= Salem's copy (original on file in TO CN June, 052)

RECEIVED 3/2/06 Approved 8/7/06
MA# 03344
AWMP # 06021
Due Date 04/16/06

Mike Bush
10/05
9375 Trask River Road
Tillamook, OR 97141
503/842/5242

BUSINESS NARRATIVE

This dairy is a 143-1,000 lb. Jersey animal unit operation. There are 125 lactating cows, 25 dry cows, and 40 calves. The heifers are raised off farm. The milk cows are confined for 187 days and on pasture for 178 days. The dry cows are confined for 151 days and on pasture for 214 days. The calves are confined. The operation is planning to expand to 207-1,000 lb. animal units. There will be 200 lactating cows, 25 dry cows, and 40 calves. The heifers will be raised off farm. It is planned that the lactating cows will be confined for 252 days and on pasture for 113 days. The dry cows will be confined for 178 days and on pasture for 187 days. Livestock mortality service is provided by Tillamook County Creamery Association.

The operation consists of 28.1 acres of owned land, where manure is applied and 52.4 rented pasture and hay land which receives manure applications. The liquid manure is transported and applied to pastures with a tractor and a 2,300 gallon tank wagon. The solid manure is transported and applied to the pastures with a tractor and a 200 bushel manure spreader. The pastures are in fair to good condition. The target yield is 6 tons of dry matter per acre per year. The primary forage species are rye grass and fescues. The 28.1 acres in Tract 53 are within the 100-year floodplain. The 52.4 acres of rented pastures and hay land are outside the 100-year floodplain.

The lactating cow manure will be managed 60% liquids and 40% solids. The manure from the dry cows and calves will be handled 100% solids. A manure separator is used to separate the solid fraction from the liquid waste produced by the lactating cows. The existing liquid waste storage facilities consist of three below ground liquid waste storage tanks and one above ground liquid waste storage tank. The below ground liquid waste storage tanks are 9' x 24' x 6', 21' x 41' x 8' and 9' x 32' x 4'. The above ground liquid waste storage tank is 80' x 16'. These four liquid waste storage facilities can store the liquid waste produced by the 143-1,000 lb. animal units for 149 days. The liquid wastes for the planned 207-1,000 lb. animal units can be stored for 147 days. There are two solid manure storage facilities. They are 40' x 40' x 6' and 39' x 49' x 6'. The two solid manure storage facilities can store the solid manure produced from the existing 143-1,000 lb. animal units and the planned 207-1,000 lb. animal units for over 365 days.

All the manure accumulations areas have been roofed, guttered, outetted in an area free of manure. All conservation practices installed or planned will be managed and maintained in accordance with the enclosed "CONSERVATION PRACTICE OPERATION AND MAINTENEANCE PLAN".

Soils where manure is applied are: Gauldy, Ginger, Hebo, Knappa, Quillayute, and Winema silt loam soils. The Hebo silt loam soil is poorly drained. The Ginger soil is somewhat poorly drained. The Quillayute , Knappa, and Winema silt loam soils are well drained. The Gauldy soil is somewhat excessively drained.

OREGON

MIKE BUSH - GYPO JERSEY

KMP 03-17-09

FARMSTEAD LAYOUT

LEGEND

BELOW GROUND TANK

GUTTERS & DOWNSPOUTS

DRY MANURE STORAGE

WASTE TRANSFER

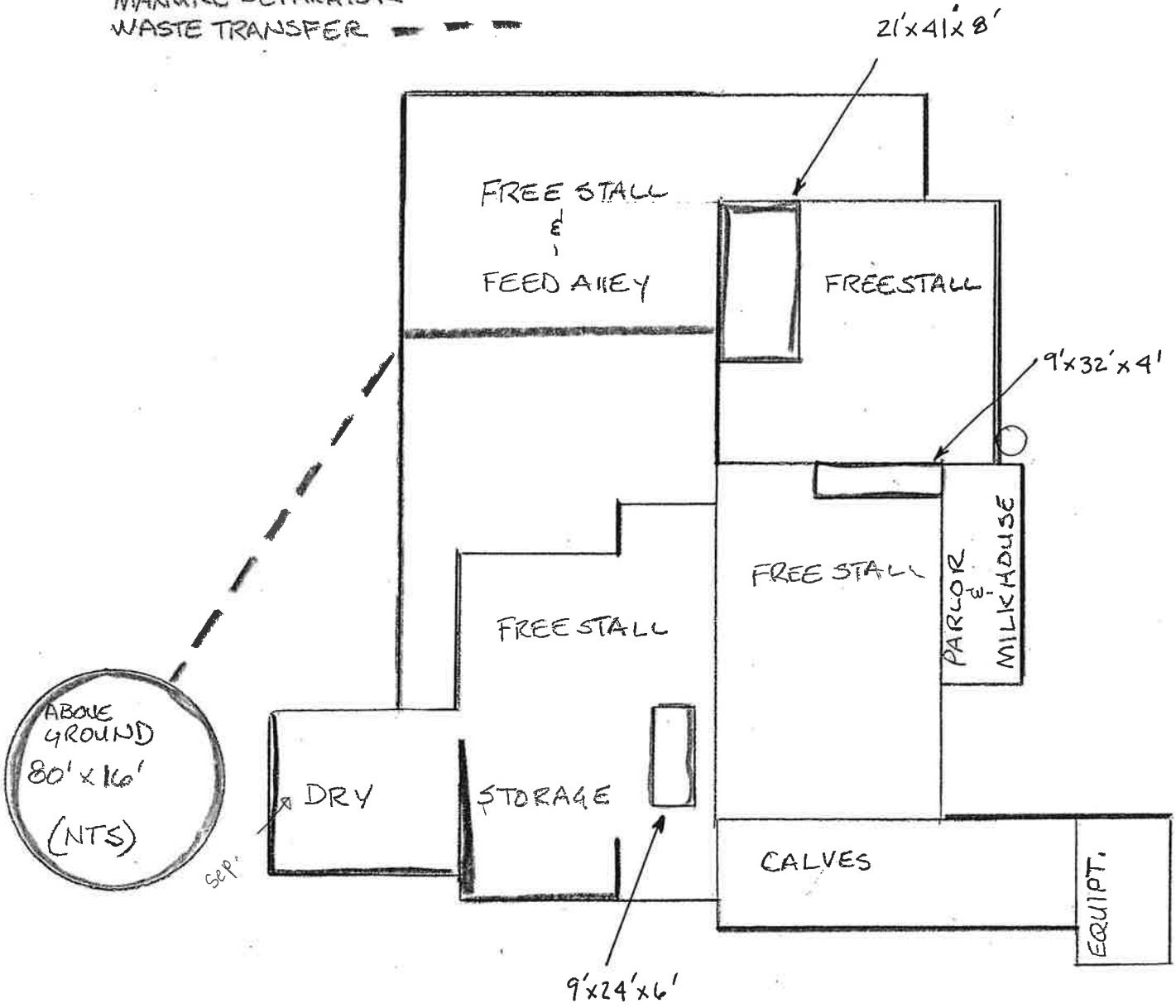
PLANNED LEGEND

ABOVE GROUND TANK

~~MANURE SEPARATOR~~

WASTE TRANSFER

N



SCALE: 1" = 40'

Mike Bush
06/2005

LAND USE SUMMARY

Tract No.	Field No.	Land Use	Acres
53	1	Pasture	8.1
	2	Pasture	7.4
	3	Pasture	5.7
	4	Hayland	6.9
	5.	Wildlife	8.8
	F	Farmstead	5.6
		Subtotal	**42.5**
477	1	Pasture	29.7
	2	Pasture	6.0
	3	Hayland	4.1
	4	Hayland	2.2
	5	Hayland	1.6
	6	Hayland	1.9
	7	Hayland	1.1
		Subtotal	**46.6**
647	1	Hayland	3.3
	2	Hayland	3.6
		Subtotal	**6.9**
		TOTAL	**96.0**

SUMMARY

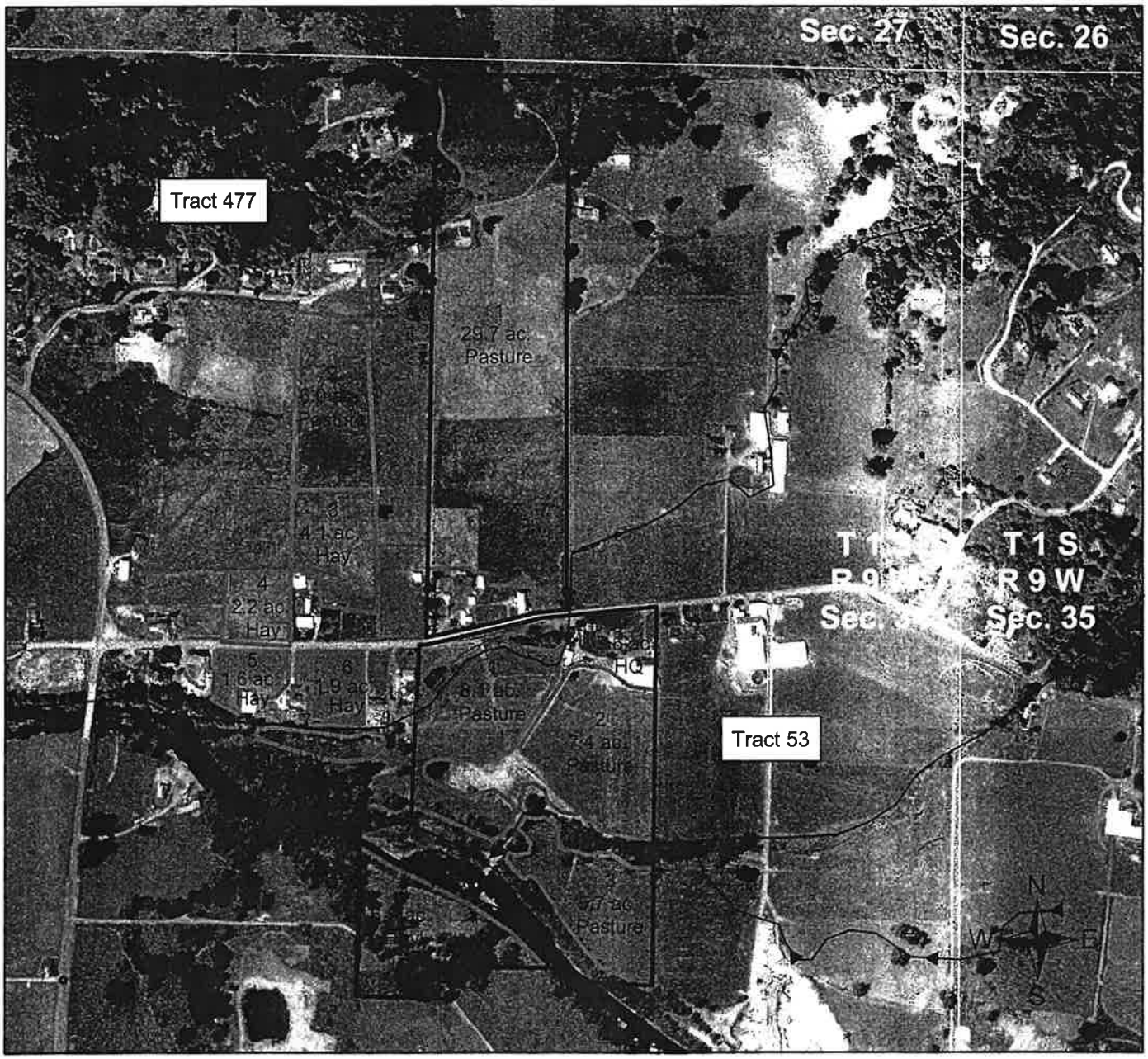
Pasture		56.9
Hayland		24.7
Wildlife		8.8
Farmstead		5.6
	TOTAL	**96.0**

MIKE BUSH
TR002

TILLAMOOK SERVICE CENTER
USDA - NRCS
TILLAMOOK COUNTY, OREGON

Tillamook County SWCD
Approximate Acres: 89.1
Date: 6/15/2005

Conservation Plan Map 1



390 0 390 780 1,170 1,560 Feet

Legend

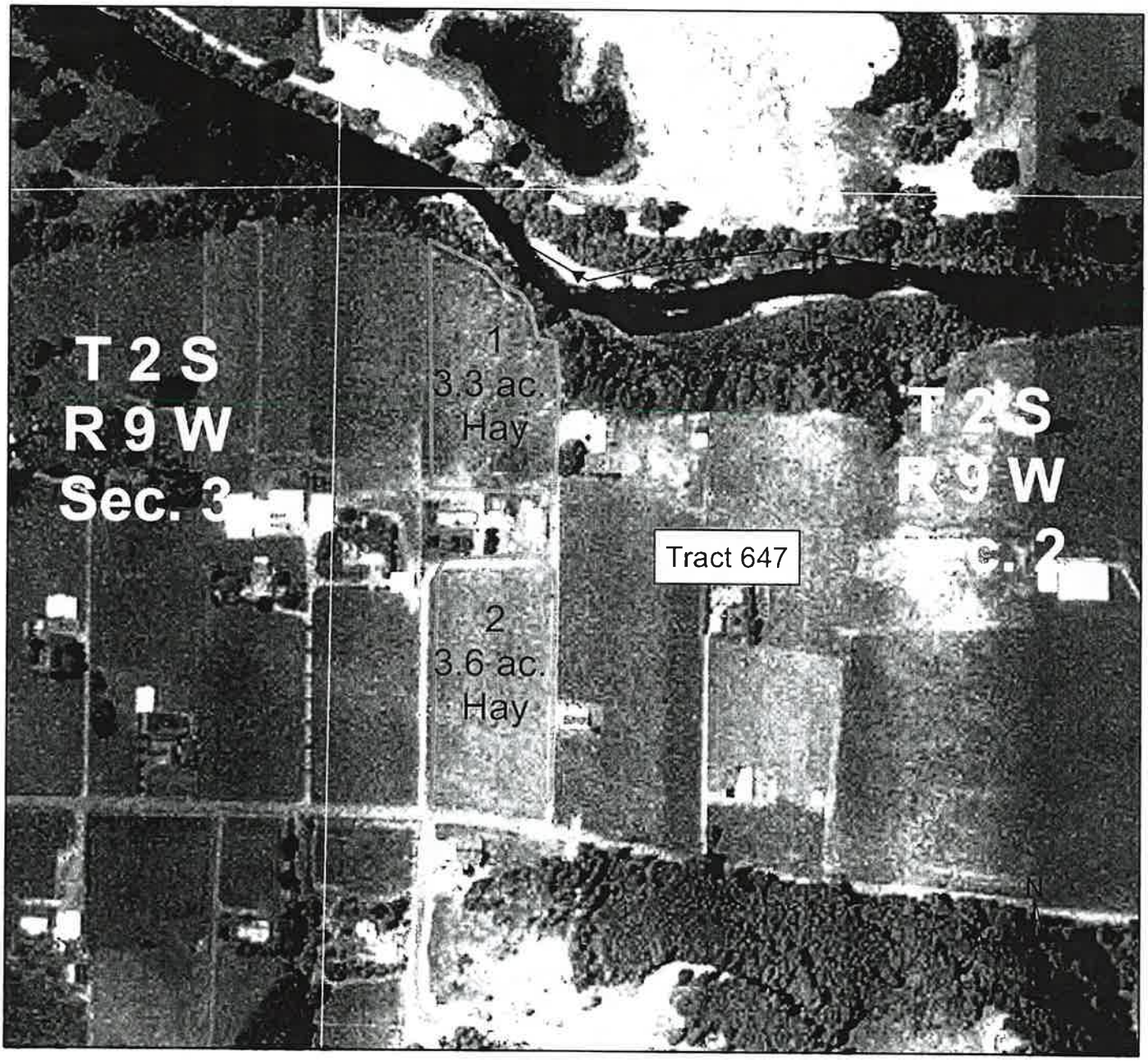
- Tract Boundary
- Planned Land Units
- Public Land Survey
- Filter Strip
- Open Water Course

