on hand (see instructions): 90 Beef Cows 60 Heifers for Dairy Replacement.

4b. Number of animals for which the waste handling facilities were designed (see instructions): 160 milk Cows

5. Describe the sources of wastewater generated (see instructions): manure - corn Silage - Rain water

6. Describe the type and size of wastewater and manure collection and storage facilities (see instructions): See map A yellow in color.

7. Describe the manure and wastewater land application system (see instructions): we use manure spreader to distribute in spring & summer.

(Turn page over to complete form)

8. Describe the land available for manure and wastewater application (see instructions): Land is owned by White - waste water is applied to permant pasture and Rye grass - See maps A & B -

9. Do you have a written animal waste management plan? NO But Plans are Being Developed.
(Yes/No)

10. Attach a simple diagram of your CAFO operation, including the confinement facility, all wastewaters and where they go, the storage facilities, and land application area. Also show surface streams, lakes and waterways in the vicinity of the collection, storage, and application areas. (An aerial photograph of your facility with the various units marked on the photo will be accepted in lieu of the diagram.)

I hereby certify that the information included in this application is true and accurate to the best of my knowledge.

Signature: Harold White
Title: Owner
Date: 12-31-97

APPLICATION MUST BE SIGNED AND FEES ATTACHED

RETURN APPLICATION TO:

Oregon Department of Agriculture
Natural Resources Division
635 Capitol Street NE
SALEM OR 97310-0110

NOTE: Oregon Revised Statutes, ORS 468.740, require that any person with a wastewater disposal system must have a permit issued by the DEQ. Liquid manure and wastewater disposal systems used by CAFO facilities, except those that confine for four months or less, are included under that requirement and must have a permit to construct and/or operate the wastewater and liquid manure disposal system, even though the manure is put to beneficial use.

DO NOT COMPLETE THIS APPLICATION IF YOUR OPERATION CONFINES FOR FOUR MONTHS OR LESS. IN THIS CASE A PERMIT IS NOT REQUIRED.

If you have any questions about this application or how it applies to your operation, please contact the Natural Resources Division of the Oregon Department of Agriculture at the address above, or telephone (503) 986-4700.

If you desire some technical advice on your CAFO operation or your wastewater management system, please contact the Natural Resources Division at the same address and telephone number.

NR/CAFO/NR108
FORM 7001
7/95

WHITES HAULING & FARM
550 MORROW RD. 503-838-3505
INDEPENDENCE, OR 97351

12156

Date 12-31-97

96-7043/3232
760

Pay to the Order of Oregon Dept of AG $ 75 00/100

Seventy Five and no/100 Dollars

First Security Bank.
First Security Bank of Oregon
P.O. Box 489
Dallas, Oregon 97338
First Line 1-800-574-0055

For Confine Animal Permit

Harold White

⑆323270436⑆ 760 03166 45⑈ 2156 ⑈0000007500⑈

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FOR DEPOSIT ONLY
TREASURER, STATE OF OREGON
DEPT. OF AGRIC. #5000008000
U.S. BANK - LADD & BUSH
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[illegible]
123000220

April 30, 1998

ANIMAL WASTE MANAGEMENT SYSTEM PLAN

FOR THE

CLAUDE WHITE BEEF OPERATION

POLK COUNTY, OREGON

Name of Land Owner/operator: Claude White

Street Address: 580 Morrow Road

City: Independence, OR 97351

Phone: (503) 838-3505

Assisted by: Monte Graham

General

The Claude White Waste Management System has been designed to manage waste generated by the beef operation in a manner that prevents or minimizes degradation of air, soil, animal, plant and water resources and protects public health and safety. The system has been planned to preclude discharge of pollutants to surface or ground water and recycle waste through soil and plants to the fullest extent practicable.

The existing condition is a beef operation in a old dairy facility. This included two silage storage areas and a earthen manure pit that was scraped to from a free stall barn. Several areas of concrete that have animals utilizing during the winter months are not roofed. Prior to the winter of 1997-1998 many roof areas were not guttered. Most of these areas are now guttered. The nutrient utilization area is 87.8 acres of farm land which is used to produce hay-silage and corn double crop, pasture and beans or other row crops. Manure application has been spring cleaning of the manure pit and application by manure spreader. Silage runoff has been uncollected. Much of the farm land is subject to flooding by Rickreall Creek. The farm land is sloped to the South East which is away from Rickreall Creek. There are 2 areas that allow Creek Water in and some runoff out. Both of these areas have berms to prevent deep cut erosion when the Creek recedes. The farmland has water rights from Rickreall Creek and is used each summer to grow the crops. Livestock on the farm have been cow-calf pairs, feeder steers and/or heifers,

including dairy steers and heifers. The livestock is confined to the free stall barn most of the time. The exercise areas is are used in the spring and summer for the cow-calf pairs mostly. The total livestock number on the farm is up to 150 animals.

Claude White requested assistance from the Natural Resources Conservation Service to write a water quality management plan that would bring the farm into environmental compliance and maximize the use of the nutrients of the animal manure. Decisions were made on the management of the silage and the management of the manure. The South silage pit would be abandoned. The North silage pit would have the liquid leachate contained and piped to a storage tank for transfer off farm by truck or applied to the land when the soil and weather conditions permit. The earthen manure pit would be abandoned after spring 1998 cleaning. The free stalls would be removed to change the barn to loose housing with the manure as a dry pack in the barn. Using straw in the dry pack would allow all the manure to be handled dry. The utilization land area remains the same at 87.8 acres. Additional well drained land is available adjacent to the farm across Morrow Road.

Management Plan

The livestock numbers will be 40-400lb feeders, 30-600lb feeders, 30-800lb feeders and 50 cows that average 900lbs. This equates to 103-1,000 pound animals.

The loose housing barn is approximately 120 feet by 120 feet. The required storage time for solids is 123 days. This would require an area 120 feet by 93 feet if the dry pack is 3 feet deep. The present barn area 120 feet by 120 feet would have a storage time of 159 days. If the dry pack in the existing barn area of 120 feet by 120 feet is allowed to get to 4 foot deep the storage time would increase 53 days, with a storage time of 212 days would be achieved with the 120 feet by 120 feet barn area.

The silage leachate will be collected as show on the drawing. This is the only liquid runoff that needs to be contained. The silage pile will be covered with plastic to eliminate rainwater from entering the silage. The plastic will lay in a trough around the silage pile so rainwater can be collected and discharged by pipe to the field. The leachate will be collected by minimum of 4 inch sewer pipe placed under the stack when the silage is brought in. The leachate will be piped to a 10,000 gallon tank. The tank will be monitored having a visual indicator to tell when the tank is getting full. The tank will be emptied as required to prevent any overflow. The leachate will be hauled off farm if land application on the

farm is not practical. The total leachate expected during the 123 day storage period is 58,000 gallons.

Crops to be raised are Alfalfa, Corn for silage or canary/ with double crop with grass, Grass/Legume pasture and Ryegrass for hay, silage and pasture. The crops are rotated on the farm. If the crops are grown on an equal basis, balanced on phosphorus, the land requirement would be 58 acres. Also balancing on Phosphorus the acreage requirement for grazing is 32 acres. See attached Animal Waste Management Worksheet. This is based on a conservative crop production. It is also based on a corn acreage of 14 acres which is below normal years of production. It is recommended that the soil be tested for exact fertilizer needs. It is also recommended the manure be tested prior to application. See Waste Utilization and Nutrient Management practice standards. The best most economical method is to balance the phosphorus application with the manure and add what additional nitrogen is need by commercial fertilizer. Adding the grazed acres to the crop acres required (32 + 58) gives a total of 90 acres required to balance on phosphorus. The total acres available are 87.8. This would be determined as equal based on all factors until samples are taken to determine exact values.

The crop land has 6 soil types, Amity Silt Loam, Coburg Silty Clay Loam, Cove Silty Clay Loam-Thick Surface, Malabon Silty Clay Loam, Woodburn Clay Loam-0 to 3 percent slopes, and Woodburn Clay Loam-3 to 12 percent slopes. The two predominant soils are Woodburn and Cove. The Woodburn soil is a fairly well drain soil that has a winter ground water table that is suitable for most crops. This soil is where the alfalfa is presently grown. The Cove soil is a poorly drained soil that will have a high winter water table and is subject to flooding. This is presently where the corn and ryegrass double crop is grown. Due to the wetness of this soil it will be difficult to double crop. Management methods must be used to accommodate the soil. This will include short growing corn, relay cropping or growing sudan grass when it is too late to plant the corn.