MIKE BUSH
TR002

TILLAMOOK SERVICE CENTER
USDA - NRCS
TILLAMOOK COUNTY, OREGON

Tillamook County SWCD
Approximate Acres: 6.9
Date: 6/15/2005

Conservation Plan Map 2



200 0 200 400 600 800
Feet

Legend

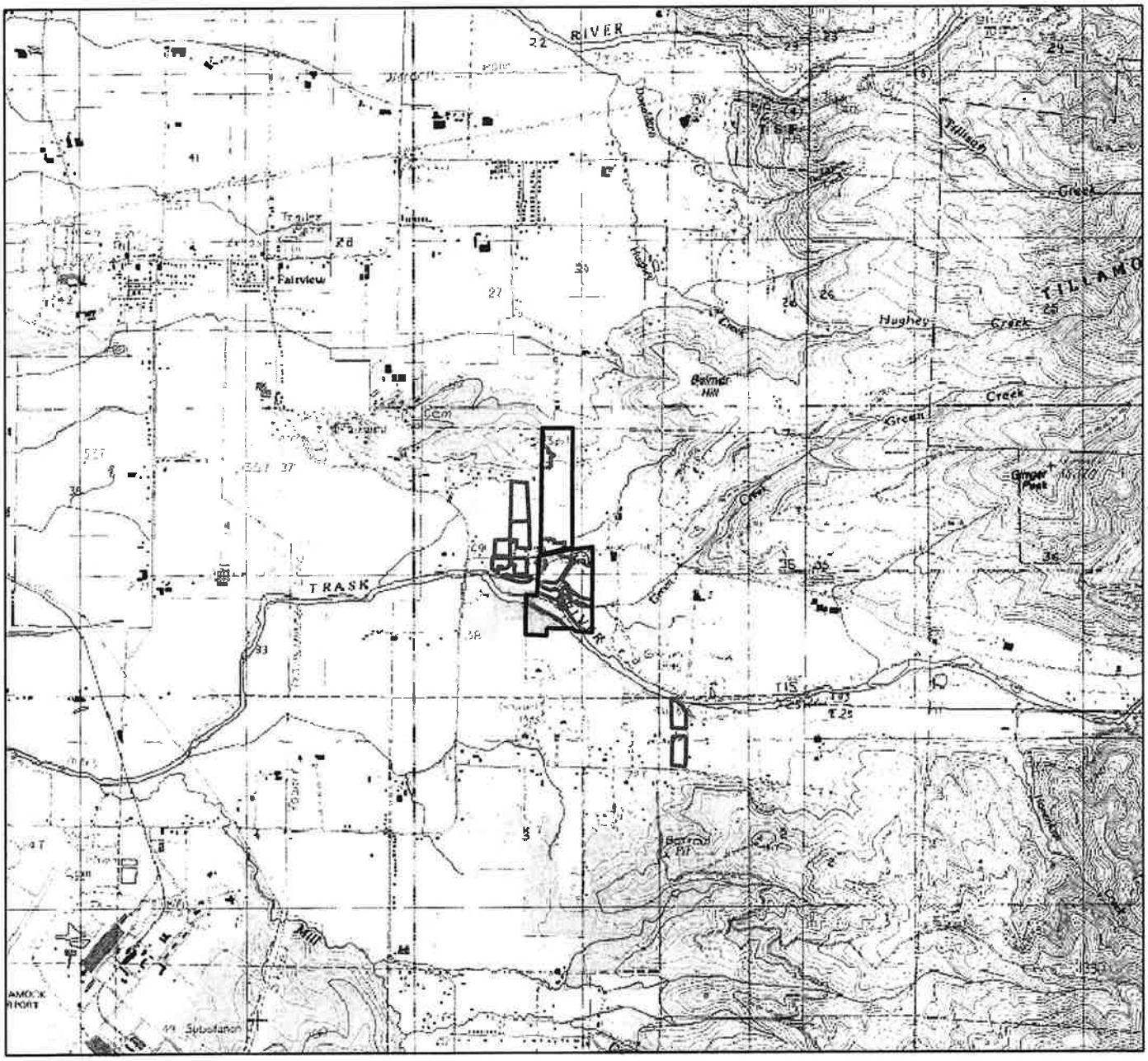
- Tract Boundary
- Planned Land Units
- Public Land Survey
- Filter Strip
- Open Water Course

MIKE BUSH
TR002

TILLAMOOK SERVICE CENTER
USDA - NRCS
TILLAMOOK COUNTY, OREGON

Tillamook County SWCD
Approximate Acres: 96.0
Date: 6/15/2005

7.5 Min. Topo Map



1,700 0 1,700 3,400 5,100 6,800 Feet

Legend

- Tract Boundary
- Planned Land Units
- Farmstead Lat/Long (NAD83) 45 26' 27.3" N; 123 46' 8.8" W

N
W E
S

SCS-CPA-015
12-85

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL MAP

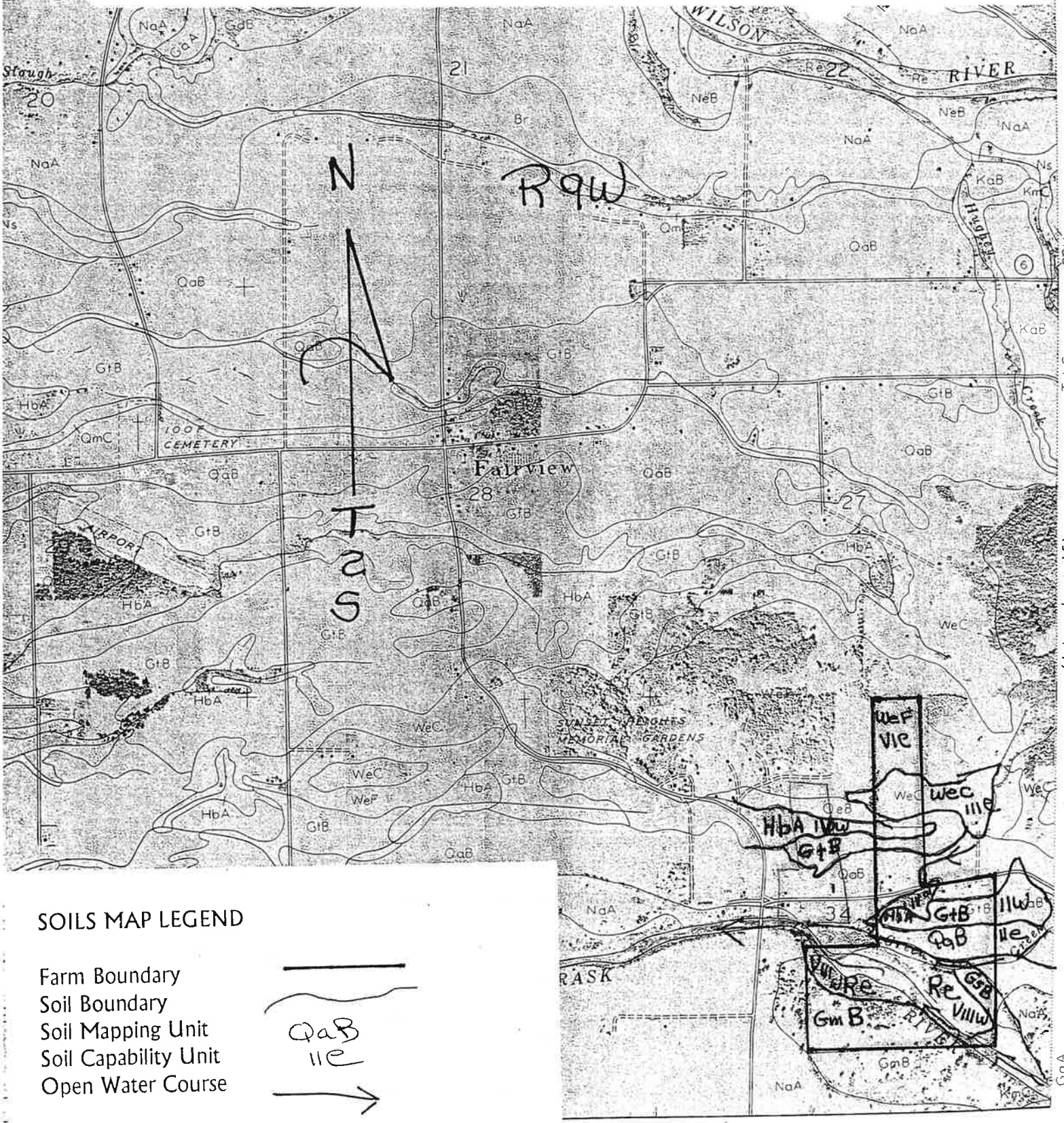
AMOOK

Owner Brownlee & Mike Bush Operator Same

County Tillamook State Oregon

Soil survey sheet(s) or code nos. 14 Approximate scale 1:20000

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



SOILS MAP LEGEND

Farm Boundary

Soil Boundary

Soil Mapping Unit QaB

Soil Capability Unit IIe

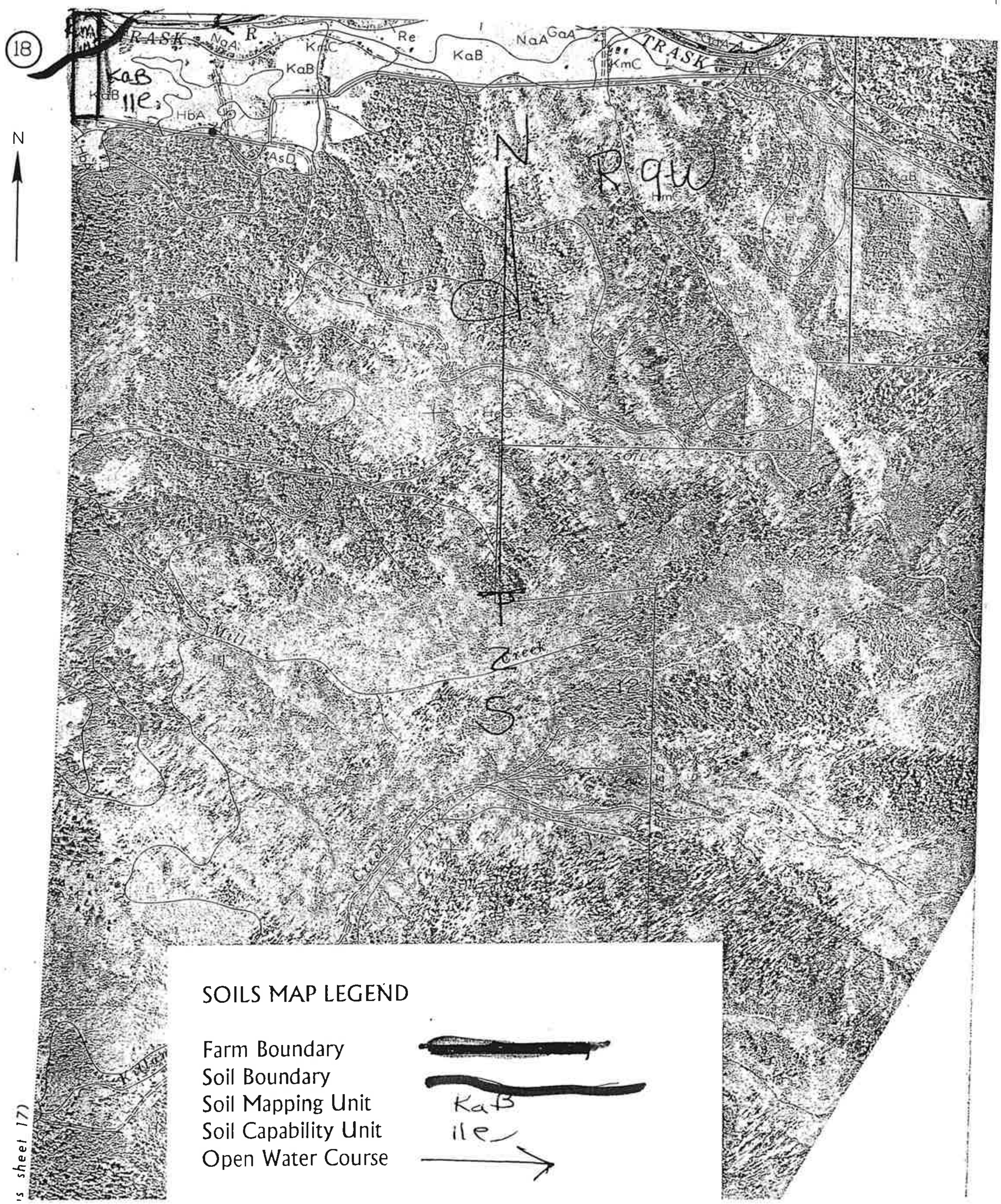
Open Water Course

SCS-CPA-15
(3-88)

SOIL MAP

Owner G. Smith
Operator Mike Bush
County Tillamook
State Oregon
Soil survey sheet(s) or code nos. 18
Approximate scale 1:20000

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



SOILS MAP LEGEND

Farm Boundary
Soil Boundary
Soil Mapping Unit KaB
Soil Capability Unit IIe
Open Water Course

SCS-CPA-015
12-65

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL MAP

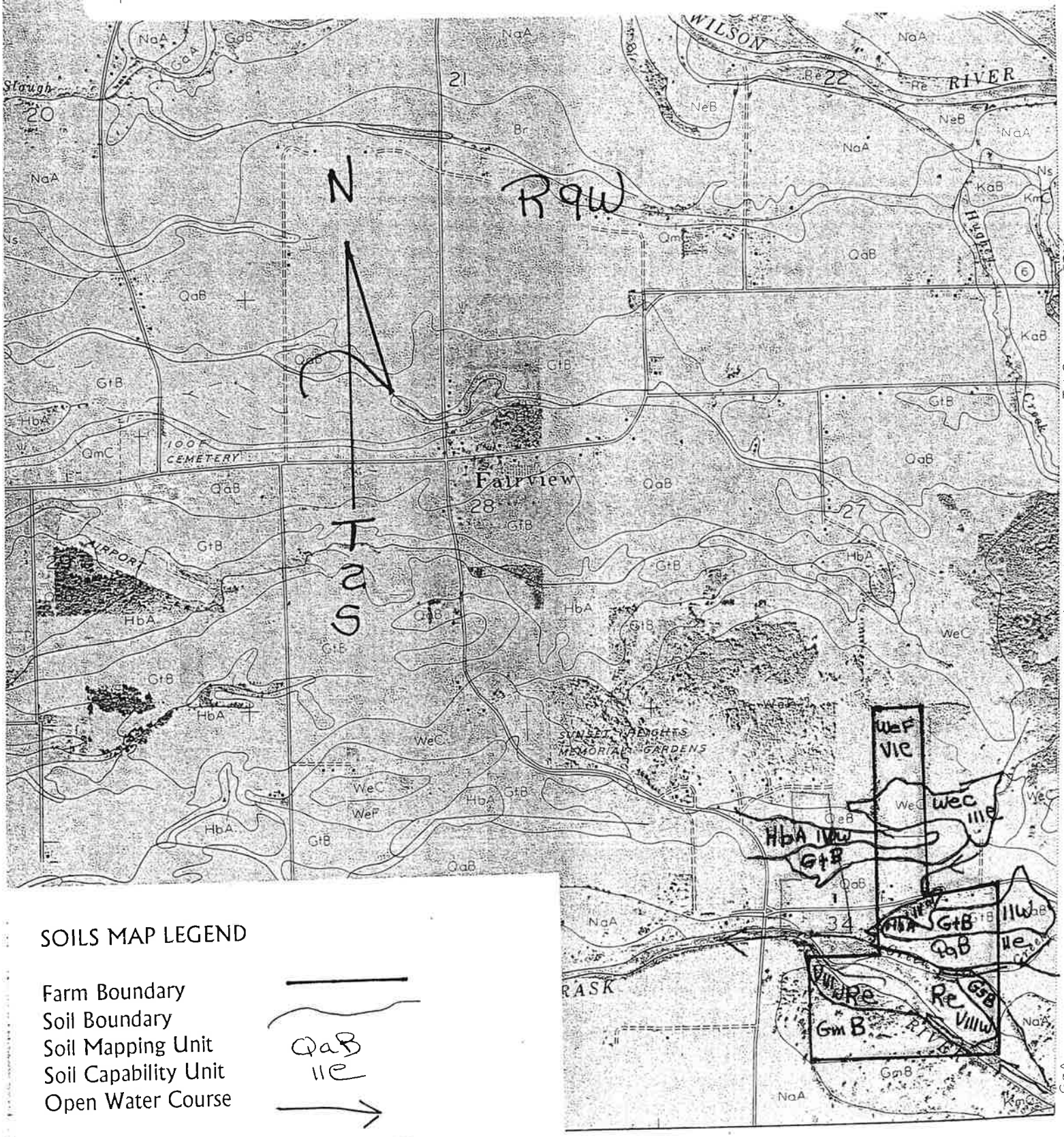
AMOOK

Owner Brownlee & Mike Bush Operator Same

County Tillamook State Oregon

Soil survey sheet(s) or code nos. 14 Approximate scale 1:20000

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



SOILS MAP LEGEND

Farm Boundary
Soil Boundary
Soil Mapping Unit — QaB
Soil Capability Unit — IIe
Open Water Course