The existing Forest Buffer along Rickreall Creek will be maintained and enhanced. The existing forest hedge row along the west field boundary will be maintained.

Implementation in summer of 1998

The South silage pit needs to be cleaned and abandoned. The earthen manure pit is to be cleaned and abandoned. All concrete areas that now do not have roof and will have animals on the concrete will need to be roofed. This may happen over several years as required. All roof runoff water that mixes with manure will be guttered or piped to the field in such

a manner that the clean roof water will not mix with any manure. Free stalls will be removed as required to provide sufficient loose housing and dry pack build up to meet storage time and any weather conditions that may require storage over 123 days. The silage storage and leachate collection system will need to be installed.

Conservation Practices of the Conservation Plan

The system will be installed by the Fall of 1998. Some practices will begin implementation in the spring of 1999, such as soil and manure sampling.

Waste Management System

Waste Utilization

Nutrient Management

Waste Storage Facility
Above ground tank for leachate storage
Loose Housing Barn for dry pack

Roof Runoff Management

Prescribed Grazing

Pasture and Hayland Planting (when needed)

Grade Stabilization Structure

Conservation Crop Rotation

Cover & Green Manure Crop

Riparian Forest Buffer

Attached are the Practice Specifications and Operation and Maintenance.

At this date, May 3, 1998, the NRCS is doing a priority on the EQIP sign ups. This plan will be moved into the FOCS system after completion of the EQIP priorities.

I Certify that I have read this plan and understand its contents and requirements.

Landowner/Operator Signature — Date: 5/6/98

This plan has been prepared by:

Monte E. Graham
Preparer's Signature — Date: 5-4-98

This Job Class II Waste Management System Plan is Approved by:

Monte E. Graham
Approval Signature — Date: 5-4-98

IRRIGATION SCHEDULE

MONTH	NET MONTHLY IRRIGATION REQUIREMENTS (INCHES)	CONSUMPTIVE USE RATE (IN/DAY)	IRRIGATION FREQUENCY (DAYS)	AVERAGE NUMBER OF IRRIGATIONS NEEDED
APRIL	0.00	0.04	31	0.0
MAY	1.93	0.13	31	0.5
JUNE	4.39	0.18	31	0.5
JULY	6.07	0.22	29	1.0
AUGUST	5.16	0.19	31	1.0
SEPTEMBER	1.56	0.13	31	0.0
OCTOBER	0.00	0.07	31	0.0
NOVEMBER	0.00	0.01	31	0.0

OPERATION AND MAINTENANCE

A properly operated and maintained irrigation system is an asset to your farm. Your system was designed and installed to apply irrigation water to meet the needs of the crops without causing erosion or runoff. The estimated life span of your system is at least 10 years. The life of system can be assured and usually increased by developing and carrying out a good operation and maintenance program.

The following are a few recommendations to help you develop a operation and maintenance plan;

*Only operate the system when needed to furnish water for crop needs. The preceding irrigation schedule can be used as a guide to determine when to irrigate. The attached chart for evaluating soil moisture can also be used to help determine when to irrigate.

*Check to make sure that valves, sprinkler heads, and other mechanical parts of the system are checked periodically and worn or damaged parts are replaced as needed.

*Periodically inspect borders, furrows and corrugates. Maintain them as necessary so they may serve their intended purpose.

*Maintain all pumps, screens, filters, piping, valves and other electrical and mechanical equipment in accordance with the manufacturers recommendations.

*Protect equipment from livestock damage and keep livestock out of the area being irrigated.

*During non-seasonal use, drain pipelines and secure and/or place moveable parts of the system in a protected area.

If you need help developing your operation and maintenance plan, contact your local Natural Resources Conservation Service office.

IRRIGATORS NAME: CLAUDE WHITE
ASSISTED BY: MONTE GRAHAM

DATE: 05-04-1998

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

IRRIGATION WATER MANAGEMENT WORKSHEET

CROP INFORMATION

Climatic Zone Name	CORVALLIS
Field Number	4
Crop Irrigated	ALFALFA
Acres Irrigated	15
Normal Rooting Depth	60 IN
Moisture Allowed Deficiency	50 %
Peak Daily Crop Requirements	0.14 CFS OR 61 GPM
Annual Crop Requirements	29.22 AcIn/YR

SOILS INFORMATION

County	POLK
Basic Soil Series	77A WOODBURN SILT LOAM
Capability Class	NIRR-2W IRR-2W
Allowable Soil Loss Tolerance, T	5
Wind Erodability Group, WEG	UNKNOWN
Total Available Water	12.60 IN
Basic Intake Rate	0.30 IN/HR
Average Soil Depth	60 IN

Available Water Holding Capacity-

INCREMENTAL DEPTH, INCHES	WATER HOLDING CAPACITY, IN/IN
60.00	0.21

IRRIGATION SYSTEM MANAGEMENT INFORMATION

Irrigation System	SPRINKLER
Source of Water	STREAM
Estimated System Efficiency	65 %
Root Zone Managed	60 IN
Allowed Moisture Deficiency	50 %
Sprinkler Application Rate	0.30 IN/HR
Irrigation Set Time	32.3 HRS
Gross Application	9.69 IN
Net Application	6.30 IN

A Flow of 280 GPM or 0.6 CFS is needed for irrigating 8 hours per day 7 days per week.

IRRIGATION SCHEDULE

MONTH	NET MONTHLY IRRIGATION REQUIREMENTS (INCHES)	CONSUMPTIVE USE RATE (IN/DAY)	IRRIGATION FREQUENCY (DAYS)	AVERAGE NUMBER OF IRRIGATIONS NEEDED
MAY	0.00	0.06	31	0.0
JUNE	2.00	0.12	31	0.5
JULY	5.75	0.21	17	1.5
AUGUST	3.29	0.18	20	1.0

OPERATION AND MAINTENANCE

A properly operated and maintained irrigation system is an asset to your farm. Your system was designed and installed to apply irrigation water to meet the needs of the crops without causing erosion or runoff. The estimated life span of your system is at least 10 years. The life of system can be assured and usually increased by developing and carrying out a good operation and maintenance program.

The following are a few recommendations to help you develop a operation and maintenance plan;

*Only operate the system when needed to furnish water for crop needs. The preceding irrigation schedule can be used as a guide to determine when to irrigate. The attached chart for evaluating soil moisture can also be used to help determine when to irrigate.

*Check to make sure that valves, sprinkler heads, and other mechanical parts of the system are checked periodically and worn or damaged parts are replaced as needed.

*Periodically inspect borders, furrows and corrugates. Maintain them as necessary so they may serve their intended purpose.

*Maintain all pumps, screens, filters, piping, valves and other electrical and mechanical equipment in accordance with the manufacturers recommendations.

*Protect equipment from livestock damage and keep livestock out of the area being irrigated.

*During non-seasonal use, drain pipelines and secure and/or place moveable parts of the system in a protected area.

If you need help developing your operation and maintenance plan, contact your local Natural Resources Conservation Service office.

IRRIGATORS NAME: CLAUDE WHITE
ASSISTED BY: MONTE GRAHAM

DATE: 05-04-1998

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

IRRIGATION WATER MANAGEMENT WORKSHEET

CROP INFORMATION

Climatic Zone Name---------- CORVALLIS
Field Number---------- 2,3
Crop Irrigated---------- CORN SILAGE
Acres Irrigated---------- 45
Normal Rooting Depth---------- 48 IN
Moisture Allowed Deficiency---------- 50 %
Peak Daily Crop Requirements---------- 0.40 CFS OR 182 GPM
Annual Crop Requirements---------- 16.62 AcIn/YR

SOILS INFORMATION

County---------- POLK
Basic Soil Series---------- 7 BASHAW CLAY
Capability Class---------- NIRR-4W IRR-4W
Allowable Soil Loss Tolerance, T---------- 5
Wind Erodability Group, WEG---------- UNKNOWN
Total Available Water---------- 9.24 IN
Basic Intake Rate---------- 0.20 IN/HR
Average Soil Depth---------- 60 IN

Available Water Holding Capacity-

INCREMENTAL DEPTH, INCHES	WATER HOLDING CAPACITY, IN/IN
36.00	0.15
24.00	0.16

IRRIGATION SYSTEM MANAGEMENT INFORMATION

Irrigation System---------- SPRINKLER
Source of Water---------- STREAM
Estimated System Efficiency---------- 65 %
Root Zone Managed---------- 48 IN
Allowed Moisture Deficiency---------- 50 %
Sprinkler Application Rate---------- 0.20 IN/HR
Irrigation Set Time---------- 28.1 HRS
Gross Application---------- 5.63 IN
Net Application---------- 3.66 IN

A Flow of 417 GPM or 0.9 CFS is needed for irrigating 16 hours per day 7 days per week.