SCS-CPA-15
(3-88)

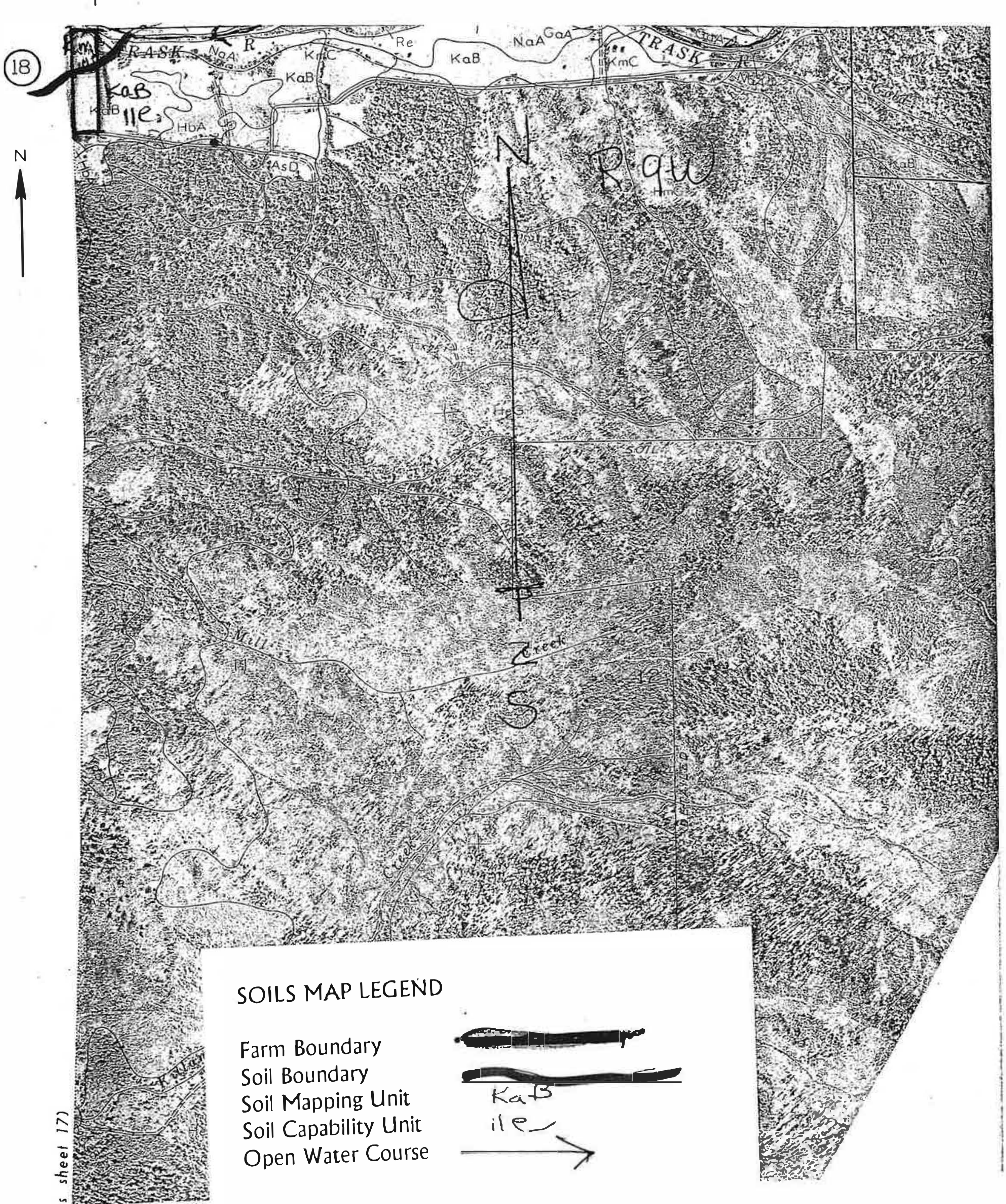
SOIL MAP

Owner G. Smith Operator Mike Bush

County Tillamook State Oregon

Soil survey sheet (s) or code nos. 18 Approximate scale 1:20000

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



Mike Bush
10 / 2005

SOILS DESCRIPTION

GmB - The Gauldy Series consist of somewhat excessively drained, shallow to moderately deep, gravely alluvium. The soils generally occupy narrow floodplains of rivers and other very active, fast-flowing streams. They are young soils over sand and gravel, and have only a weakly developed profile. The surface soil is dark brown, very friable, and subangular blocky. The subsoil is dark yellowish brown and very friable and has a weak, subangular blocky structure. Waterworn, pebbles occur throughout the soil profile. Runoff is slow. Sub-soil permeability is moderately rapid. The available water holding capacity is moderate to low; root penetration is moderately deep to deep. The hazard of erosion is slight, but some damaging overflow occurs. The soil is medium in organic matter and fertility, and is strongly acid. This soil is used primarily for pasture and hay. These crops need fertilizer and sprinkler irrigation. NRCS capability classification is IIs-1. Woodland suitability is group 1.

GtB - Ginger series, 0-7% slopes, consist of somewhat poorly drained soils on terraces. Erosion hazard is slight. Runoff is slow. Permeability is also slow. NRCS capability classification is IIw because of somewhat poor drainage. Effective rooting depth is from 14 to 20 inches. Available water holding capacity is 8 to 10 inches. These soils are suited for pasture.

GsB - Gauldy silt loam, 0-7% slopes, are somewhat excessively drained soils occupying narrow floodplains along fast flowing water courses. These soils are strongly acid and very gravely. Runoff is slow and permeability moderately rapid. Gauldy soils have a slight erosion potential. Water supplying capacity is 18 to 24 inches. Effective rooting depth is more that 60 inches. Major land uses are; forage, green chop and timber production.

HbA - Hebo silt loam is a poorly drained soil formed in alluvium on terraces. Slopes are 0-3%. Permeability is very slow. The runoff rate is slow. Erosion hazard is slight. The surface and subsoil are both dark gray silty clays with an effective rooting depth of less that 20 inches. High water tables influence root depths. Available water holding capacity is 8-11 inches. NRCS capability classification is IVw because of wetness. Hebo soils are primarily used for pastures.

KaB - Knappa silt loam, 0-7% slopes, are very deep, well drained soils. The erosion hazard is slight. Permeability is moderate. NRCS capability classification is IIc because of climate. Effective rooting depth is more than 60 inches. Available water holding capacity is 10 to 12 inches. Soils are well suited for pasturelands. Should they be used for woodland, site indexes are 170 for Douglas Fir. Logging equipment limitations are moderate.

Mike Bush
10 / 2005

KmC - Knappa soils, 0-12% slopes, are very deep and well drained. The erosion hazard is moderate. Runoff is medium. Permeability is moderate. SCS capability classification is IIIe because of erosion. Effective rooting depth is greater than 60 inches. Available water holding capacity is 10 to 12 inches. This Knappa series soil consists of sandy and gravelly materials in stratified layers.

QaB - Quillayute loams, 0-7% slopes, are well drained soils. These soils are located on terraces. The erosion hazard is slight to moderate. Permeability is moderate. NRCS capability classification is IIe because of erosion potential on higher slopes. The effective rooting depth is greater than 60 inches. The total available water holding capacity is 12 to 17 inches. These soils are well suited for pasture.

Re - The Riverwash soil series consist of narrow, irregular strips in the bends of stream channels and along drainage ways. The strips are from 40 to 200 yards in width and consist of well-rounded sand, gravel, stones, and boulders. Riverwash slopes are from 0-5 percent. Depth to bedrock is 20 to more than 60 inches. Permeability is rapid. Available water holding capacity and water supply capacity are variable. Effective rooting depth is 20 to 60 inches. The water erosion hazard is severe. NRCS capability classification is VIIIs because of the limited potential to produce vegetation on the aggregate.

WeC - Winema silt loams, 3-12% slopes, are a well drained soils occurring on rolling and hilly lands. These soils have a black silt loam surface abort 21 inches thick. Permeability is moderately slow. Runoff is slow to moderate and the erosion hazard moderate. NRCS capability classification is IIIe due to the erosion hazard. Effective rooting depth is greater than 40 inches. Total water holding capacity is 9 to 13 inches. This soil is used for pasture.

WeF - Winema series soils, 20 to 40% slopes, are well drained soils occurring on hilly uplands. The erosion hazard is moderate to severe and runnoff rapid. NRCS capability classification is VIe due of the severe erosion hazard. Permeability is moderately slow. Effective rooting depth is greater than 40 inches. Total water holding capacity is 9 to 13 inches. These soils are used as native pasture.

NRCS Natural Resources Conservation Service
TILLAMOOK SERVICE CENTER
6415 SIGNAL ST
TILLAMOOK, OR 97141-9622
5038422848 ext. 107

Robert A. Pedersen
Basin Team Leader

Conservation Plan

MIKE BUSH
9375 TRASK RIVER RD
TILLAMOOK, OR 97141

Objective(s)

Develop and Implement a comprehensive nutrient management plan, that when implemented, the operation will be in compliance with ODA's CAFO rules, regulations, and permit conditions.

Farmstead

Tract: 53

Comprehensive Nutrient Management Plan

A Comprehensive Nutrient Management Plan consisting of structural and vegetative practice for the collecting, transferring, handling, storage, and application of animal waste in an environmentally safe manner will be developed and implemented.

Field	Planned Amount	Month	Year	Applied Amount	Date
F	1 no	8	2005	1 no	8/29/2005
Total:	1 no			1 no	

Manure Transfer

175 feet of 5 inch Class Code 125 PVC manure transfer pipe was installed between the existing below ground liquid manure tanks to transfer manure between tanks.

Field	Planned Amount	Month	Year	Applied Amount	Date
F	1 no	11	1992	1 no	11/30/1992
Total:	1 no			1 no	

Manure Transfer

A 12 inch wide by 6 inch high concrete curb was installed to divert manure from the milk parlor to the below ground liquid waste storage tank.

Field	Planned Amount	Month	Year	Applied Amount	Date
F	1 no	11	1987	2 no	11/11/1987
Total:	1 no			2 no	

Manure Transfer

A 5 inch PVC Class Code 125 manure transfer pipe was installed. to transfer the liquid waste from the below ground liquid waste storage tanks to the above ground liquid waste storage tank.

Field	Planned Amount	Month	Year	Applied Amount	Date
F	1 no	8	2005	1 no	8/15/2004
Total:	1 no			1 no	

Manure Transfer

A concrete curb was installed. Curbing is machinery and livestock passable curb was installed at edge of solid manure storage facility to prevent manure runoff.

Field	Planned Amount	Month	Year	Applied Amount	Date
F	1 no	9	1983	2 no	9/19/1983
Total:	1 no			2 no	

Manure Transfer

A manure separator was installed to remove the solid manure fraction from the liquid.

Field	Planned Amount	Month	Year	Applied Amount	Date
F	1 no	8	2005	1 no	8/28/2005
Total:	1 no			1 no	

Manure Transfer

A pump was installed in a below ground liquid waste storage tank to transfer manure between the below ground liquid waste storage tanks.

Field	Planned Amount	Month	Year	Applied Amount	Date
F	1 no	11	1992	1 no	11/30/1992
Total:	1 no			1 no	

Manure Transfer

An agitator was installed in the above ground liquid waste storage tank.

Field	Planned Amount	Month	Year	Applied Amount	Date
F	1 no	8	2005	1 no	8/15/2004
Total:	1 no			1 no	

Manure Transfer

Machinery and livestock passable curbing as installed around all uncurbed manure accumulation slabs.

Field	Planned Amount	Month	Year	Applied Amount	Date
F	1 no	10	1991	1 no	10/27/1991
Total:	1 no			1 no	

Roof Runoff Structure

600 feet of gutters and downspouts were installed on all existing animal confinement buildings that did not have adequate guttering.

Field	Planned Amount	Month	Year	Applied Amount	Date
F	1 no	7	1982	1 no	7/26/1982
Total:	1 no			1 no	

Subsurface Drain

A tile drain was installed in the open water course and covered with mineral soil to prevent manure from manure storage facility from entering the open water course.

Field	Planned Amount	Month	Year	Applied Amount	Date
F	110 ft	11	1991	110 ft	11/20/1991
Total:	110 ft			110 ft	

Underground Outlet

A four inch underground outlet was installed to outlet the gutters in an area free of manure.

Field	Planned Amount	Month	Year	Applied Amount	Date
F	400 ft	7	1982	400 ft	7/26/1982
F	530 ft	10	1985	530 ft	10/3/1985
Total:	930 ft			930 ft	

Waste Storage Facility

A 1,312 square foot NRCS approved roof was installed over the below ground liquid manure tank on west side of milking parlor.

Field	Planned Amount	Month	Year	Applied Amount	Date
F	1 no	10	1991	1 no	10/27/1991
Total:	1 no			1 no	

Waste Storage Facility

A 1,512 square foot roof was installed in accordance with an approved NRCS design. This roof was installed over two manure accumulation slabs on the south end of the confinement buildings.

Field	Planned Amount	Month	Year	Applied Amount	Date
F	1 no	9	1983	1 no	9/19/1983
Total:	1 no			1 no	

Waste Storage Facility

A 1,769 square foot NRCS approved roof was installed over a manure accumulation slab on the west side of the milking parlor.

Field	Planned Amount	Month	Year	Applied Amount	Date
F	1 no	11	1987	1 no	11/11/1987
Total:	1 no			1 no	

Waste Storage Facility

A 21' x 41' x 8' below ground liquid manure tank was installed. This 6,888 cubic foot liquid manure storage tank, in combination with the other two below ground liquid waste storage tanks and the above ground liquid waste storage tank, will store the liquid waste produced by the 207-1,000 lb. animal units for 119 days.

Field	Planned Amount	Month	Year	Applied Amount	Date
F	1 no	10	1991	1 no	10/15/1991
Total:	1 no			1 no	

Waste Storage Facility

A 39' x 49' x 6' solid manure storage facility was installed. This 11,466 cubic foot solid manure storage facility, in combination with the other existing solid manure storage facility, will store the solid manure produced by the 207-1,000 lb. animal units for over 365 days.

Field	Planned Amount	Month	Year	Applied Amount	Date
F	1 no	10	2003	1 no	10/14/2003
Total:	1 no			1 no	

Waste Storage Facility

A 9' x 24' x 6' below ground liquid manure tank was installed. This 1,296 cubic foot liquid waste storage tank, in combination with the two other existing below ground tanks and the above ground liquid waste storage tank, will store the liquid waste produced by the 207-1000 lb. animal units for 119 days.

Field	Planned Amount	Month	Year	Applied Amount	Date
F	1 no	8	1980	1 no	8/17/1980
Total:	1 no			1 no	

Waste Storage Facility

A 9' x 32' x 4' below ground liquid waste storage tank was installed. This 1,152 cubic foot liquid waste storage tank, in combination with the other two existing below ground liquid waste storage tanks and the above ground liquid waste storage tank, will store the liquid waste produced by the 207-1,000 lb. animal units for 119 days.

Field	Planned Amount	Month	Year	Applied Amount	Date
F	1 no	9	1975	1 no	9/19/1975
Total:	1 no			1 no	

Waste Storage Facility

A solid manure storage facility wasninstalled in accordance with approved SCS design and standards. The facility is 40' x 40' x 6' This 9,600 cubic foot facility, in combination with other solid manure storage facility, will store the solid manure produced by the 207-1,000 lb. animal units for over 365 days.

Field	Planned Amount	Month	Year	Applied Amount	Date
F	1 no	9	1983	1 no	9/19/1983
Total:	1 no			1 no	

Waste Storage Facility

An 80' x 16' above ground liquid manure tank was installed. Thie 80,425 cubic foot lquid waste storage tank in combination with the other four ibelow ground liquid waste storage tanks will provide 119 days storage for the 207-1,000 lb. animal units. NRCS Standard Drawing AWM-313050 was used as the design for the above ground liquid waste storage tank.

Field	Planned Amount	Month	Year	Applied Amount	Date
F	1 no	8	2005	1 no	8/15/2004
Total:	1 no			1 no	

Waste Storage Facility

An agitator was installed in the below ground liquid waste storage tank to stir the manure for application and prevent solid manure buildup in the facility.

Field	Planned Amount	Month	Year	Applied Amount	Date
F	1 no	12	1991	1 no	12/23/1991
Total:	1 no			1 no	

Hay

Tract: 477

Forage Harvest Management

Forage will be harvested in accordance with the enclosed Forage Harvest Management Worksheet Code 511.

Field	Planned Amount	Month	Year	Applied Amount	Date
3	4.1 ac	9	2006R		
4	2.2 ac	9	2006R		
5	1.6 ac	9	2006R		
6	1.9 ac	9	2006R		
7	1.1 ac	9	2006R		
Total:	10.9 ac				

Nutrient Management

Manure will be used for forage production. Soil tests will be used to determine rates of application. Nutrient management will be implemented in accordance with the enclosed Nutrient Management Specification Sheet Code 590.

Field	Planned Amount	Month	Year	Applied Amount	Date
3	4.1 ac	10	2007R		
4	2.2 ac	10	2007R		
5	1.6 ac	10	2007R		
6	1.9 ac	10	2007R		
7	1.1 ac	10	2007R		
Total:	10.9 ac				

Waste Utilization

Manure will be applied to hayland in accordance with the enclosed Waste Utilization Conservation Practice Jobsheet(633 OR-JS).

Field	Planned Amount	Month	Year	Applied Amount	Date
3	4.1 ac	9	2006R		
4	2.2 ac	9	2006R		
5	1.6 ac	9	2006R		
6	1.9 ac	9	2006R		
7	1.1 ac	9	2006R		
Total:	10.9 ac				

Tract: 647

Forage Harvest Management

Forage will be harvested in accordance with the enclosed Forage Harvest Management Worksheet Code 511.

Field	Planned Amount	Month	Year	Applied Amount	Date
1	3.3 ac	9	2006R		
2	3.6 ac	9	2006R		
Total:	6.9 ac				

Nutrient Management

Manure will be used for forage production. Soil tests will be used to determine rates of application. Nutrient management will be implemented in accordance with the enclosed Nutrient Management Specification Sheet Code 590.

Field	Planned Amount	Month	Year	Applied Amount	Date
1	3.3 ac	10	2007R		
2	3.6 ac	10	2007R		
Total:	6.9 ac				

Waste Utilization

Manure will be applied to hayland in accordance with the enclosed Waste Utilization Conservation Practice Jobsheet(633 OR-JS).

Field	Planned Amount	Month	Year	Applied Amount	Date
1	3.3 ac	9	2006R		
2	3.6 ft	5	2006R		
Total:	6.9 ac				

Hayland

Tract: 53

Fence

Watercourses have been fenced to exclude livestock from the watercourses and riparian areas. A two strand New Zealand style fence was installed.

Field	Planned Amount	Month	Year	Applied Amount	Date
4	1350 ft	5	2000	1350 ft	5/4/2000
Total:	1350 ft			1350 ft	

Forage Harvest Management

Forage will be harvested in accordance with the enclosed Forage Harvest Management Worksheet Code 511.

Field	Planned Amount	Month	Year	Applied Amount	Date
4	6.9 ac	8	2005R	6.9 ac	8/29/2005
Total:	6.9 ac			6.9 ac	

Nutrient Management

Manure will be used for forage production. Soil tests will be used to determine rates of application. Nutrient management will be implemented in accordance with the enclosed Nutrient Management Specification Sheet Code 590.

Field	Planned Amount	Month	Year	Applied Amount	Date
4	6.9 ac	8	2005R	6.9 ac	8/29/2005
Total:	6.9 ac			6.9 ac	

Waste Utilization

Manure will be applied to hayland in accordance with the enclosed Waste Utilization Conservation Practice Jobsheet(633 OR-JS).

Field	Planned Amount	Month	Year	Applied Amount	Date
4	6.9 ft	7	2005R	6.9 ft	7/24/1990
Total:	6.9 ac			6.9 ac	

Pasture

Tract: 477

Fence

A fence has been installed to exclude livestock from the watercourse..

Field	Planned Amount	Month	Year	Applied Amount	Date
1	300 ft	7	1990	300 ft	7/24/1990
Total:	300 ft			300 ft	

Filter Strip

Agrass filter strip adjacent to the open watercourse will be established and maintained as part of the animal confinement operation water quality plan to prevent agricultural waste from entering the open water course. The filter strip will be 35 feet wide. It will be established in accordance with the enclosed NRCS Filter Strip Specification Sheet Code 393

Field	Planned Amount	Month	Year	Applied Amount	Date
1	0.2 ac	8	2005	0.2 ac	8/29/2005
Total:	0.2 ac			0.2 ac	

Nutrient Management

Manure will be used for forage production. Soil tests will be used to determine rates of application. Nutrient management will be implemented in accordance with the enclosed Nutrient Management Specification Sheet Code 590.

Field	Planned Amount	Month	Year	Applied Amount	Date
1	29.7 ac	10	2005R	29.7 ac	1/1/0001
2	6 ac	10	2007R		
Total:	35.7 ac			29.7 ac	

Prescribed Grazing

Pastures will be managed in accordance with the enclosed Prescribed Grazing Specification Sheet Code 528A.

Field	Planned Amount	Month	Year	Applied Amount	Date
1	29.7 ac	9	2005R	29.7 ac	1/1/0001
2	6 ac	9	2006R		
Total:	35.7 ac			29.7 ac	

Use Exclusion

Livestock have been excluded from the open water course.

Field	Planned Amount	Month	Year	Applied Amount	Date
1	0.1 ac	7	1990	0.1 ac	7/24/1990
Total:	0.1 ac			0.1 ac	

Waste Utilization

Manure will be applied to the pastures in accordance with the enclosed Waste Utilization Conservation Practice Jobsheet(633 OR-JS).

Field	Planned Amount	Month	Year	Applied Amount	Date
1	29.7 ac	9	2005R	29.7 ac	1/1/0001
2	6 ac	8	2006R		
Total:	35.7 ac			29.7 ac	

Tract: 53

Filter Strip

Agrass filter strip adjacent to the open watercourse will be established and maintained as part of the animal confinement operation water quality plan to prevent agricultural waste from entering the open water course. The filter strip will be 35 feet wide. It will be established in accordance with the enclosed NRCS Filter Strip Specification Sheet Code 393

Field	Planned Amount	Month	Year	Applied Amount	Date
1	0.5 ac	8	2005	0.5 ac	8/29/2005
Total:	0.5 ac			0.5 ac	

Nutrient Management

Manure will be used for forage production. Soil tests will be used to determine rates of application. Nutrient management will be implemented in accordance with the enclosed Nutrient Management Specification Sheet Code 590.

Field	Planned Amount	Month	Year	Applied Amount	Date
1	8.1 ac	8	2006R	8.1 ac	8/29/2005
2	7.4 ac	8	2005R	7.4 ac	8/29/2005
3	5.7 ac	8	2005R	5.7 ac	8/29/2005
Total:	21.2 ac			21.2 ac	

Prescribed Grazing

Pastures will be managed in accordance with the enclosed Prescribed Grazing Specification Sheet Code 528A.

Field	Planned Amount	Month	Year	Applied Amount	Date
1	8.1 ac	8	2005R	8.1 ac	8/29/2005
2	7.4 ac	8	2005R	7.4 ac	8/29/2005
3	5.7 ac	8	2005R	5.7 ac	8/29/2005
Total:	21.2 ac			21.2 ac	

Subsurface Drain

A tile drainage system will be installed to manage the water table so manure can be applied on the pastures earlier in the spring and later in the fall without manure runoff occurring.

Field	Planned Amount	Month	Year	Applied Amount	Date
1	225 ft	9	1985	370 ft	9/18/1985
2	1170 ft	5	1993	1500 ft	9/8/1993
Total:	1395 ft			1870 ft	

Surface Drainage, Main or Lateral

An open ditch has been installed to collect and transport surface water from the pastures.

Field	Planned Amount	Month	Year	Applied Amount	Date
1	600 ft	9	1985	385 ft	9/8/1985
Total:	600 ft			385 ft	

Waste Utilization

Manure will be applied to the pastures in accordance with the enclosed Waste Utilization Conservation Practice Jobsheet(633 OR-JS).

Field	Planned Amount	Month	Year	Applied Amount	Date
1	8.1 ac	8	2005R	8.1 ac	8/29/2005
2	7.4 ac	8	2005R	7.4 ac	8/29/2005
3	5.5 ac	8	2006R	5.7 ac	8/29/2005
Total:	21 ac			21.2 ac	

Waste Utilization

Manure will be applied to the pastures in accordance with the enclosed Waste Utilization Specification Sheet 633.

Field	Planned Amount	Month	Year	Applied Amount	Date
3	5.5 ac	5	2005R	5.7 ac	5/4/2000
Total:	5.5 ac			5.7 ac	

Wildlife

Tract: 53

Channel Bank Vegetation

Woody vegetation has been planted within the stream corridor to reduce erosion, sedimentation, stream temperatures and improve the stream cover for the fishery resources. 3000 willow cuttings, 1000 willow whips, and 254 willow posts were planted and insta

Field	Planned Amount	Month	Year	Applied Amount	Date
5	1 ac	5	2000	1 ac	5/4/2000
Total:	1 ac			1 ac	

Fence

The water course has been fenced to exclude the livestock from the water courses and the riparian areas.

Field	Planned Amount	Month	Year	Applied Amount	Date
5	1150 ft	5	1995	1150 ft	5/9/1995
Total:	1150 ft			1150 ft	

Stream Habitat Improvement and Management

Coho salmon and steelhead trout habitat will be enhanced to improve the rearing and/or spawning areas. Enhancement will include streambank stabilization and woody channel vegetative plantings.

Field	Planned Amount	Month	Year	Applied Amount	Date
5	1150 ac	7	2002	1150 ac	7/6/2002
Total:	1150 ac			1150 ac	

Streambank and Shoreline Protection

Rock Barbs will be installed.

Field	Planned Amount	Month	Year	Applied Amount	Date
5	220 ft	9	1998	220 ft	10/28/1998
Total:	220 ft			220 ft	

Upland Wildlife Habitat Management

The riparian areas will be maintained to provide wildlife cover, food, and protect the streambanks from erosion.

Field	Planned Amount	Month	Year	Applied Amount	Date
5	8.8 ac	7	2005	8.8 ac	8/29/2005
Total:	8.8 ac			8.8 ac	

Use Exclusion

Livestock have been excluded to improve the open water course water quality and the riparian area.

Field	Planned Amount	Month	Year	Applied Amount	Date
5	8.8 ac	8	1998	8.8 ac	9/30/1998
Total:	8.8 ac			8.8 ac	

CERTIFICATION OF PARTICIPANTS

Mike Bush 11-29-05

MIKE BUSH Date

CERTIFICATION OF:

Basin Team Leader

Robert A. Pedersen 11/29/05

Robert A. Pedersen Date

CONSERVATION DISTRICT

Rudy Hawk 11-29-05

TILLAMOOK SOIL & WATER CO Date

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R - Designates Recurring Practices

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

OPERATION AND MAINTENANCE WORKSHEET

FILTER STRIP

CODE 393

For: Landowner/Operator Mike Bush

Job Location: T 2S; R 9W; Sec.34

County Tillamook SWCD Tillamook Farm/Tract No. T-53

Prepared By Pedersen Date 03/04

Operation and Maintenance Items

A properly operated and maintained vegetated filter strip is an asset to your farm. This vegetative filter strip was designed and installed to remove sediment and pollutants from runoff. The estimated life span of this practice is at least 10 years. The life of this practice can be assured and usually increased by developing and carrying out a good operation and maintenance program

This practice will require you to perform periodic maintenance and may also require operation items to maintain satisfactory performance. Some recommendations to assist you develop a good operation and maintenance program:

⇒ Maintain vigorous growth of vegetative covering. This includes reseeding, commercial fertilization and application of herbicides when necessary. Periodic mowing or grazing may also be needed to control height.

⇒ Where the filter strip is used to trap nutrients, periodic grazing or mechanical harvesting and removal of vegetation is needed.

⇒ Remove all foreign debris that hinders system operation.

⇒ Limit the traffic and do not use as a roadway.

⇒ Limit livestock usage to vegetative growth periods when they will not damage vegetative root system or compact the soil.

⇒ Immediately repair any vandalism, vehicular, or livestock damage.

⇒ Eradicate or remove all rodents or burrowing animals. Immediately repair any damage caused by their activity.

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

OPERATION AND MAINTENANCE WORKSHEET

PRESCRIBED GRAZING
CODE 528A

For: Landowner/Operator Mike Bush

Job Location: T 2S; R 9W; Sec.34

County Tillamook SWCD Tillamook Farm/Tract No. T-53 & 477

Prepared By Pedersen Date 03/04

Operation and Maintenance Items

Prescribed Grazing can provide economic and resource benefits if applied properly which are assets to the dairy operation. Proper Prescribed Grazing requires certain operational procedures to be followed and evaluated on an annual basis.

⇒ Pastures are reestablished when forage production falls below planned yield threshold.

⇒ A rotational grazing system is used to maintain plant vigor.

⇒ Pastures are clipped and dragged during the growing season to maintain plant vigor and spread the livestock droppings to prevent grass from becoming rank.

⇒ Manure and commercial fertilizer applied in accordance with soil and forage tests.

⇒ Pasture weeds are controlled.

⇒ Pasture grasses are not grazed below 2 inches during the growing season

⇒ Livestock are removed when the soils become wet in the fall.

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

OPERATION AND MAINTENANCE WORKSHEET

FORAGE HARVEST MANAGEMENT

CODE 511

For: Landowner/Operator: Mike Bush

Job Location: T 1S; R 9W; Sec 34 and 2

County Tillamook SWCD Tillamook Farm/Tract No. T-477 & 647

Prepared By Pedersen Date 10/05

Operation and Maintenance Items

Forage Harvest Management can provide economic and resource benefits. If applied properly, is an assets to the dairy operation. Forage Harvest Management requires certain operational procedures to be followed and evaluated on an annual basis.

⇒ Before forage harvest, clear fields of debris that could damage machinery, or if ingested by livestock, lead to sickness (for example, hardware disease) or death.

⇒ Monitor weather conditions and take action accordingly before and after cutting to optimize forage wilting or cutting time to preserve feed quality and prevent forage swaths or windrows from smothering underlying plants.

⇒ Inspect and repair harvesting equipment following manufacturer's preventive maintenance procedures.

⇒ All shields shall be in place during machine operation to prevent injury or death. Shut off machinery before working or unplugging moving parts.

⇒ Select equipment sizes and capabilities that will in a timely and economically feasible manner handle the acreage normally harvested.

⇒ Operate all forage harvesting equipment at the optimum setting and speeds to minimize loss of leaves.

⇒ Set shear-plate on forage chopper to the proper theoretical cut for the crop being harvested. Keep knives well sharpened. Do not use re-cutters or screens unless forage moisture levels fall below recommended levels for optimum chopping action.

⇒ Regardless of silage/haylage storage method, ensure good compaction and an air-tight seal to exclude oxygen and mold formation.

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

OPERATION AND MAINTENANCE WORKSHEET

WASTE UTILIZATION
CODE 633

For: Landowner/Operator Mike Bush

Job Location: T 2; R 9W;Sec. 34 & 2

County Tillamook SWCD Tillamook Farm/Tract No. T-53, 477,647

Prepared By Pedersen Date 03/04

Operation and Maintenance Items

Waste Utilization can provide economic and resource benefits if applied properly which are assets to the dairy operation. Proper waste utilization requires certain operational procedures to be followed and evaluated on an annual basis.

⇒ Manure application equipment is calibrated at least once per year to ensure uniform distribution and accurate application rates.

⇒ Records are maintained of manure applications.

⇒ Manure application equipment is cleaned up and residual material from the equipment is disposed of properly and in a place where surface runoff does not occur.

⇒ Nutrient management plans are reviewed annually and adjustments are made as needed.

⇒ Unnecessary exposure to manure is avoided. Protective clothing is worn when necessary.