FEEL AND APPEARANCE GUIDE FOR SOIL MOISTURE

Available Soil Moisture Remaining	Feel or Appearance of Soil: Loamy Sand Coarse Texture	Sandy Loam Moderately Coarse	Loam & Silt Loam Medium Texture	Clay Loam or Silty Clay Loam, Fine & Very Fine Texture
0-25%	Dry, loose, single grained, flows thru fingers.	Dry, loose, flows thru fingers.	Powdery dry, sometimes slightly crusted but easily broken down into powdery condition.	Hard baked, cracked, sometimes has loose crumbs on surface.
25-50%	Appears to be dry, will not form a ball* with pressure.	Appears to be dry, will not form a ball*.	Somewhat crumbly but holds together from pressure.	Somewhat pliable, will ball* under pressure.
50-75%	Appears to be dry, will not form a ball* with pressure.	Tends to ball* under pressure but seldom holds together.	Forms a ball* somewhat plastic, will sometimes slick slightly with pressure.	Forms a ball*, ribbons out between thumb and forefinger.
75-field capacity (100%)	Tends to stick together slightly, sometimes forms a very weak ball* under pressure.	Forms weak ball*, breaks easily will not stick.	Forms a ball*, is very pliable slicks readily is relatively high in clay.	Easily ribbons out between fingers, has slick feeling.
At field capacity (100%)	Upon squeezing, no free water appears on soil but wet outline of ball* is left on hand.	Upon squeezing, no free water appears on soil but wet outline of ball* is left on hand.	Upon squeezing, no free water appears on soil but wet outline of ball* is left on hand.	Upon squeezing, no free water appears on soil but wet outline of ball* is left on hand.

* - Ball is formed by squeezing a handful of soil very firmly.

If you need further assistance in evaluating available soil moisture, contact your local Natural Resource Conservation Service office.

ANIMAL WASTE MANAGEMENT
PLANNING WORKSHEET
FOR

Claude White

Location- Independence, Oregon
Assisted by- Monte Graham
Date- 04-27-1998

NUMBER OF ANIMALS, AVERAGE WEIGHT AND STORAGE PERIODS
REF: NRCS Agricultural Waste Management Field Handbook Chapter 4 & 10

DESCRIPTION	NUMBER	WEIGHT LBS	CONFINEMENT START	CONFINEMENT END	CONFINEMENT DAYS	DAYS GRAZED	DAYS STORAGE LIQUIDS	DAYS STORAGE SOLIDS
FEEDER	40	400	OCT	APR	212	153	153	123
FEEDER(High Energy Diet	30	800	JAN	DEC	365	0	153	123
YEARLING	30	600	JAN	DEC	365	0	153	123
COW	50	900	OCT	APR	212	153	153	123

DAILY NUTRIENTS AND VOLUMES PRODUCED **REF: AWMFH Chapter 4**
NRCS Animal Waste Management System(PS 312), Job Class- II 103 AUs

DESCRIPTION	1000 LB ANIMAL UNITS(AU)	CF/D/AU MANURE	LB/DAY/AU N	LB/DAY/AU P	LB/DAY/AU K
FEEDER	16.00	0.95	0.31	0.11	0.24
FEEDER(High Energy Diet)	24.00	0.82	0.30	0.09	0.21
YEARLING	18.00	0.93	0.30	0.10	0.20
COW	45.00	1.00	0.33	0.12	0.26
TOTALS>>>>>>>>>>>>>>>>>>	103.00	0.94	0.31	0.11	0.23

BEDDING AND SEPARATOR FACTORS **REF: AWMFH Chapter 9**

TYPE OF BEDDING- Chopped Straw
DAILY BEDDING FACTOR- 1.57 CF/DAY/AU

PERCENT OF WASTE TREATED AS A SOLID- 100 %

Landowner/Operator- Claude White
Location- Indepen[illegible]nce, Oregon
Assisted by- Monte Graham

Date- 04-27-1998

VOLUME OF WASH WATER

REF: AWMFH Chapter 10

DESCRIPTION	RANGE	SELECTED GAL/DAY	SELECTED CF/DAY
Miscellaneous Equipment.....	(25-35Gal or 3-5CF /Wash)		
Pipelines.....	(75-150Gal or 10-20CF /Wash)		
Holding Area.....	(500-1200Gal or 70-160CF /Wash)		

Total Daily Volume= 2 Washes X Total Selected Amount= 0 0.00

RAINFALL RUNOFF AREA CONTRIBUTING TO STORAGE

DESCRIPTION	AREA IN SQUARE FEET
Roof.....	0
Concrete Slab, Scraped Daily, (Y/N)- YES	0
Unsurfaced Lot.....	0
Total-	0 SF

Does feed seepage enter liquid storage facility (Y/N)-? YES

CLIMATIC AND HYDROLOGIC DATA

REF: AWMFH Chapter 10

CLIMATIC STATION- N WILLAMETTE EXP STA
25YR-24HR STORM RAINFALL- 4.00 Inches

Month	Average Monthly in Inches Precipitation	Evaporation	% Lot Runoff Factors Concrete	Unpaved
JAN	6.23	0.48	100	20
FEB	4.38	0.81	100	15
MAR	3.91	1.57	100	10
APR	2.71	2.39	100	10
MAY	2.18	3.74	100	10
JUN	1.73	4.33	100	10
JUL	0.67	5.40	100	0
AUG	0.96	4.93	100	10
SEP	1.81	3.36	100	15
OCT	3.13	1.71	100	15
NOV	6.08	0.76	100	20
DEC	7.13	0.43	100	15
ANNUAL	40.92	29.91		

Landowner/Operator- Claude White
Location- Indepe nce, Oregon
Assisted by- Monte Graham

Date- 04-27-1998

RAINFALL RUNOFF ENTERING LIQUID STORAGE FACILITY

	<<<<<<<<<<<<<<<<<<<RUNOFF IN CUBIC FEET>>>>>>>>>>>>>>>>>>>				
Month	OSF Roof	OSF Concrete Slab	* 11,160SF Unsurfaced Lot	OSF Storage Surface	Monthly Totals
JAN	0	0	1,159	0	1,159
FEB	0	0	611	0	611
MAR	0	0	364	0	364
APR	0	0	252	0	252
MAY	0	0	203	0	203
JUN	0	0	161	0	161
JUL	0	0	0	0	0
AUG	0	0	89	0	89
SEP	0	0	252	0	252
OCT	0	0	437	0	437
NOV	0	0	1,131	0	1,131
DEC	0	0	995	0	995

* - Unsurfaced lot area includes surface area of solid stacking facility.

TOTAL MONTHLY INFLOWS ENTERING LIQUID STORAGE FACILITY

	<<<<<<<<<<<<<<<<<<<<<<<<INFLOW IN CUBIC FEET>>>>>>>>>>>>>>>>>>>>>>>>					
Month	Surface Runoff	Evaporation	Seepage	Wash Water	Manure	Totals
JAN	1,159	0	689	0	0	1,848
FEB	611	0	623	0	0	1,234
MAR	364	0	689	0	0	1,053
APR	252	0	667	0	0	919
MAY	203	0	427	0	0	630
JUN	161	0	413	0	0	574
JUL	0	0	427	0	0	427
AUG	89	0	427	0	0	516
SEP	252	0	413	0	0	666
OCT	437	0	689	0	0	1,126
NOV	1,131	0	667	0	0	1,798
DEC	995	0	689	0	0	1,684
ANNUAL	5,653	0	6,821	0	0	12,474

Total Liquids Entering Liquid Storage Facility Based on 153 Day Storage-

Roof, Slab and Lot Runoff=	4,284 CF or	0.1 AF
Seepage=	3,402 CF or	0.1 AF
Washwater=	0 CF or	0.0 AF
Manure=	0 CF or	0.0 AF
Existing Storage=	0 CF or	0.0 AF
Existing Storage Surface Area=	0 SF or	0.0 AC

Landowner/Operator- Claude White
Location- Indepe nce, Oregon
Assisted by- Monte Graham

Date- 04-27-1998

DESCRIPTION OF LIQUID WASTE MANAGEMENT SYSTEM

STORAGE METHOD>>> Tank(Covered)