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

OPERATION AND MAINTENANCE WORKSHEET

NUTRIENT MANAGEMENT
CODE 590

For: Landowner/Operator Mike Bush

Job Location: T2S; R 9W; Sec.34 & 2

County Tillamook SWCD Tillamook Farm/Tract No. T-53, 477, 647

Prepared By Pedersen Date 03/04

Operation and Maintenance Items

Waste Utilization can provide economic and resource benefits if applied properly which are assets to the dairy operation. Proper waste utilization requires certain operational procedures to be followed and evaluated on an annual basis.

⇒ Manure application equipment is calibrated at least once per year to ensure uniform distribution and accurate application rates.

⇒ Records are maintained of manure applications.

⇒ Manure application equipment is cleaned up and residual material from the equipment is disposed of properly and in a place where surface runoff does not occur.

⇒ Nutrient management plans are reviewed annually and adjustments are made as needed.

⇒ Unnecessary exposure to manure is avoided. Protective clothing is worn when necessary.

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

Operation and Maintenance Worksheet

FENCING

Code 382

For: Landowner/Operator Mike Bush

Job Location: T 2S; R 9W;Sec.34

County Tillamook SWCD Tillamook Farm/Tract No. T-53

Prepared By Pedersen Date 03/04

Operation and Maintenance Items

A properly operated and maintained fence is an asset to the farm. This practice was designed and installed to provide so livestock do not need access to open watercourse for drinking water Practice will prevent pollution and prevent streambank erosion and riparian habitat damage due to livestock access. The estimated life span of this installation is at least 5 years. The life of the practice can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require periodic maintenance and may require operational items to maintain satisfactory performance. A good operation and maintenance plan includes:

⇒ Regular inspections of fences should be part of the on-going management program.

⇒ Inspection of fences after storm event is needed to facilitate the intended use of the fence

⇒ Broken or damaged posts will be replaced

⇒ Sagging wire will be tightened.

⇒ Broken or missing insulators will be replaced.

⇒ Any broken wires will be spliced or replaced.

⇒ Vegetation will be controlled under the fences.

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

OPERATION AND MAINTENANCE WORKSHEET

SUBSURFACE DRAINAGE
CODE 606

For: Landowner/Operator Mike Bush

Job Location: T 2S; R 9W;Sec.34

County Tillamook SWCD Tillamook Farm/Tract No. T-53

Prepared By Pedersen Date 03/04

Operation and Maintenance Items

Properly operated and maintain subsurface drainage system is an asset to the farm. The drainage system was designed and installed to remove excess subsurface water with a system of buried conduits.. The estimated life span of this installation is at least 10 years. The life of the practice can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require periodic maintenance and may require operational items to maintain satisfactory performance. A good operation and maintenance plan includes:

⇒ Maintain the designed depth of cover. All settlement or cracks in the soil should be investigated to determine the cause and immediately repaired.

⇒ Avoid travel by heavy equipment over drain-lines when the soil is saturated except at designated crossings. Avoid travel over pipelines by tillage equipment when the soil is saturated. Limit traffic to sections that were designed for traffic loads.

⇒ Remove all foreign debris and trash that hinders system operation.

⇒ Immediately remove any obstructions or blockage of, trash racks, drain inlets or drain outlets.

⇒ Maintain all outlets, rodent guards, inlets and access man-holes in good operating condition.

⇒ Eradicate or otherwise remove all rodents and/or burrowing animals that have or can potentially damage any part of the system. Immediately repair any damage caused by their activity.

⇒ Immediately repair any vandalism, vehicular or livestock damage to any outlets and appurtenances.

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

OPERATION AND MAINTENCE WORKSHEET

UNDERGROUND OUTLETS
Code 620

For: Landowner/Operator Mike Bush

Job Location: T 2S; R 9W;Sec. 34

County Tillamook SWCD Tillamook Farm/Tract No. T-53

Prepared By Pedersen Date 03/04

Gutter Outlet

Operation and Maintenance Items

Properly operated and maintained under ground outlet for the guttering system is an asset to the farm. This outlet was designed and installed to convey roof runoff in an underground pipeline to where it can be released without causing erosion. The estimated life span of this installation is at least 10 years. The life of the practice can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require periodic maintenance and may require operational items to maintain satisfactory performance. A good operation and maintenance plan includes:

⇒ Check all above ground connections, rodent guards, inlets and outlets to make sure they are functioning properly.

⇒ Maintain design depth of cover on all pipelines.

⇒ Avoid operation of tillage and sub-soiling equipment that could damage any component of the gutter outlet system.

⇒ Remove all foreign debris that hinders the gutter system operation.

⇒ Limit traffic over pipeline to designated sections that were designated for traffic loads.

⇒ Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization and application of herbicides when necessary. Periodic mowing may also be needed to control growth.

⇒ Eradicate of otherwise remove all rodents or burrowing animals. Immediately repair any damage caused by their activity.

⇒ Immediately repair any vandalism, vehicular livestock damage.

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

OPERATION AND MAINTENANCE WORKSHEET
ROOF RUNOFF MANAGEMENT

CODE 558

For: Landowner/Operator Mike Bush

Job Location: T 2S; R 9W; Sec.34

County Tillamook SWCD Tillamook Farm/Tract No. T 53

Prepared By Pedersen Date 03/04

Gutters and Downspouts

Operation and Maintenance Items

Properly operated and maintained roof runoff facilities are an asset to the farm. Roof runoff facilities were designed and installed to control roof runoff. Estimated life span of this installation is at least 10 years. Facility life can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require periodic maintenance and may require operational items to maintain satisfactory performance. A good operation and maintenance plan includes:

⇒ Perform weekly inspections of gutters, downspouts and above ground pipelines, 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, conveyance pipelines and ditches and appurtenances in good operating condition.

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

OPERATION AND MAINTENANCE WORKSHEET

WASTE STORAGE FACILITY (ROOF)
CODE 313

For: Landowner/Operator Mike Bush

Job Location: T 2; R 19W; Sec. 34

County Tillamook SWCD Tillamook Farm/Tract No. T-53

Prepared By Pedersen Date 03/04

Operation and Maintenance Items

A properly operated and maintained roof is an asset to your farm. These roofs were designed and installed for preventing manure runoff from manure accumulation areas. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation and maintenance to maintain satisfactory performance. A good operation and maintenance plan includes:

⇒ Roof will be inspected weekly.

⇒ All roof sections that are rusted and leaking will be replaced or repaired to prevent rainwater from entering the liquid waste storage system.

⇒ Loose roof sections will be secured.

⇒ Broken trusses, beams, poles, gutters and downspouts will be repaired or replaced.

⇒ Broken trusses, beams, poles, gutters and downspouts will be repaired or replaced on the solid waste storage facilities.

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

OPERATION AND MAINTENANCE WORKSHEET

WASTE STORAGE FACILITY (SOLID MANURE STORAGE FACILITY) CODE 313

For: Landowner/Operator Mike Bush

Job Location: T 2S; R 9W;Sec 34

County Tillamook SWCD Tillamook Farm/Tract No. T-53

Prepared By Pedersen Date 03/04

40' x 40' x 6'

39' x 49' x 6'

Operation and Maintenance Items

A properly operated and maintained waste storage structure is an asset to your farm. This waste storage structure was designed and installed for temporary storage of animal wastes. The estimated life span of this installation is at least 10 years. If at any time a structure is taken out of service, the Natural Resources Division of the Oregon Department of Agriculture should be contacted for guidance in decommissioning the structure to avoid environmental concerns. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation and maintenance to maintain satisfactory performance. A good operation and maintenance plan includes:

⇒ Do not allow equipment that exceeds the design loading to operate within 20 feet of the structure

⇒ Immediately repair any vandalism, vehicular or livestock damage to the structure, earthen areas surrounding the structure, or any appurtenances.

⇒ Storage facility will be empty by October 1st to begin winter storage.

⇒ During de-watering of the structure, ensure that waste is spread at minimum rates in areas where crops are grown, spread waste no closer than 50 feet from open watercourses during the winter months and apply no manure within 35 feet of an open watercourse during the summer months. Avoid applying waste during heavy rainfall events.

⇒ Roofs of the solid manure storage facilities will be inspected annually.

⇒ All roof sections that are rusted and leaking will be repaired and/or replaced.

⇒ Loose roof sections on the solid manure storage facilities will be secured.

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

OPERATION AND MAINTENANCE WORKSHEET

MANURE SEPARATOR
CODE 634

Landowner/Operator: Mike Bush

Job Location: T 2S; R 9W; Sec. 34

County Tillamook SWCD Tillamook Tract No. T-53

Prepared By: Pedersen Date 10/05

Operation and Maintenance Items

A properly operated and maintained manure separator is an asset to your farm. The manure separator was designed and installed to remove solid manure from the liquid manure storage facility so solid manure will not buildup in the bottom of the tank and reduce the designed storage capacity. The estimated life span of this installation is at least 10 years. The life of the manure separator can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation and maintenance to maintain satisfactory performance. A good operation and maintenance plan includes:

⇒ Preventive maintenance will be in accordance with the manufacturer's recommendations.

⇒ Periodically examine the separator for proper operation. Clean debris from the separator, and promptly replace any defective or damaged parts.

⇒ Periodically clean and oil as needed to increase the life expectancy of the separator.

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

OPERATION AND MAINTENANCE WORKSHEET
MANURE TRANSFER

CODE 634

For: Landowner/Operator Brownlee & Mike Bush

Job Location: T 2S; R 9W; Sec.34

County Tillamook SWCD Tillamook Farm/Tract No. T-53

Prepared By Pedersen Date 03/04

Concrete Curb

Operation and Maintenance Items

Properly operated and maintained curbs are an asset to the farm. A curb was designed and installed to control manure runoff and direct the manure towards a storage facility. Estimated life span of this installation is at least 10 years. Facility life can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require periodic maintenance and may require operational items to maintain satisfactory performance. A good operation and maintenance plan includes:

⇒ Periodically check curb for proper operation. Repair or replace if needed.

⇒ Remove any foreign debris from the curb area.

⇒ Prevent manure from flowing over the curb.

⇒ Non-buried pipelines will be inspected weekly to assure there is no leaks that is causing waste spillage. Leaks will be repaired immediately.

⇒ Eradicate or otherwise remove all rodents or burrowing animals that can potentially damage or displace the pipe. Immediately repair any damages caused by their activity.

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

OPERATION AND MAINTENANCE WORKSHEET
IRRIGATION WATER CONVEYANCE

HIGH-PRESSURE UNDERGROUND, PLASTIC PIPELINE
CODE 430-DD

Landowner/Operator Mike Bush

Job Location: T 2S; R 9W;Sec.34

County Tillamook SWCD Tillamook Tract No. T-53

Prepared By Pedersen Date 03/04

Waste Transfer Pipe

Operation and Maintenance Items

A properly operated and maintained waste transfer system is an asset to your farm. This waste transfer system was designed and installed for transferring liquid wastes from a below ground liquid storage facility to an above ground liquid waste storage facility. The estimated life span of this installation is at least 20 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation and maintenance to maintain satisfactory performance. A good operation and maintenance plan includes:

⇒ Check to make sure all values and air vents are set at the proper operating condition so they may provide protection to the pipeline. Remove foreign materials and vegetation that can interfere with proper valve operation.

⇒ Pipeline will be flushed regularly to prevent clogging.

⇒ Leaks or broken sections will be replaced and/or repaired.

⇒ Maintain the designed depth of cover over the pipeline.

⇒ Limit traffic over the pipeline to designated sections that were designed for traffic loads.

⇒ Avoid travel over pipelines by tillage equipment when the soil is saturated.

⇒ Avoid any sub-soiling operation that may disturb the pipeline.

⇒ Maintain a vigorous growth of vegetative covering. This includes reseeding, fertilization and application of herbicides when necessary. Periodic mowing may also be needed to control height of vegetation.

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

OPERATION AND MAINTENANCE WORKSHEET

MANURE TANK AGITATOR
CODE 634

Landowner/Operator: Mike Bush

Job Location: T 2S; R 9W; Sec. 34

County Tillamook SWCD Tillamook Tract No. T-53

Prepared By: Pedersen Date 03/04

Operation and Maintenance Items

A properly operated and maintained manure tank agitator is an asset to your farm. The manure agitator was designed and installed to stir the liquid waste and keep the solids in suspension so solid manure will not buildup in the bottom of the tank and reduce the designed storage capacity. The estimated life span of this installation is at least 10 years. The life of the manure agitator can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation and maintenance to maintain satisfactory performance. A good operation and maintenance plan includes:

⇒ Preventive maintenance will be in accordance with the manufacturer's recommendations.

⇒ Periodically examine the agitator for proper operation. Clean debris from the propeller, and promply replace any defective or damaged parts.

⇒ Remove the agitator from the manure tank and periodically clean and oil as needed to increase the life expectancy of the agitator.

⇒ Immediately repair any vandalism or livestock damage. Do not allow livestock near equipment during operation.

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

OPERATION AND MAINTENANCE WORKSHEET

MANURE PUMP
CODE 634

Landowner/Operator: Mike Bush

Job Location: T 2S; R 9W. Sec. 34

County Tillamook SWCD Tillamook Tract No. T-34

Prepared By: Pedersen Date 03/04

Operation and Maintenance Items

A properly operated and maintained manure pump is an asset to your farm. The manure pump was designed to transfer the liquid waste to the pasture for application. The estimated life span of this installation is at least 10 years. The life of the manure pump can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation and maintenance to maintain satisfactory performance. A good operation and maintenance plan includes:

⇒ Preventive maintenance will be in accordance with the manufacturer's recommendations.

⇒ Periodically examine the pump for proper operation. Clean debris from the propeller, and promptly replace any defective or damaged parts.

⇒ Periodically clean and oil as needed to increase the life expectancy of the pump.

⇒ Immediately repair any vandalism or livestock damage. Do not allow livestock near equipment during operation.

⇒ A one foot free board will be maintained to prevent spillage.

⇒ The waste storage facility will be inspected weekly to ensure structural integrity.

⇒ Perform daily inspections of waterlines, including drinking water or cooling water lines. Repair leaking lines immediately to prevent excess water from entering the waste storage system.

⇒ Depth markers are installed in the facility and maintained to assure the maximum volume will be maintained under normal operating conditions allowing for the volume necessary to contain the 25-year, 24-hour rainfall event.

⇒ The depth of all liquid manure will be recorded during each week's inspection.

⇒ Immediately repair any vandalism, vehicular or livestock damage to the structure, earthen areas surrounding the structure, or any appurtenances.

⇒ Pump out the facility within the first two years following construction to check for structural damage. If damage is noted, immediately seek a qualified engineer to assess the situation. Thereafter, it should be pumped out at least every four years to check for damages, remove gravel, rocks, sand, wire and other debris to maintain the designed storage capacity capacity.

⇒ Immediately remove all foreign debris within the structure that may cause damage to pumps and agitator.

⇒ During de-watering of the structure, ensure that waste is spread at minimum rates in areas where crops are grown, spread waste no closer than 50 feet from open watercourses during the winter months and apply no manure within 35 feet of an open watercourse during the summer months. Avoid applying waste during heavy rainfall events.

⇒ Dead animals will not be disposed of in the liquid waste storage facility.

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

OPERATION AND MAINTENANCE WORKSHEET

WASTE STORAGE FACILITY
CODE 313

For: Landowner/Operator: Mike Bush

Job Location: T 2S; R 9W; Sec 34;

County Tillamook SWCD Tillamook Farm/Tract No. T-53

Prepared By Pedersen Date 03/04

9' x 24' x 6' rectangular below ground liquid waste storage tank

21' x 41' x 8' rectangular below ground liquid waste storage tank

9' x 32' x 4' rectangular below ground liquid waste storage tank

80' x 16' above ground liquid waste storage tank.

Operation and Maintenance Items

A properly operated and maintained waste storage structure is an asset to your farm. This waste storage structure was designed and installed for temporary storage of animal wastes. The estimated life span of this installation is at least 10 years. If at any time this structure is taken out of service, the Natural Resources Division of the Oregon Department of Agriculture should be contacted for guidance in decommissioning the structure to avoid environmental concerns. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation and maintenance to maintain satisfactory performance. A good operation and maintenance plan includes:

⇒ Do not allow equipment that exceeds the design loading to operate within 20 feet of the structure.

⇒ **WARNING: ENTERING AN UNVENTILATED TANK IS EXTEREMELY "HAZARDOUS" !** Do not allow human entry into the enclosed structure without safety equipment that includes ladders and breathing apparatus.