Diameter of Tank=	8 ft.
Depth of Tank=	ft.
Is Tank Covered, (Y/N)?-	YES
Volume of Liquids to Store=	0 CF
Volume of Facility=	0 CF

APPLICATION METHOD>>> Sprinkling
Moderately Well Drained Soil Drainage Class
Location- Between Coastal and Cascade Mountains

NUTRIENT ACCOUNTING FOR LIQUIDS>>> REF: AWMFH Chapter 11

Loss Category	Nitrogen Remaining Percent	Nitrogen Remaining Pounds 0	Phosphorous(P2O5) Remaining Percent	Phosphorous(P2O5) Remaining Pounds 0	Potassium(K2O) Remaining Percent	Potassium(K2O) Remaining Pounds 0
Storage	80	0	90	0	90	0
Application	75	0	100	0	100	0
Denitrification	87	0	100	0	100	0

MANAGEMENT CRITERIA FOR Sprinkling APPLICATION OF LIQUIDS>>>

Sprinkler Flowrate=	300 GPM
Wetted Diameter=	250 FEET
Application Rate=	0.59 INCHES/HOUR

PHOSPHOROUS Concentration in Storage= 0 PPM OR 0.00 LBS/1000 GAL

To apply 93,305 gallons of liquids generated from the operation, it will take approximately 5 hours of pumping annually. Based on applying PHOSPHOROUS at the agronomic rate, use the application depths, set times and travel rates listed below for each crop:

CROP	Application (NO)	Application (LBS)	Application (INCHES)	Set Time (HOURS)	Travel Rate (FEET/MINUTE)
Alfalfa	1.0	70	0.00	0.0	0.0
Corn, Silage	1.0	114	0.00	0.0	0.0
Grass/Legume	1.0	62	0.00	0.0	0.0
Rye Grass	1.0	61	0.00	0.0	0.0

Landowner/Operator- Claude White
Location- Indepe nce, Oregon
Assisted by- Monte Graham

Date- 04-27-1998

DESCRIPTION OF SOLIDS WASTE MANAGEMENT SYSTEM

STORAGE METHOD>>> Solids Storage(Unroofed)

Length of Facility=	93 ft.
Width of Facility=	120 ft.
Wall Height of Facility=	2 ft.
Total Stacking Height of Facility=	2 ft.
Side Slopes of Stack=	2 : 1
Is the Facility Covered, (Y/N)?-	NO
Volume of Solids to Store=	21,829 CF
Volume of Facility=	21,840 CF

APPLICATION METHOD>>> Broadcast
Moderately Well Drained Soil Drainage Class
Location- Between Coastal and Cascade Mountains

NUTRIENT ACCOUNTING FOR SOLIDS>>> REF: AWMFH Chapter 11

Loss Category	Nitrogen Remaining Percent	Nitrogen Remaining Pounds 8,799	Phosphorous(P2O5) Remaining Percent	Phosphorous(P2O5) Remaining Pounds 6,860	Potassium(K2O) Remaining Percent	Potassium(K2O) Remaining Pounds 7,770
Storage	50	4,399	65	4,459	55	4,273
Application	80	3,519	100	4,459	100	4,273
Denitrification	87	3,062	100	4,459	100	4,273

MANAGEMENT CRITERIA FOR Broadcast APPLICATION OF SOLIDS>>>

Tractor Spreader Capacity=	160 BUSHELS or 199 CF
Width of Application=	15 FEET
PHOSPHOROUS Concentration in Storage=	1,481 PPM OR 9.24 LBS/100CF

To apply 48,241 cubic feet of solids generated from the operation, it will take approximately 242 trips annually using a tractor spreader. Based on applying PHOSPHOROUS at the agronomic rate, use the application depths, travel lengths and loads per acre listed below for each crop:

CROP	Application (NO)	(LBS)	(INCHES)	Travel Length (FEET) per Load	Loads per Acre (NO)
Alfalfa	1.0	70	0.21	763	3.8
Corn, Silage	1.0	114	0.34	468	6.2
Grass/Legume	1.0	62	0.18	861	3.4
Rye Grass	1.0	61	0.18	876	3.3

Landowner/Operator- Claude White
Location- Indepe[illegible]nce, Oregon
Assisted by- Monte Graham

Date- 04-27-1998

DESCRIPTION OF WASTE MANAGEMENT FOR GRAZING SYSTEM

STORAGE METHOD>>> None (grazing)

APPLICATION METHOD>>> Grazing
Moderately Well Drained Soil Drainage Class
Location- Between Coastal and Cascade Mountains

NUTRIENT ACCOUNTING FOR GRAZING>>> REF: AWMFH Chapter 11

Loss Category	Nitrogen Remaining Percent	Nitrogen Remaining Pounds 3,031	Phosphorous(P205) Remaining Percent	Phosphorous(P205) Remaining Pounds 2,506	Potassium(K20) Remaining Percent	Potassium(K20) Remaining Pounds 2,865
Storage	100	3,031	100	2,506	100	2,865
Application	85	2,576	100	2,506	100	2,865
Denitrification	87	2,241	100	2,506	100	2,865

CROP INVENTORY N-Nitrogen P2O5-Phosphorous K2O-Potassium

REF: AWMFH Chapter 6

Crops	Yield Units	Target Yield	Nutrients Utilized Pounds/Acre N	P205	K20	Allowable Application Inches/Acre Liquid	Solid
Alfalfa	(Ton)	7	315.0	70.5	315.5	1.$I	0.21
Corn, Silage	(Ton)	10	220.0	114.4	262.7	1.$I	0.34
Grass/Legume	(Ton)	5	169.5	62.9	207.3	1.$I	0.19
Rye Grass	(Ton)	5	167.0	61.8	171.1	1.$I	0.18

UTILIZATION ACRES BASED ON PHOSPHOROUS

Crop	Percent to be Applied / Acres Liquids	Solids	Grazing
Alfalfa	23 / 0	23 / 15	23 / 8
Corn, Silage	37 / 0	37 / 14	37 / 8
Grass/Legume	20 / 0	20 / 14	20 / 8
Rye Grass	20 / 0	20 / 14	20 / 8
TOTALS>>>>>>>>>>>>>>>>>>>>>>>>	100 / 0	100 / 58	100 / 32

Landowner/Operator- Claude White
Location- Independence, Oregon
Assisted by- Mont Graham

Date- 04-27-1998

NUTRIENTS TO BE UTILIZED AND VALUE IN DOLLARS PER POUND

Nutrient Form	Nutrients in Pounds Nitrogen	Phosphorous(P205)	Potassium(K20)
Liquid-	0	0	0
Solid-	3,062	4,459	4,273
Grazing-	2,241	2,506	2,865
TOTAL>>>>>>>>>>>>>>>	5,303	6,966	7,138
Nutrient Value>>>>>>	$0.30/Lb	$0.38/Lb	$0.18/Lb

NUTRIENT MANAGEMENT COSTS AND NUTRIENT BALANCE

System Life = 10 YEARS
Annual Percentage Rate = 8 %
Fertilizer Application Cost = $6.25 /Acre
Manure Application Cost = $20.00 /Acre

Utilization Area Acres	Cost Savings $/Yr	Breakeven Cost $/Life	Nutrients Utilized Lbs N	P205	K20	Nutrient Balance Lbs N	P205	K20
54	$3,722	$24,975	11782	4179	12923	6479	-2786	5784
72	$4,004	$26,867	15709	5572	17230	10406	-1393	10092
****90	$4,286	$28,759	19637	6966	21538	14333	0	14399
108	$4,039	$27,099	23564	8359	25845	18261	1393	18707
126	$3,791	$25,439	27491	9752	30153	22188	2786	23014

NOTE: Negative values under Nutrient Balance indicate excess nutrients available. Positive values under Nutrient Balance indicate additional nutrients may be needed to meet target yields.