⇒ Continually maintain all pumps, agitators, piping, valves and all other electrical and mechanical equipment in good operating condition by following the manufacturer's recommendations.

⇒ Continually maintain grounding rods and wiring for all electrical equipment in good condition.

⇒ Facilities will be empty by October 1st to begin winter storage.

ANIMAL WASTE MANAGEMENT WORKSHEET

Version 2.4

CLIENT: **ORAWM**
ASSISTED BY: **CMT**

CHECKED BY:

ANIMAL WASTE MANAGEMENT SYSTEM PRODUCTION

MONTHLY VOLUMES

	Runoff in Cubic Feet					Manure		Bedding		Solids Separated		Solids in Liquids		Total Solids	Total Liquids
	Roof Area Square Feet	Paved Slab Area Square Feet	Unpaved Lot Area Square Feet	Silage Pit Surface Area, SF	Facility Water Use	Solids	Liquids								
Month	0	0	0	0	Cubic Feet	Cubic Feet	Cubic Feet	Cubic Feet	Pounds	Cubic Feet	Pounds	Cubic Feet	Pounds	Cubic Feet	Cubic Feet
October	0	0	0	0	3,274	841	4,475	1,362	11,214	1,467	52,814	736	26,504	1,467	8,741
November	0	0	0	0	3,168	2,277	8,662	2,746	23,696	3,598	129,520	1,425	51,299	3,598	14,055
December	0	0	0	0	3,274	2,571	8,951	2,905	25,101	4,004	144,154	1,472	53,008	4,004	14,208
January	0	0	0	0	3,274	2,571	8,951	2,905	25,101	4,004	144,154	1,472	53,008	4,004	14,208
February	0	0	0	0	2,957	2,323	8,084	2,624	22,672	3,617	130,204	1,330	47,879	3,617	13,749
March	0	0	0	0	3,274	2,316	7,160	2,425	20,776	3,563	128,251	1,178	42,407	3,563	12,022
April	0	0	0	0	3,168	1,658	4,331	1,583	13,233	2,529	91,046	712	25,649	2,529	8,612
May	0	0	0	0	3,274	1,168	4,475	1,465	12,137	1,897	68,289	736	26,504	1,897	8,741
June	0	0	0	0	3,168	814	4,331	1,319	10,853	1,420	51,110	712	25,649	1,420	8,612
July	0	0	0	0	3,274	841	4,475	1,362	11,214	1,467	52,814	736	26,504	1,467	8,741
August	0	0	0	0	3,274	841	4,475	1,362	11,214	1,467	52,814	736	26,504	1,467	8,741
September	0	0	0	0	3,168	814	4,331	1,319	10,853	1,420	51,110	712	25,649	1,420	8,612
Annual	0	0	0	0	38,549	19,035	72,701	23,378	198,063	30,452	1,096,278	11,960	430,566	30,452	129,044

DAILY NUTRIENT PRODUCTION

	Pounds/Day of Nutrients from LIQUIDS			Pounds/Day of Nutrients from SOLIDS			Pounds/Day of Nutrients from GRAZING		
Type of Animal	N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O
MILKER	47.81	18.56	32.55	71.71	27.84	48.83	119.52	46.39	81.39
MILKER (DRY)	0.00	0.00	0.00	11.52	3.67	8.87	11.52	3.67	8.87
CALVES (1-12 Months)	0.00	0.00	0.00	1.55	0.46	1.45	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	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

MONTHLY NUTRIENT PRODUCTION

	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		
Month	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	741	288	505	1,160	446	802	2,210	833	1,536	0	0	0	4,110	1,566	2,843
November	1,434	557	977	2,474	937	1,721	69	22	53	0	0	0	3,978	1,515	2,751
December	1,482	575	1,009	2,628	991	1,834	0	0	0	0	0	0	4,110	1,566	2,843
January	1,482	575	1,009	2,628	991	1,834	0	0	0	0	0	0	4,110	1,566	2,843
February	1,339	520	912	2,374	895	1,656	0	0	0	0	0	0	3,713	1,414	2,568
March	1,186	460	807	2,184	818	1,531	741	288	505	0	0	0	4,110	1,566	2,843
April	717	278	488	1,399	519	989	1,862	718	1,274	0	0	0	3,978	1,515	2,751
May	741	288	505	1,267	480	884	2,103	799	1,454	0	0	0	4,110	1,566	2,843
June	717	278	488	1,122	431	776	2,138	806	1,487	0	0	0	3,978	1,515	2,751
July	741	288	505	1,160	446	802	2,210	833	1,536	0	0	0	4,110	1,566	2,843
August	741	288	505	1,160	446	802	2,210	833	1,536	0	0	0	4,110	1,566	2,843
September	717	278	488	1,122	431	776	2,138	806	1,487	0	0	0	3,978	1,515	2,751
Annual	**12,038**	**4,673**	**8,197**	**20,677**	**7,830**	**14,405**	**15,681**	**5,936**	**10,869**	**0**	**0**	**0**	**48,396**	**18,438**	**33,471**

ANIMAL WASTE MANAGEMENT WORKSHEET
Version 2.4

CLIENT: ORAWM
ASSISTED BY: CMT
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
MILKER	Free Stall	Wood Shavings	9.00	3.10	0.34	78	698
MILKER (DRY)	Free Stall	Wood Shavings	9.00	3.10	0.34	11	99
CALVES (1-12 Months)	Free Stall	Loose Straw	2.50	2.60	1.04	5	13

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
MILKER	Press Type (Screw or Roller)	60%	71	47	305	25	87	36	2,565
MILKER (DRY)	Press Type (Screw or Roller)	100%	46	0	0	35	0	36	1,664
CALVES (1-12 Months)	Press Type (Screw or Roller)	100%	12	0	0	7	0	36	421
Total Solids>>>			129	47	305	66	87		4,650

U.S. Department of Agriculture
Natural Resources Conservation Service

ANIMAL WASTE MANAGEMENT WORKSHEET
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851506
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ANIMAL WASTE MANAGEMENT SYSTEM INVENTORY

ANIMAL INVENTORY

Type of Animal	Number of Animals	Average Weight (lbs.)	Animal Units (1,000 lb.)	Milk Production in Pounds/Cow/Day= 60						Manure CF/D/AU	Annual	
				Nutrient Production								
				(lbs./day/1000 lb. Animal Unit)			(lbs./day)					
				N	P	K	N	P	K		Days Confined	Days Grazed
MILKER	250	900	225.0	0.53	0.09	0.30	119.52	20.25	67.54	1.47	252	113
MILKER (DRY)	32	1,000	32.0	0.36	0.05	0.23	11.52	1.60	7.36	1.10	178	187
CALVES (1-12 Months)	50	100	5.0	0.31	0.04	0.24	1.55	0.20	1.20	1.30	365	0
Totals/Averages-	332	667	262.0	0.51	0.08	0.29	132.6	22.1	76.1	1.4		

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.
MILKER	50%	0%	0%	0%	0%	20%	50%	50%	50%	50%	50%	50%	
	250	250	250	250	250	250	250	250	250	250	250	250	833
MILKER (DRY)	100%	20%	0%	0%	0%	0%	20%	70%	100%	100%	100%	100%	
	32	32	32	32	32	32	32	32	32	32	32	32	195
CALVES (1-12 Months)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	50	50	50	50	50	50	50	50	50	50	50	50	0
													0
													0
													0
													0
													0
													0
													0
Total AUM's Available>	99						102	102	102	101	101	101	708
Total AUM's Needed>>>	145	6	0	0	0	45	119	135	145	145	145	145	1,028
Total AUM's>>>>>>>>>>	-46	-6	0	0	0	-45	-17	-33	-43	-44	-44	-44	-320

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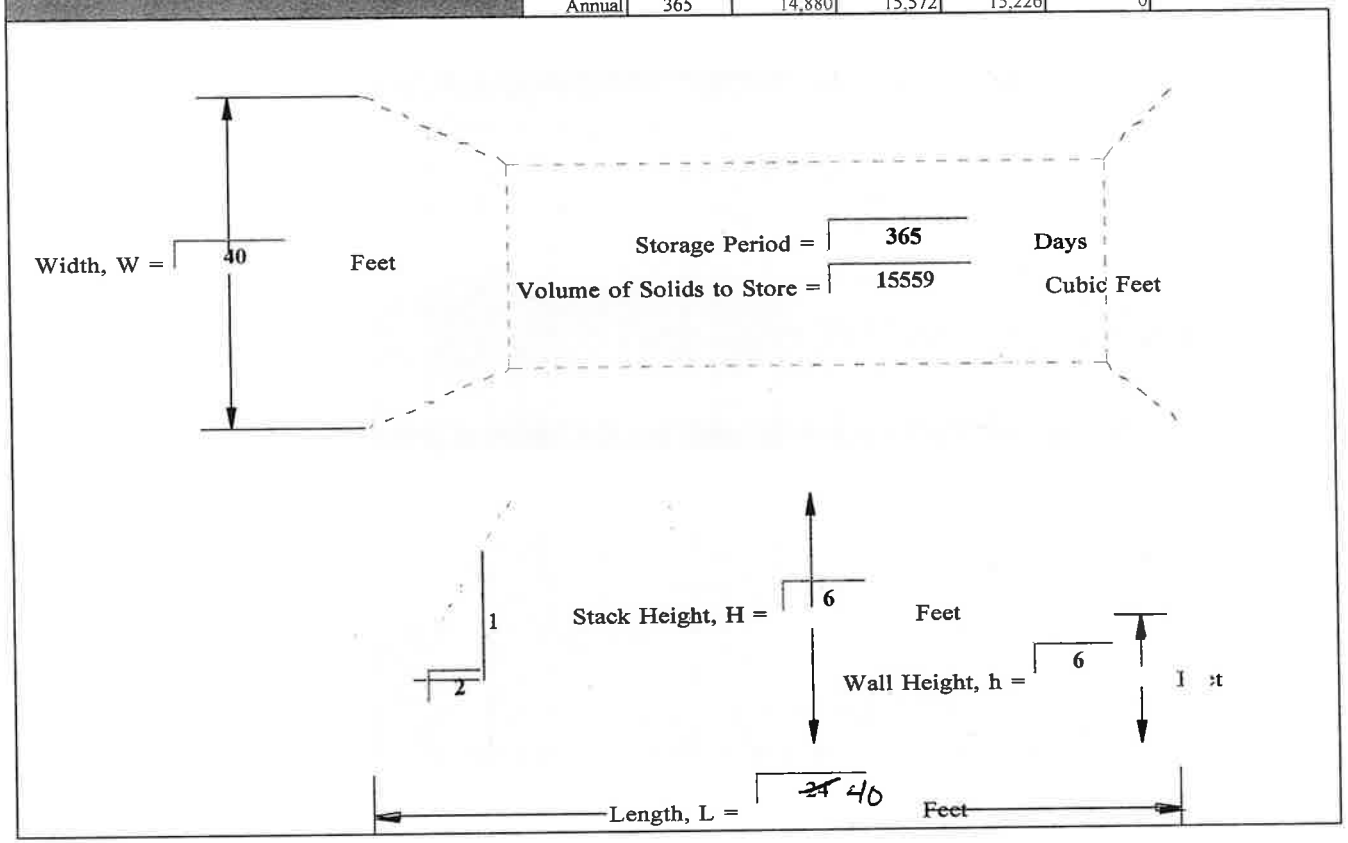
ANIMAL WASTE MANAGEMENT SYSTEM STORAGE

SOLIDS STACKING FACILITY

Solids Storage Facility Parameters	Value
Storage Period, Days=	365
Stacking Width, W in Feet=	40
Stacking Height, H in Feet=	6.00
Wall Height, h in Feet=	6.00
Stack Side Slope (X:1)=	2.00
Existing Storage, Cubic Feet=	11,466
Surface Area of Existing Storage, SF=	0
25 Year-24 Hour Storm Runoff, CF=	0
Volume Needed, Cubic Feet=	15,559
Design Volume, Cubic Feet=	4,320
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	585	882	734	0
November	30	1782	1,816	1,799	0
December	31	2060	1,944	2,002	0
January	31	2060	1,944	2,002	0
February	28	1861	1,756	1,808	0
March	31	1906	1,656	1,781	0
April	30	1411	1,118	1,265	0
May	31	912	984	948	0
June	30	566	854	710	0
July	31	585	882	734	0
August	31	585	882	734	0
September	30	566	854	710	0
Annual	365	14,880	15,572	15,226	0



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ANIMAL WASTE MANAGEMENT WORKSHEET

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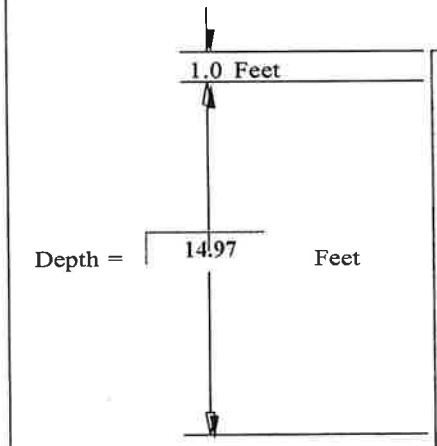
ANIMAL WASTE MANAGEMENT SYSTEM STORAGE

TANK

Tank Parameters	Value
Storage Period, Days=	128
Tank Diameter, Feet=	80
Existing Storage, Cubic Feet=	7,971.00
Surface Area of Existing Storage, SF=	0
25 Year-24 Hour Storm Runoff, CF=	0
Volume Needed, Cubic Feet=	83,196
Design Volume, Cubic Feet=	75,209
Is Tank Covered?	NO
Tank Dimensions?	Circular

MONTHLY INFLOWS INTO TANK

Month	Number of days	Rain-Evap on Tank CF	Rain-Evap on Existing Storage, CF	Normal Runoff CF	Washwater CF	Manure CF
October	31	2,537	0	0	3,274	4,731
November	30	5,045	0	0	3,168	9,157
December	31	5,715	0	0	3,274	9,462
January	31	5,434	0	0	3,274	9,462
February	28	4,049	0	0	2,957	8,546
March	31	3,806	0	0	3,274	7,570
April	30	1,729	0	0	3,168	4,578
May	31	427	0	0	3,274	4,731
June	30	-100	0	0	3,168	4,578
July	31	-1,034	0	0	3,274	4,731
August	31	-749	0	0	3,274	4,731
September	30	481	0	0	3,168	4,578
Annual	365	27,339	0	0	38,549	76,856



Minimum Freeboard =	1.0 Feet	
25Yr-24Hr Storm Precipitation =	6	Inches
25Yr-24Hr Storm Runoff =	0	Cubic Feet
128 Day Precip - Evap =	50.774	Inches
Runoff from Normal Precipitation =	0	Cubic Feet
Washwater =	13546	Cubic Feet
Manure =	38645	Cubic Feet
Diameter =	80	Feet

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ANIMAL WASTE MANAGEMENT SYSTEM APPLICATION

MANAGEMENT CRITERIA FOR TRACTOR SPREADER APPLICATION OF SOLIDS

To apply 30,452 cubic feet of solids generated from the operation it will take approximately 122 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 Bushels	Tractor Spreader Capacity CF	Spread Width Feet	NITROGEN, N Concentration in Storage Facility PPM	NITROGEN, N Concentration in Storage Facility Lbs/100CF	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
T53 1	8.1	Hay/Pasture Mix 20% Protein	200	249	15	8,161	50.93	384	1.00	0.3	584	5
2	7.4	Hay/Pasture Mix 20% Protein	200	249	15	8,161	50.93	384	1.00	0.3	584	5
3	5.7	Hay/Pasture Mix 20% Protein	200	249	15	8,161	50.93	384	1.00	0.3	584	5
4	6.9	Hay/Pasture Mix 20% Protein	200	249	15	8,161	50.93	384	1.00	0.3	584	5
T477 1	29.7	Hay/Pasture Mix 20% Protein	200	249	15	8,161	50.93	384	1.00	0.3	584	5
2-7	16.9	Hay/Pasture Mix 20% Protein	200	249	15	8,161	50.93	384	1.00	0.3	584	5
T647 1	3.3	Hay/Pasture Mix 20% Protein	200	249	15	8,161	50.93	384	1.00	0.3	584	5
2	3.6	Hay/Pasture Mix 20% Protein	200	249	15	8,161	50.93	384	1.00	0.3	584	5
0												

MANAGEMENT CRITERIA FOR BIG GUN SPRINKLER APPLICATION OF LIQUIDS

To apply 965,249 gallons of liquids generated from the operation it will take approximately 54 hours of pumping annually. Based on applying NITROGEN, N
at agronomic rate use the application depths, set times, and travel rates listed below for each crop.