NUTRIENT APPLICATION CALENDAR

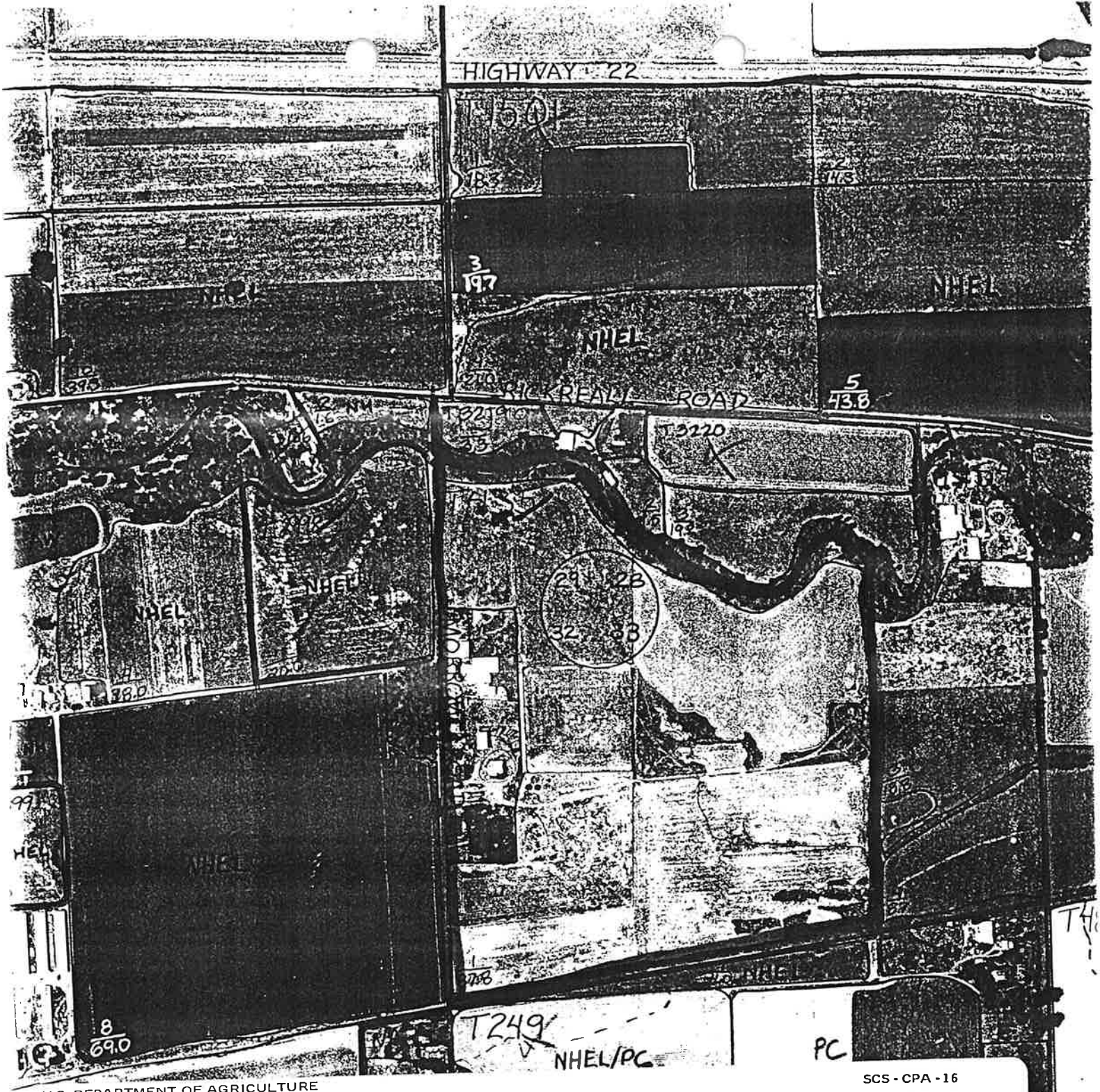
N - Application Not Recommended
Y - Application Recommended

Fm= 0.8 Fs Liquids= 1.0 Fs Solids= 0.85 Fl= 1.0
Fn= 1.0 Fa Liquids= 0.9 Fa Solids= 0.85 Lf= 0 Ef= 0

MONTH>>>>>	---JAN---				--FEB--				----MAR----				----APR----			
WEEK>>>>>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
APPLY>>>>>	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

MONTH>>>>>	------MAY-----							----JUN----							------JUL-----							----AUG----					
WEEK>>>>>	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
APPLY>>>>>	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

MONTH>>>>>	----SEP----						------OCT-----							----NOV----							----DEC----					
WEEK>>>>>	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
APPLY>>>>>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

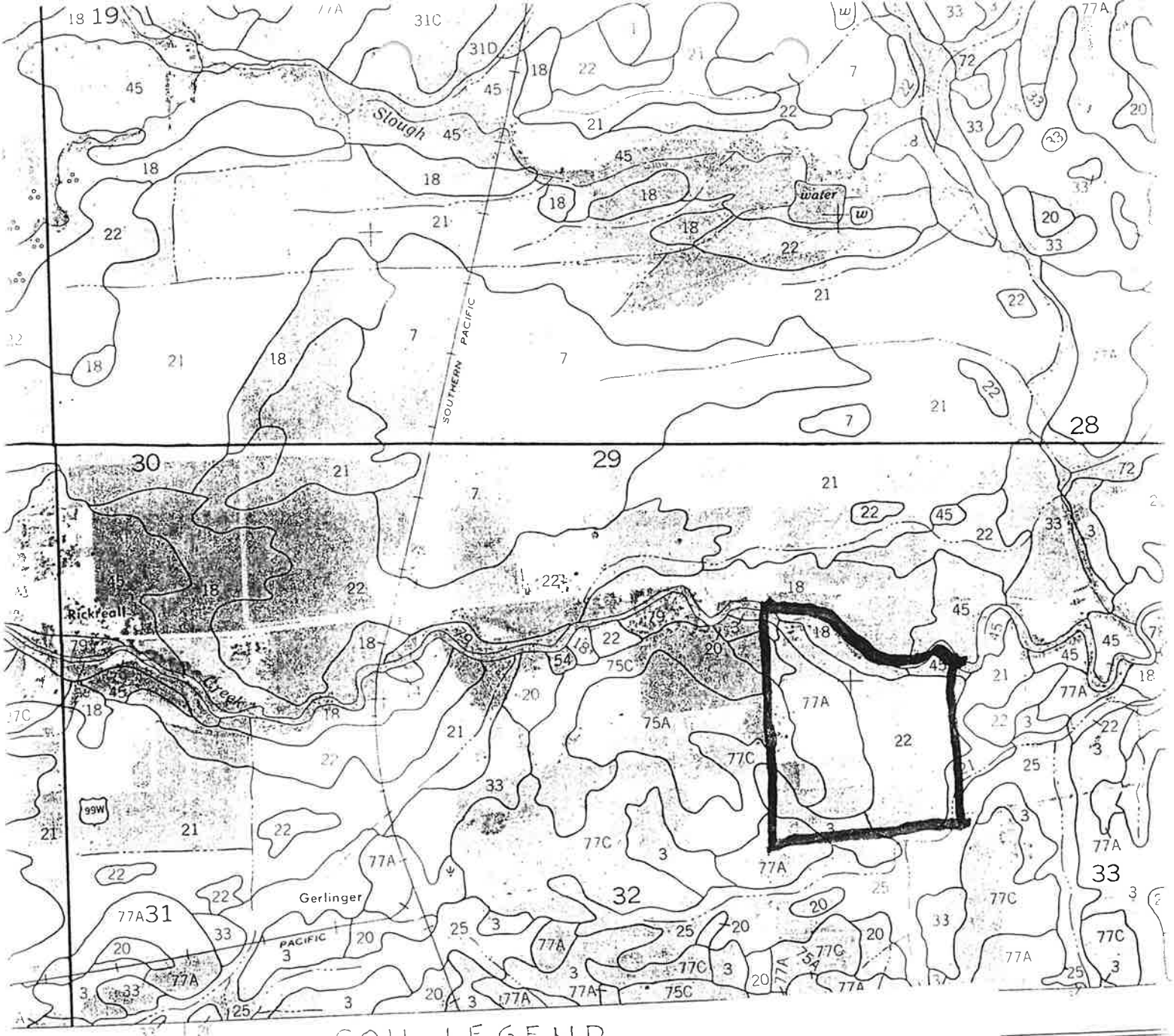


U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SCS - CPA - 16
2 - 81

CONSERVATION PLAN MAP

Owner Claude White Operator Claude White
County Polk State Oregon Date 4-30-98
Approximate acres 110 Approximate scale 1"=660'
Cooperating with Polk Soil and Water Conservation District
Plan identification Photo number
Assisted by Monte Graham USDA Soil Conservation Service



SOIL LEGEND

3 = AMITY SILT LOAM, 18 COBURG SILTY CLAY LOAM
12 = COVE SILTY CLAY LOAM, THICK SURFACE
45 = MALABON SILTY CLAY LOAM

000

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SCS-CPA-015
12-85

SOIL MAP

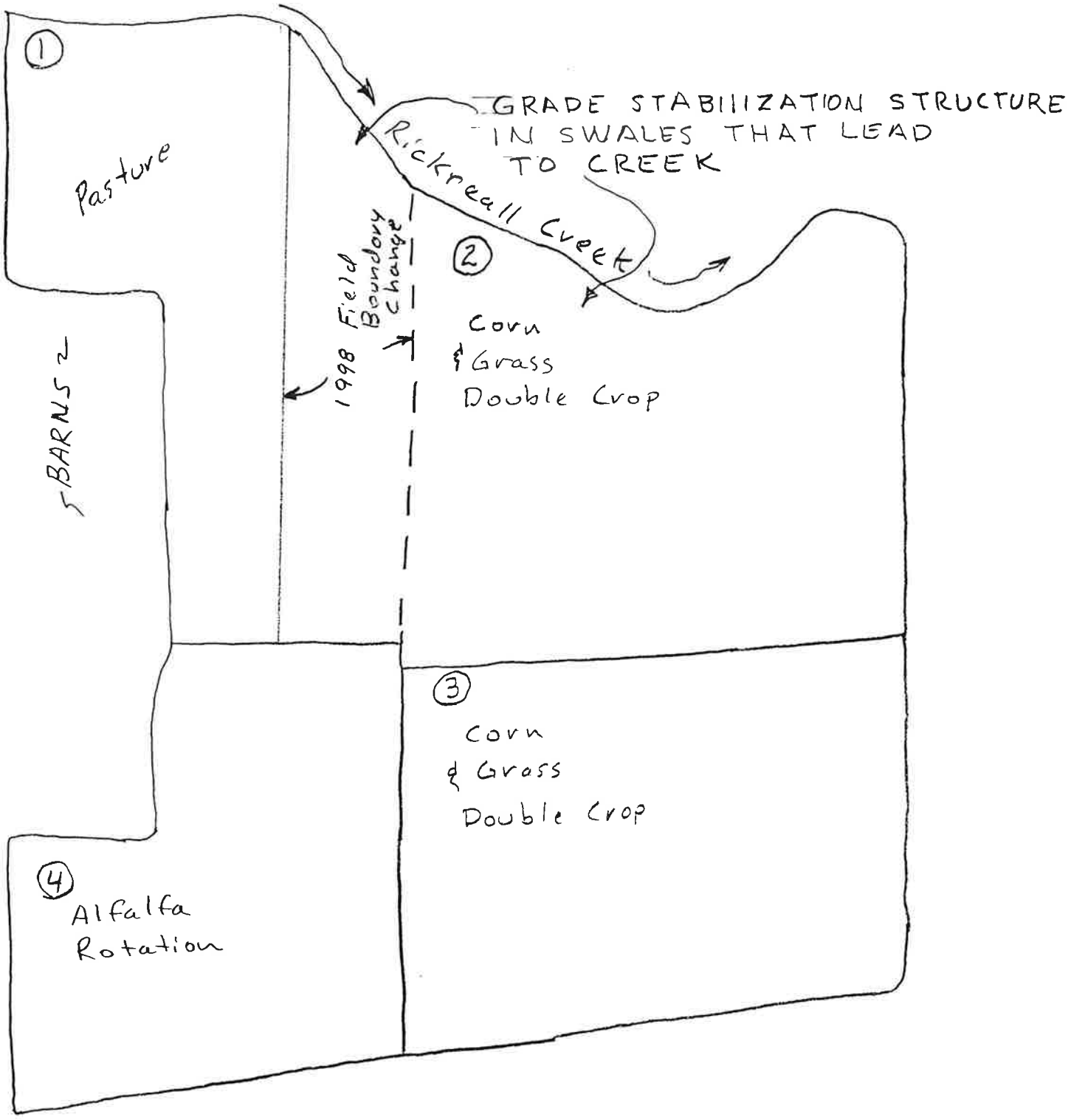
Owner Claude White Operator Claude White
County Polk State Oregon
Soil survey sheet (s) or code nos. 3 Aproximate scale 1:20,000