Field Number	Acres	Crop	Sprinkler Flowrate GPM	Wetted Diameter Feet	Portion of Wetted Diameter Receiving Liquids	NITROGEN, N Concentration in Storage Facility PPM	NITROGEN, N Concentration in Storage Facility Lbs/1000Gal	Pounds of Nutrients to be Applied	Number of Applications Needed to meet Crop Demand	Inches of Liquids to Apply	Application Rate in Inches/Hour	Set Time Needed in Hours	Travel Rate Needed in Feet/Minute
T53 1	8.1	Hay/Pasture Mix 20% Protein	300	250	1/2 Circle	1,046	8.73	384	1.00	2.48	1.45	4.21	0.78
2	7.4	Hay/Pasture Mix 20% Protein	300	250	1/2 Circle	1,046	8.73	384	1.00	2.48	1.45	4.21	0.78
3	5.7	Hay/Pasture Mix 20% Protein	300	250	1/2 Circle	1,046	8.73	384	1.00	2.48	1.45	4.21	0.78
4	6.9	Hay/Pasture Mix 20% Protein	300	250	1/2 Circle	1,046	8.73	384	1.00	2.48	1.45	4.21	0.78
T477 1	29.7	Hay/Pasture Mix 20% Protein	300	250	1/2 Circle	1,046	8.73	384	1.00	2.48	1.45	4.21	0.78
2-7	16.9	Hay/Pasture Mix 20% Protein	300	250	1/2 Circle	1,046	8.73	384	1.00	2.48	1.45	4.21	0.78
T647 1	3.3	Hay/Pasture Mix 20% Protein	300	250	1/2 Circle	1,046	8.73	384	1.00	2.48	1.45	4.21	0.78
2	3.6	Hay/Pasture Mix 20% Protein	300	250	1/2 Circle	1,046	8.73	384	1.00	2.48	1.45	4.21	0.78
0													

CLIENT: **ORAWM**
ASSISTED BY: **CMT**

CHECKED BY:

ANIMAL WASTE MANAGEMENT SYSTEM APPLICATION

MANAGEMENT CRITERIA FOR TANK WAGON APPLICATION OF LIQUIDS

To apply 965,249 gallons of liquids generated from the operation it will take approximately 420 trips annually. Based on applying NITROGEN, N
at agronomic rates use the application depths, travel lengths, and loads per acre listed below for each crop.

Field Number	Acres	Crop	Tank Wagon Capacity Gallons	Spread Width Feet	NITROGEN, N Concentration in Storage Facility PPM	NITROGEN, N Concentration in Storage Facility Lbs/1000Gal	Pounds of Nutrients to be Applied	Number of Applications Needed to meet Crop Demand	Inches of Liquids to Apply	Travel Length per Load Needed in Feet	Loads per Acre
T53 1	8.1	Hay/Pasture Mix 20% Protein	2,300	15	1,046	8.73	384	1.00	1.06	233	12.5
2	7.4	Hay/Pasture Mix 20% Protein	2,300	15	1,046	8.73	384	1.00	1.06	233	12.5
3	5.7	Hay/Pasture Mix 20% Protein	2,300	15	1,046	8.73	384	1.00	1.06	233	12.5
4	6.9	Hay/Pasture Mix 20% Protein	2,300	15	1,046	8.73	384	1.00	1.06	233	12.5
T477 1	29.7	Hay/Pasture Mix 20% Protein	2,300	15	1,046	8.73	384	1.00	1.06	233	12.5
2-7	16.9	Hay/Pasture Mix 20% Protein	2,300	15	1,046	8.73	384	1.00	1.06	233	12.5
T647 1	3.3	Hay/Pasture Mix 20% Protein	2,300	15	1,046	8.73	384	1.00	1.06	233	12.5
2	3.6	Hay/Pasture Mix 20% Protein	2,300	15	1,046	8.73	384	1.00	1.06	233	12.5
0											

U.S. Department of Agriculture
Natural Resources Conservation Service

ANIMAL WASTE MANAGEMENT WORKSHEET
Version 2.4

851506
STATE: OREGON

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ANIMAL WASTE MANAGEMENT SYSTEM UTILIZATION

NUTRIENTS AVAILABLE AFTER STORAGE

Nutrient Source	Type of Operation / Type of Storage Facility	Pounds of Nutrients Available N	Pounds of Nutrients Available P_2O_5	Pounds of Nutrients Available K_2O	Percent Nutrients Retained After Storage N	Percent Nutrients Retained After Storage P_2O_5	Percent Nutrients Retained After Storage K_2O	Re N
Liquids	Dairy / Tank (Uncovered)	12,038	4,673	8,197	**70%**	**85%**	**85%**	8,427
Solids	Dairy / Solids Storage Facility (Roofed)	20,677	7,830	14,405	**75%**	**90%**	**90%**	15,508
Grazing	NONE	15,681	5,936	10,869	**100%**	**100%**	**100%**	15,681

NUTRIENTS AVAILABLE AFTER APPLICATION

Nutrient Source	Type of Application System	Pounds of Nutrients Available N	Pounds of Nutrients Available P_2O_5	Pounds of Nutrients Available K_2O	Percent Nutrients Retained After Application N	Percent Nutrients Retained After Application P_2O_5	Percent Nutrients Retained After Application K_2O	Reta N
Liquids	Sprinkling	8,427	3,972	6,968	**75%**	**100%**	**100%**	6,320
Solids	Broadcast (Incorporated 7 or more days after application)	15,508	7,047	12,964	**70%**	**100%**	**100%**	10,856
Grazing	Grazing	15,681	5,936	10,869	**90%**	**100%**	**100%**	14,113

NUTRIENTS AVAILABLE AFTER DENITRIFICATION

Nutrient Source	Location: Coast / Soil Drainage Class	Pounds of Nutrients Available N	Pounds of Nutrients Available P_2O_5	Pounds of Nutrients Available K_2O	Percent Nutrients Retained After Denitrification N	Percent Nutrients Retained After Denitrification P_2O_5	Percent Nutrients Retained After Denitrification K_2O	Retair N
Liquids	Coast / Well Drained	6,320	3,972	6,968	**87%**	**100%**	**100%**	5,499
Solids	Coast / Well Drained	10,856	7,047	12,964	**87%**	**100%**	**100%**	9,444
Grazing	Coast / Well Drained	14,113	5,936	10,869	**87%**	**100%**	**100%**	12,278

CLIENT: **ORAWM**
ASSISTED BY: **CMT**

CHECKED BY:

ANIMAL WASTE MANAGEMENT SYSTEM UTILIZATION

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

Field Number	Acres	Crop	LIQUIDS			SOLIDS			GRAZING	
			Percent to be Applied	Pounds of Nutrients to be Applied	Acres Needed for Utilization of Nutrients	Percent to be Applied	Pounds of Nutrients to be Applied	Acres Needed for Utilization of Nutrients	Percent to be Applied	Pounds of Nutrients to be Applied
T53 1	8.1	Hay/Pasture Mix 20% Protein	8%	458	1	8%	758	2	15%	1,842
2	7.4	Hay/Pasture Mix 20% Protein	7%	382	1	7%	695	2	14%	1,719
3	5.7	Hay/Pasture Mix 20% Protein	5%	267	1	5%	442	1	12%	1,473
4	6.9	Hay/Pasture Mix 20% Protein	14%	764	2	13%	1,263	3	0%	0
T477 1	29.7	Hay/Pasture Mix 20% Protein	28%	1,528	4	27%	2,526	7	59%	7,244
2-7	16.9	Hay/Pasture Mix 20% Protein	28%	1,565	4	28%	2,685	7	0%	0
T647 1	3.3	Hay/Pasture Mix 20% Protein	4%	233	1	4%	388	1	0%	0
2	3.6	Hay/Pasture Mix 20% Protein	5%	301	1	7%	687	2	0%	0
0										
Off-Farm			0%	0		0%	0		0%	0
		TOTALS-	100%	5,499	14	100%	9,444	25	100%	12,278

NUTRIENT BALANCE BASED ON AVAILABLE ACRES

Field Number	Acres	Crop	NUTRIENTS APPLIED			- NUTRIENTS REMOVED			= NUTRIENT BALANCE	
			Nitrogen, N Lbs/Acre	Phosphorous, P_2O_5 Lbs/Acre	Potassium, K_2O Lbs/Acre	Nitrogen, N Lbs/Acre	Phosphorous, P_2O_5 Lbs/Acre	Potassium, K_2O Lbs/Acre	Nitrogen, N Lbs/Acre	Phosphorous, P_2O_5 Lbs/Acre
T53 1	8.1	Hay/Pasture Mix 20% Protein	378	221	401	384	106	294	-6	115
2	7.4	Hay/Pasture Mix 20% Protein	378	220	400	384	106	294	-6	114
3	5.7	Hay/Pasture Mix 20% Protein	383	217	395	384	106	294	-1	111
4	6.9	Hay/Pasture Mix 20% Protein	294	217	392	384	106	294	-90	111
T477 1	29.7	Hay/Pasture Mix 20% Protein	380	219	398	384	106	294	-4	113
2-7	16.9	Hay/Pasture Mix 20% Protein	251	185	335	384	106	294	-133	80
T647 1	3.3	Hay/Pasture Mix 20% Protein	188	139	251	384	106	294	-196	33
2	3.6	Hay/Pasture Mix 20% Protein	274	203	368	384	106	294	-110	97
0										
Off-Farm										

Pounds of Nutrients etained After Storage	
P_2O_5	K_2O
3,972	6,968
7,047	12,964
5,936	10,869

Pounds of Nutrients ained After Application	
P_2O_5	K_2O
3,972	6,968
7,047	12,964
5,936	10,869

Pounds of Nutrients ined After Denitrification	
P_2O_5	K_2O
3,972	6,968
7,047	12,964
5,936	10,869

Acres Needed for Utilization of Nutrients
5
4
4
0
19
0
0
0
32

Potassium, K_2O Lbs/Acre
108
106
101
98
104
42
-43
74

Tract 53 Fields 2

SOURCE FACTORS	Factor Weight	PHOSPHORUS LOSS RATING None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Weighted Rating Value Current	Planned
Soil Test P – ppm (Bray P1)	1.00	(Soil Test P – 40) / 10 (59 - 40) x .10 = 1.9 (Soil Test P; ppm) Assign 0 points if Soil Test P < 40					1.9	1.9
Commercial P Fertilizer Application Rate	1.00	lbs/ac P_2O_5 x 0.02 ___0___ (lbs/ac P_2O_5) x 0.02 = _____					0	0
Commercial P Fertilizer Application Method	1.00	None Applied (0)	Injected / banded deeper than 2 inches OR Incorporated within 5 days of application from March through September (1.0)	Incorporated within 5 days of application from October through February OR Surface applied March through August (2.0)	Incorporated more than 5 days after application OR Surface applied September through October (4.0)	Surface applied November through February (8.0)	0	0
Organic P Source Application Rate	1.00	lbs/ac P_2O_5 x 0.02 ___180___ (lbs/ac P_2O_5) x 0.02 = _____					3.6	3.6
Organic P Source Application Method	1.00	None Applied (0)	Injected deeper than 2 inches OR Incorporated within 5 days of application from March through September (1.0)	Incorporated within 5 days of application from October through February OR Surface applied March through August (2.0)	Incorporated more than 5 days after application OR Surface applied September through October (4.0)	Surface applied November through February (8.0)	8	1

Total Rating Value TFS + SFS	Site Vulnerability Class
< 13.0	**Low**
13.0 – 25.0	**Medium**
25.1 – 50.0	**High**
> 50.0	**Very High**

	Current	Planned
Transport Factors Subtotal (TFS)	3.0	0.75
Source Factors Subtotal (SFS)	8.0	1.0
Total Rating Value (TFS + SFS)	**11.0**	**1.75**
Site Vulnerability Class	**Low**	**Low**

PHOSPHORUS INDEX WORKSHEET – **WESTERN** OREGON

Producer :Mike Bush County:Tillamook Tract No. 53 Field No(s).2 Date:01/25/01

Soil Map Unit(s): **QaB** Soil Test P: 59 ppm Lab. Method: Weak Bray Sample Depth: 1 ft

Crop Rotation: Permanent Pasture Nutrient Application Method(s) Tank wagon & manure spreader

Planner: **Pedersen** Notes:

TRANSPORT FACTORS	Factor Weight	PHOSPHORUS LOSS RATING					Weighted Rating Value	
		None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Current	Planned
Soil Erosion – tons/ac/yr (RUSLE)	1.50	< 1 (0)	1 – 3 (1.5)	4 – 6 (3.0)	7 – 15 (6.0)	> 15 (12.0)	0	0
Soil Erosion from Sprinkler Irrigation	0.75	No sprinkler irrigation (0)	Application rate < infiltration rate OR No visible runoff at field borders (0.75)	Application rate = infiltration rate OR Little to no visible runoff at field borders (1.5)	Application rate > infiltration rate OR Visible runoff at field borders (3.0)	Application rate > infiltration rate OR Excessive runoff visible at field borders. Rills and gullies present. (6.0)	0	0
Runoff Class	1.00	Negligible (0)	Very low or low (1.0)	Medium (2.0)	High (4.0)	Very High (8.0)	1	1
Flooding Frequency Class	0.75	None or very rare (0)	Rare (0.75)	Occasional (1.5)	Frequent (3.0)	Very Frequent (6.0)	0	0
Distance to Perennial Surface Waters / Buffer Widths	0.75	> 500 feet OR buffer > 30 ft. wide (or meets NRCS standards) next to surface waters (0)	300 – 500 feet OR buffer 20 - 30 ft. wide next to surface waters (0.75)	200 – 299 feet OR buffer 10 -19 ft. wide next to surface waters (1.5)	100 – 199 feet AND buffer < 10 ft. wide next to surface waters (3.0)	< 100 feet AND No buffer next to surface waters (6.0)	3.0	0.75
Subsurface Drainage	0.50	No Tile Drains (0)	Tile drains present Soil Test P (Bray P1) < 60 ppm (0.5)	Tile drains present Soil Test P (Bray P1) 61 - 140 ppm (1.0)	Tile drains present Soil Test P (Bray P1) 141- 190 ppm (2.0)	Tile drains present Soil Test P (Bray P1) > 190 ppm (4.0)	0	0
						Transport Factors Subtotal (TFS)	3	0.75

53 Fields 3

SOURCE FACTORS	Factor Weight	PHOSPHORUS LOSS RATING None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Weighted Rating Value Current	Planned
Soil Test P – ppm (Bray P1)	1.00	(Soil Test P – 40) / 10 (27 (Soil Test P) - 40) x .10 = 0 Assign 0 points if Soil Test P < 40 ppm					0	0
Commercial P Fertilizer Application Rate	1.00	lbs/ac P_2O_5 x 0.02 0 (lbs/ac P_2O_5) x 0.02 =					0	0
Commercial P Fertilizer Application Method	1.00	None Applied (0)	Injected / banded deeper than 2 inches OR Incorporated within 5 days of application from March through September (1.0)	Incorporated within 5 days of application from October through February OR Surface applied March through August (2.0)	Incorporated more than 5 days after application OR Surface applied September through October (4.0)	Surface applied November through February (8.0)	0	0
Organic P Source Application Rate	1.00	lbs/ac P_2O_5 x 0.02 180 (lbs/ac P_2O_5) x 0.02 =					3.6	3.6
Organic P Source Application Method	1.00	None Applied (0)	Injected deeper than 2 inches OR Incorporated within 5 days of application from March through September (1.0)	Incorporated within 5 days of application from October through February OR Surface applied March through August (2.0)	Incorporated more than 5 days after application OR Surface applied September through October (4.0)	Surface applied November through February (8.0)	8	1

Total Rating Value TFS + SFS	Site Vulnerability Class
< 13.0	**Low**
13.0 – 25.0	**Medium**
25.1 – 50.0	**High**
> 50.0	**Very High**

	Current	Planned
Transport Factors Subtotal (TFS)	7.0	3.75
Source Factors Subtotal (SFS)	11.6	4.6
Total Rating Value (TFS + SFS)	**18.6**	**8.35**
Site Vulnerability Class	**Medium**	**Low**