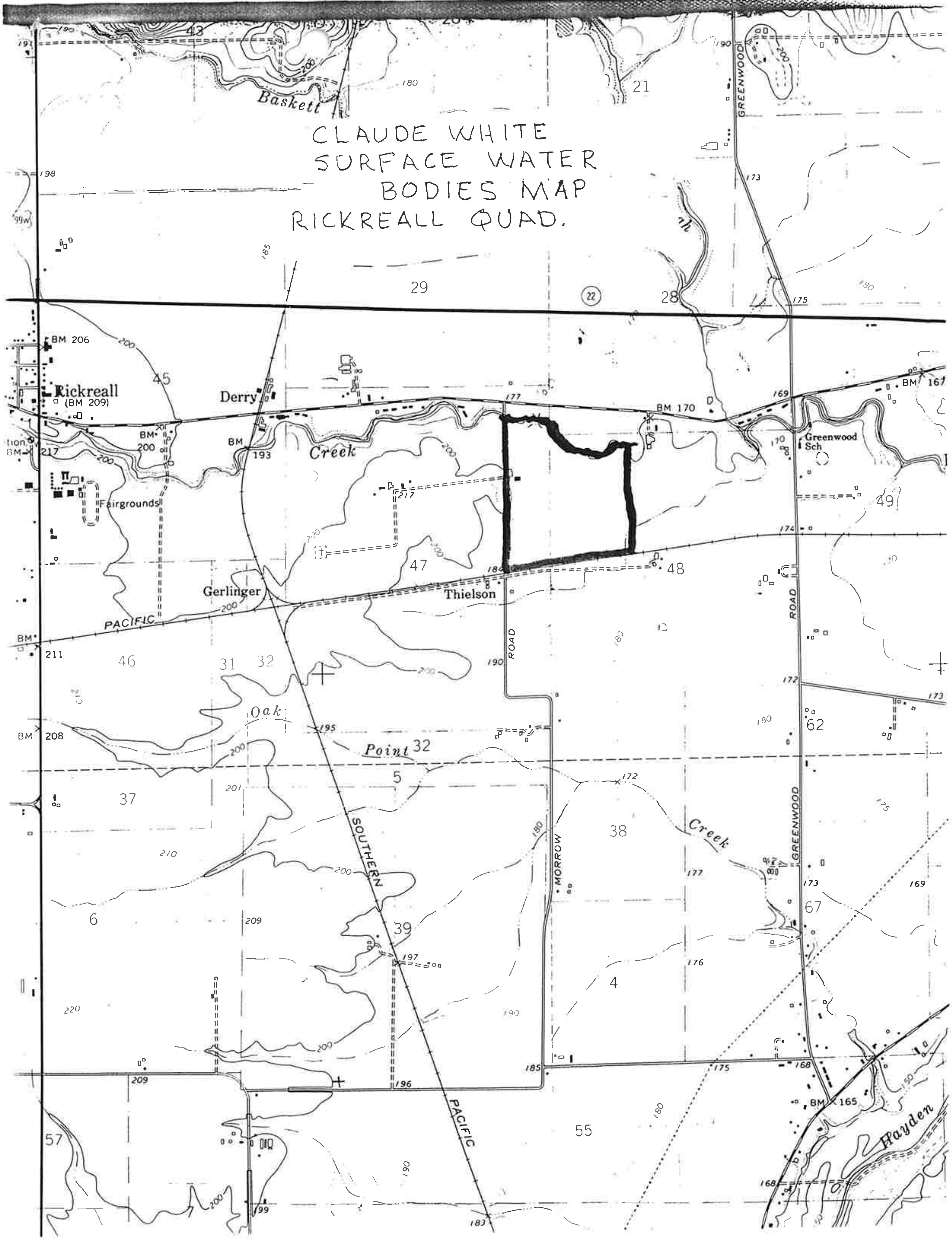
N

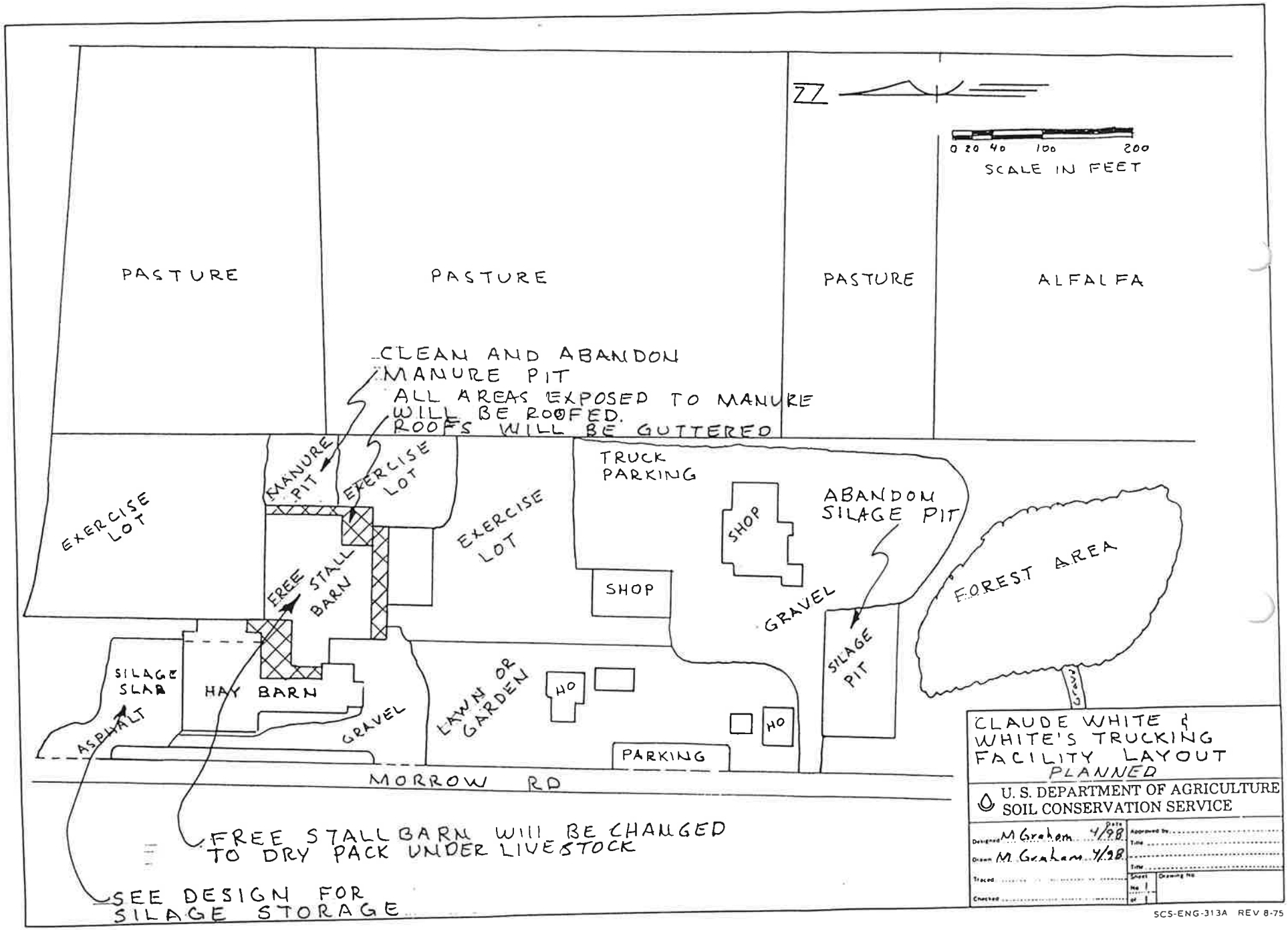
Prepared by U. S. Department of Agriculture, Soil Conservation Service cooperating with Polk Soil and Water Conservation District

77A = WOODBURN SILT LOAM, 0 to 3 PERCENT SLOPES
77C = WOODBURN SILT LOAM, 3 to 12 PERCENT SLOPES

CLAUDE WHITE
FARM FIELD MAP




CLAUDE WHITE
SURFACE WATER
BODIES MAP
RICKREALL QUAD.
Baskett
GREENWOOD
Rickreall
(BM 209)
BM 206
Derry
BM 170
BM 167
Creek
Greenwood Sch
Fairgrounds
Gerlinger
Thielson
PACIFIC
ROAD
Oak
Point
SOUTHERN
MORROW
Creek
GREENWOOD
PACIFIC
Hayden
BM 165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SCALE IN FEET
CLEAN AND ABANDON MANURE PIT
ALL AREAS EXPOSED TO MANURE WILL BE ROOFED.
ROOFS WILL BE GUTTERED
MANURE PIT
EXERCISE LOT
EXERCISE LOT
EXERCISE LOT
TRUCK PARKING
SHOP
ABANDON SILAGE PIT
SHOP
FREE STALL BARN
GRAVEL
FOREST AREA
SILAGE SLAB
HAY BARN
ASPHALT
GRAVEL
LAWN OR GARDEN
HO
HO
SILAGE PIT
PARKING
MORROW RD
FREE STALL BARN WILL BE CHANGED TO DRY PACK UNDER LIVESTOCK
SEE DESIGN FOR SILAGE STORAGE
CLAUDE WHITE & WHITE'S TRUCKING FACILITY LAYOUT
PLANNED
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
Designed M Graham 4/98
Drawn M. Graham 4/98
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Approved by
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Sheet No. 1 of 1
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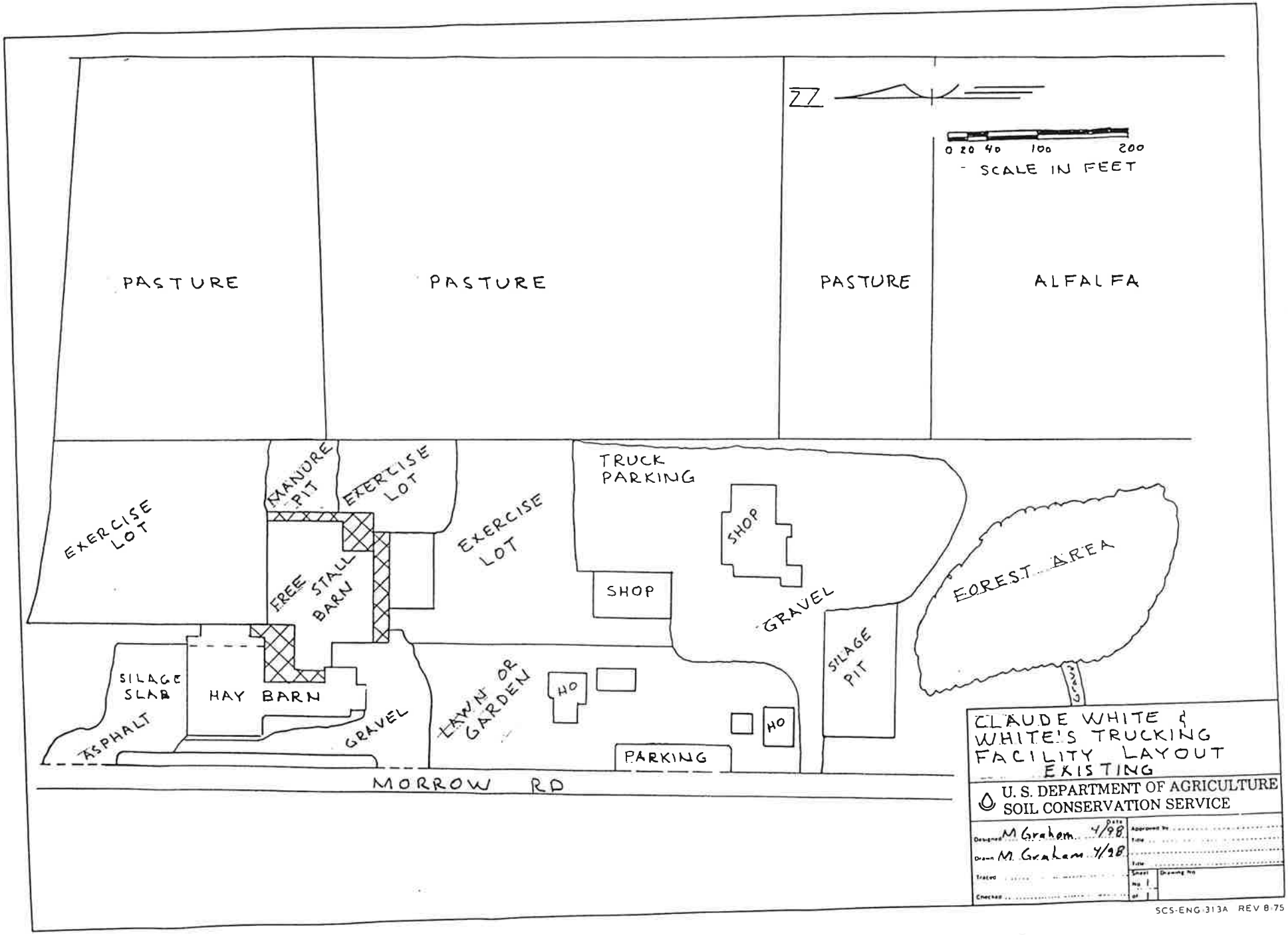
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FOREST AREA
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HAY BARN
ASPHALT
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LAWN OR GARDEN
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SILAGE PIT
PARKING
MORROW RD
CLAUDE WHITE & WHITE'S TRUCKING FACILITY LAYOUT EXISTING
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SOIL CONSERVATION SERVICE
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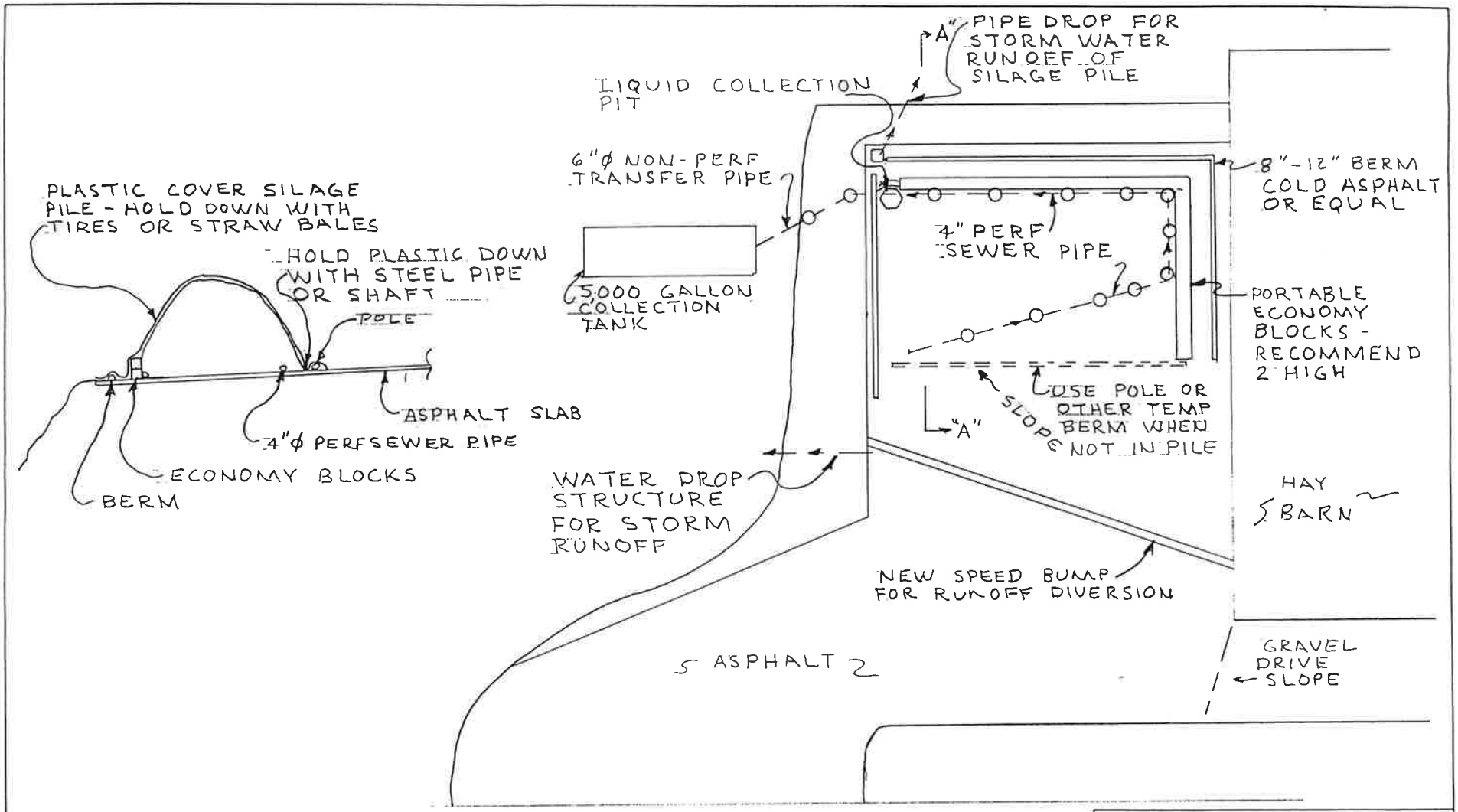

CLAUDE WHITE
SILAGE RUNOFF CONTROLL

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

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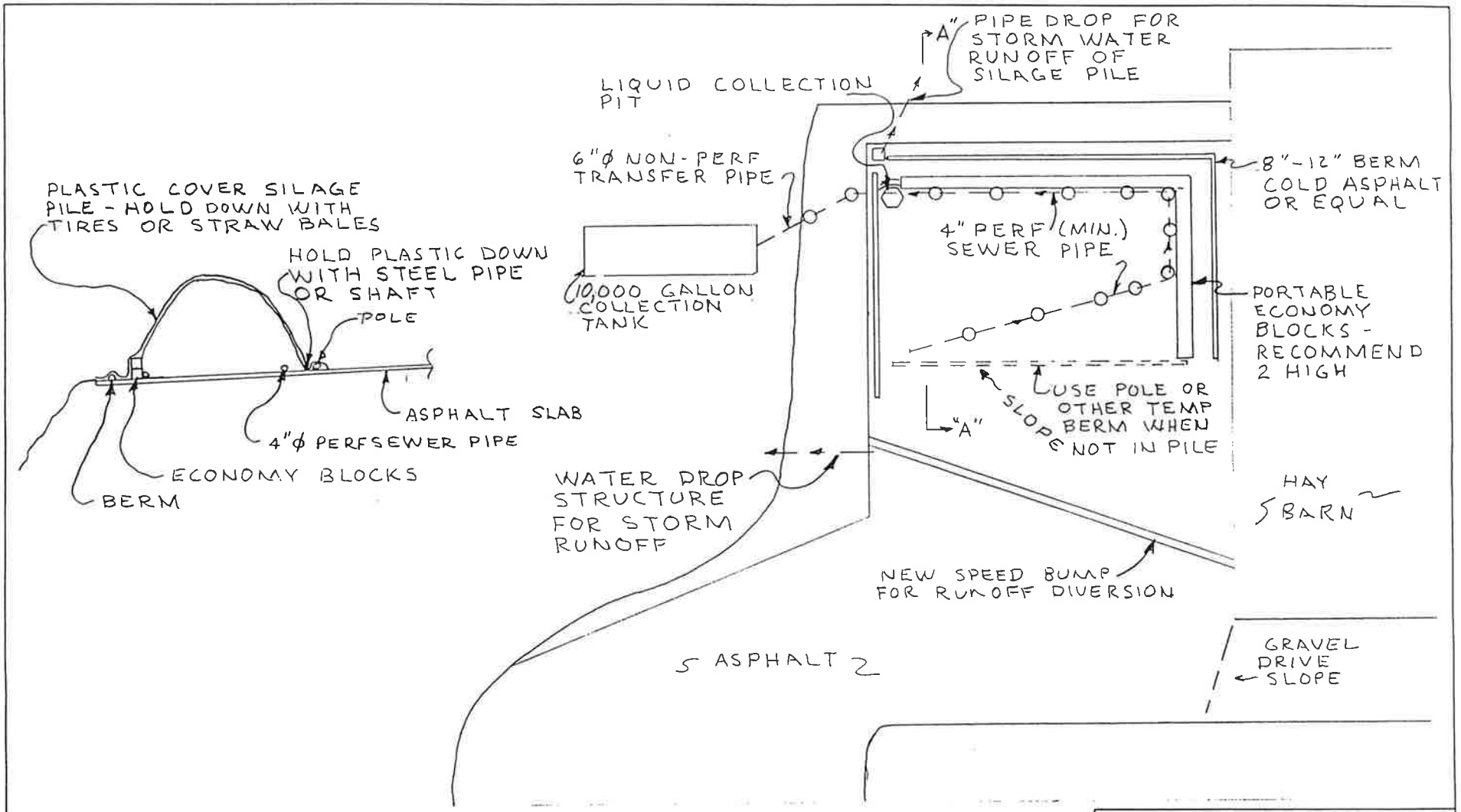

CLAUDE WHITE
SILAGE RUNOFF
CONTROLL

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SOIL CONSERVATION SERVICE

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