PHOSPHORUS INDEX WORKSHEET – **WESTERN** OREGON

Producer :Mike Bush County:Tillamook Tract No. 53 Field No(s).3 Date:01/25/01

Soil Map Unit(s): GsB__ Soil Test P: __27___ ppm Lab. Method: _Weak Bray Sample Depth: _1 ft_____

Crop Rotation: _Permanent Pasture___ Nutrient Application Method(s) _Tank wagon & manure spreader

Planner: _**Pedersen**_ Notes: _____

		PHOSPHORUS LOSS RATING					Weighted Rating Value	
TRANSPORT FACTORS	Factor Weight	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Current	Planned
Soil Erosion – tons/ac/yr (RUSLE)	1.50	< 1 (0)	1 – 3 (1.5)	4 – 6 (3.0)	7 – 15 (6.0)	> 15 (12.0)	___0___	__0___
Soil Erosion from Sprinkler Irrigation	0.75	No sprinkler irrigation (0)	Application rate < infiltration rate OR No visible runoff at field borders (0.75)	Application rate = infiltration rate OR Little to no visible runoff at field borders (1.5)	Application rate > infiltration rate OR Visible runoff at field borders (3.0)	Application rate > infiltration rate OR Excessive runoff visible at field borders. Rills and gullies present. (6.0)	__0____	__0____
Runoff Class	1.00	Negligible (0)	Very low or low (1.0)	Medium (2.0)	High (4.0)	Very High (8.0)	__1____	__1___
Flooding Frequency Class	0.75	None or very rare (0)	Rare (0.75)	Occasional (1.5)	Frequent (3.0)	Very Frequent (6.0)	3.0	3.0
Distance to Perennial Surface Waters / Buffer Widths	0.75	> 500 feet OR buffer > 30 ft. wide (or meets NRCS standards) next to surface waters (0)	300 – 500 feet OR buffer 20 - 30 ft. wide next to surface waters (0.75)	200 – 299 feet OR buffer 10 -19 ft. wide next to surface waters (1.5)	100 – 199 feet AND buffer < 10 ft. wide next to surface waters (3.0)	< 100 feet AND No buffer next to surface waters (6.0)	3.0	0.75
Subsurface Drainage	0.50	No Tile Drains (0)	Tile drains present Soil Test P (Bray P1) < 60 ppm (0.5)	Tile drains present Soil Test P (Bray P1) 61 - 140 ppm (1.0)	Tile drains present Soil Test P (Bray P1) 141- 190 ppm (2.0)	Tile drains present Soil Test P (Bray P1) > 190 ppm (4.0)	0	0
						Transport Factors Subtotal (TFS)	7	3.75

Tract 53 Fields 4

SOURCE FACTORS	Factor Weight	PHOSPHORUS LOSS RATING None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Weighted Rating Value Current	Planned
Soil Test P – ppm (Bray P1)	1.00	(Soil Test P – 40) / 10	(22 / Soil Test P - 40) x .10 = 0			Assign 0 points if Soil Test P < 40 ppm	0	0
Commercial P Fertilizer Application Rate	1.00	lbs/ac P_2O_5 x 0.02	0 / lbs/ac P_2O_5 x 0.02 =				0	0
Commercial P Fertilizer Application Method	1.00	None Applied (0)	Injected / banded deeper than 2 inches OR Incorporated within 5 days of application from March through September (1.0)	Incorporated within 5 days of application from October through February OR Surface applied March through August (2.0)	Incorporated more than 5 days after application OR Surface applied September through October (4.0)	Surface applied November through February (8.0)	0	0
Organic P Source Application Rate	1.00	lbs/ac P_2O_5 x 0.02	180 / lbs/ac P_2O_5 x 0.02 =				3.6	3.6
Organic P Source Application Method	1.00	None Applied (0)	Injected deeper than 2 inches OR Incorporated within 5 days of application from March through September (1.0)	Incorporated within 5 days of application from October through February OR Surface applied March through August (2.0)	Incorporated more than 5 days after application OR Surface applied September through October (4.0)	Surface applied November through February (8.0)	8	1

Total Rating Value TFS + SFS	Site Vulnerability Class
< 13.0	**Low**
13.0 – 25.0	**Medium**
25.1 – 50.0	**High**
> 50.0	**Very High**

	Current	Planned
Transport Factors Subtotal (TFS)	7.0	3.75
Source Factors Subtotal (SFS)	11.6	4.6
Total Rating Value (TFS + SFS)	**18.6**	**8.35**
Site Vulnerability Class	**Medium**	**Low**

PHOSPHORUS INDEX WORKSHEET – **WESTERN** OREGON

Producer :Mike Bush County:Tillamook Tract No. 53 Field No(s).4l Date:01/25/01

Soil Map Unit(s): GmB__ Soil Test P: __22___ ppm Lab. Method: Weak Bray Sample Depth: 1 ft

Crop Rotation: Permanent Hay Nutrient Application Method(s) Tank wagon & manure spreader

Planner: **Pedersen** Notes:

		PHOSPHORUS LOSS RATING					Weighted Rating Value	
TRANSPORT FACTORS	Factor Weight	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	**Current**	**Planned**
Soil Erosion – tons/ac/yr (RUSLE)	1.50	< 1 (0)	1 – 3 (1.5)	4 – 6 (3.0)	7 – 15 (6.0)	> 15 (12.0)	___0___	__0____
Soil Erosion from Sprinkler Irrigation	0.75	No sprinkler irrigation (0)	Application rate < infiltration rate OR No visible runoff at field borders (0.75)	Application rate = infiltration rate OR Little to no visible runoff at field borders (1.5)	Application rate > infiltration rate OR Visible runoff at field borders (3.0)	Application rate > infiltration rate OR Excessive runoff visible at field borders. Rills and gullies present. (6.0)	__0____	__0____
Runoff Class	1.00	Negligible (0)	Very low or low (1.0)	Medium (2.0)	High (4.0)	Very High (8.0)	__1____	__1___
Flooding Frequency Class	0.75	None or very rare (0)	Rare (0.75)	Occasional (1.5)	Frequent (3.0)	Very Frequent (6.0)	3.0	3.0
Distance to Perennial Surface Waters / Buffer Widths	0.75	> 500 feet OR buffer > 30 ft. wide (or meets NRCS standards) next to surface waters (0)	300 – 500 feet OR buffer 20 - 30 ft. wide next to surface waters (0.75)	200 – 299 feet OR buffer 10 -19 ft. wide next to surface waters (1.5)	100 – 199 feet AND buffer < 10 ft. wide next to surface waters (3.0)	< 100 feet AND No buffer next to surface waters (6.0)	3.0	0.75
Subsurface Drainage	0.50	No Tile Drains (0)	Tile drains present Soil Test P (Bray P1) < 60 ppm (0.5)	Tile drains present Soil Test P (Bray P1) 61 - 140 ppm (1.0)	Tile drains present Soil Test P (Bray P1) 141- 190 ppm (2.0)	Tile drains present Soil Test P (Bray P1) > 190 ppm (4.0)	0	0
						Transport Factors Subtotal (TFS)	7	3.75

PHOSPHORUS INDEX WORKSHEET – **WESTERN** OREGON

Producer :Mike Bush County:Tillamook Tract No. 53 Field No(s).4 Date:01/25/01

Soil Map Unit(s): GmB__ Soil Test P: 22 ppm Lab. Method: Weak Bray Sample Depth: 1 ft

Crop Rotation: Permanent Hay Nutrient Application Method(s) Tank wagon & manure spreader

Planner: **Pedersen** Notes: _____

		PHOSPHORUS LOSS RATING					Weighted Rating Value	
TRANSPORT FACTORS	Factor Weight	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Current	Planned
Soil Erosion – tons/ac/yr (RUSLE)	1.50	< 1 (0)	1 – 3 (1.5)	4 – 6 (3.0)	7 – 15 (6.0)	> 15 (12.0)	0	0
Soil Erosion from Sprinkler Irrigation	0.75	No sprinkler irrigation (0)	Application rate < infiltration rate OR No visible runoff at field borders (0.75)	Application rate = infiltration rate OR Little to no visible runoff at field borders (1.5)	Application rate > infiltration rate OR Visible runoff at field borders (3.0)	Application rate > infiltration rate OR Excessive runoff visible at field borders. Rills and gullies present. (6.0)	0	0
Runoff Class	1.00	Negligible (0)	Very low or low (1.0)	Medium (2.0)	High (4.0)	Very High (8.0)	1	1
Flooding Frequency Class	0.75	None or very rare (0)	Rare (0.75)	Occasional (1.5)	Frequent (3.0)	Very Frequent (6.0)	3.0	3.0
Distance to Perennial Surface Waters / Buffer Widths	0.75	> 500 feet OR buffer > 30 ft. wide (or meets NRCS standards) next to surface waters (0)	300 – 500 feet OR buffer 20 - 30 ft. wide next to surface waters (0.75)	200 – 299 feet OR buffer 10 -19 ft. wide next to surface waters (1.5)	100 – 199 feet AND buffer < 10 ft. wide next to surface waters (3.0)	< 100 feet AND No buffer next to surface waters (6.0)	3.0	0.75
Subsurface Drainage	0.50	No Tile Drains (0)	Tile drains present Soil Test P (Bray P1) < 60 ppm (0.5)	Tile drains present Soil Test P (Bray P1) 61 - 140 ppm (1.0)	Tile drains present Soil Test P (Bray P1) 141- 190 ppm (2.0)	Tile drains present Soil Test P (Bray P1) > 190 ppm (4.0)	0	0
						Transport Factors Subtotal (TFS)	7	3.75

Tract 53 Fields 4

SOURCE FACTORS	Factor Weight	PHOSPHORUS LOSS RATING None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Weighted Rating Value Current	Planned
Soil Test P – ppm (Bray P1)	1.00	(Soil Test P – 40) / 10 (22 / Soil Test P - 40) x .10 = 0 Assign 0 points if Soil Test P < 40 ppm					0	0
Commercial P Fertilizer Application Rate	1.00	lbs/ac P_2O_5 x 0.02 0 / lbs/ac P_2O_5 x 0.02 =					0	0
Commercial P Fertilizer Application Method	1.00	None Applied (0)	Injected / banded deeper than 2 inches OR Incorporated within 5 days of application from March through September (1.0)	Incorporated within 5 days of application from October through February OR Surface applied March through August (2.0)	Incorporated more than 5 days after application OR Surface applied September through October (4.0)	Surface applied November through February (8.0)	0	0
Organic P Source Application Rate	1.00	lbs/ac P_2O_5 x 0.02 180 / lbs/ac P_2O_5 x 0.02 =					3.6	3.6
Organic P Source Application Method	1.00	None Applied (0)	Injected deeper than 2 inches OR Incorporated within 5 days of application from March through September (1.0)	Incorporated within 5 days of application from October through February OR Surface applied March through August (2.0)	Incorporated more than 5 days after application OR Surface applied September through October (4.0)	Surface applied November through February (8.0)	8	1

Total Rating Value TFS + SFS	Site Vulnerability Class
< 13.0	**Low**
13.0 – 25.0	**Medium**
25.1 – 50.0	**High**
> 50.0	**Very High**

	Current	Planned
Transport Factors Subtotal (TFS)	7.0	3.75
Source Factors Subtotal (SFS)	11.6	4.6
Total Rating Value (TFS + SFS)	**18.6**	**8.35**
Site Vulnerability Class	**Medium**	**Low**

PHOSPHORUS INDEX WORKSHEET – **WESTERN** OREGON

Producer :Mike Bush County:Tillamook Tract No. 53 Field No(s).1 Date:01/25/01

Soil Map Unit(s): **HbA** Soil Test P: 58 ppm Lab. Method: Weak Bray Sample Depth: 1 ft

Crop Rotation: Permanent Pasture Nutrient Application Method(s) Tank wagon & manure spreader

Planner: **Pedersen** Notes:

TRANSPORT FACTORS	Factor Weight	PHOSPHORUS LOSS RATING					Weighted Rating Value	
		None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Current	Planned
Soil Erosion – tons/ac/yr (RUSLE)	1.50	< 1 (0)	1 – 3 (1.5)	4 – 6 (3.0)	7 – 15 (6.0)	> 15 (12.0)	0	0
Soil Erosion from Sprinkler Irrigation	0.75	No sprinkler irrigation (0)	Application rate < infiltration rate OR No visible runoff at field borders (0.75)	Application rate = infiltration rate OR Little to no visible runoff at field borders (1.5)	Application rate > infiltration rate OR Visible runoff at field borders (3.0)	Application rate > infiltration rate OR Excessive runoff visible at field borders. Rills and gullies present. (6.0)	0	0
Runoff Class	1.00	Negligible (0)	Very low or low (1.0)	Medium (2.0)	High (4.0)	Very High (8.0)	2	2
Flooding Frequency Class	0.75	None or very rare (0)	Rare (0.75)	Occasional (1.5)	Frequent (3.0)	Very Frequent (6.0)	0	0
Distance to Perennial Surface Waters / Buffer Widths	0.75	> 500 feet OR buffer > 30 ft. wide (or meets NRCS standards) next to surface waters (0)	300 – 500 feet OR buffer 20 - 30 ft. wide next to surface waters (0.75)	200 – 299 feet OR buffer 10 -19 ft. wide next to surface waters (1.5)	100 – 199 feet AND buffer < 10 ft. wide next to surface waters (3.0)	< 100 feet AND No buffer next to surface waters (6.0)	3.0	0.75
Subsurface Drainage	0.50	No Tile Drains (0)	Tile drains present Soil Test P (Bray P1) < 60 ppm (0.5)	Tile drains present Soil Test P (Bray P1) 61 - 140 ppm (1.0)	Tile drains present Soil Test P (Bray P1) 141- 190 ppm (2.0)	Tile drains present Soil Test P (Bray P1) > 190 ppm (4.0)	0	0
						Transport Factors Subtotal (TFS)	5	2.75

Tract 53 Fields 1

SOURCE FACTORS	Factor Weight	PHOSPHORUS LOSS RATING None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Weighted Rating Value Current	Planned
Soil Test P – ppm (Bray P1)	1.00	(Soil Test P – 40) / 10 (59 Soil Test P - 40) x .10 = 1.9 ppm Assign 0 points if Soil Test P < 40					1.9	1.9
Commercial P Fertilizer Application Rate	1.00	lbs/ac P_2O_5 x 0.02 0 lbs/ac P_2O_5 x 0.02 =					0	0
Commercial P Fertilizer Application Method	1.00	None Applied (0)	Injected / banded deeper than 2 inches OR Incorporated within 5 days of application from March through September (1.0)	Incorporated within 5 days of application from October through February OR Surface applied March through August (2.0)	Incorporated more than 5 days after application OR Surface applied September through October (4.0)	Surface applied November through February (8.0)	0	0
Organic P Source Application Rate	1.00	lbs/ac P_2O_5 x 0.02 180 lbs/ac P_2O_5 x 0.02 =					3.6	3.6
Organic P Source Application Method	1.00	None Applied (0)	Injected deeper than 2 inches OR Incorporated within 5 days of application from March through September (1.0)	Incorporated within 5 days of application from October through February OR Surface applied March through August (2.0)	Incorporated more than 5 days after application OR Surface applied September through October (4.0)	Surface applied November through February (8.0)	8	1

Total Rating Value TFS + SFS	Site Vulnerability Class
< 13.0	**Low**
13.0 – 25.0	**Medium**
25.1 – 50.0	**High**
> 50.0	**Very High**

	Current	Planned
Transport Factors Subtotal (TFS)	5.0	2.75
Source Factors Subtotal (SFS)	11.6	4.6
Total Rating Value (TFS + SFS)	**16.6**	**7.35**
Site Vulnerability Class	**Medium**	**Low**

PHOSPHORUS INDEX WORKSHEET – **WESTERN** OREGON

Producer :Mike Bush County:Tillamook Tract No. 477 Field No(s).1 Date:01/25/01

Soil Map Unit(s): WeC__ Soil Test P: __46___ ppm Lab. Method: Weak Bray Sample Depth: 1 ft

Crop Rotation: Permanent Pasture___ Nutrient Application Method(s) Tank wagon & manure spreader

Planner: _Pedersen_ Notes: _____

		PHOSPHORUS LOSS RATING					Weighted Rating Value	
TRANSPORT FACTORS	Factor Weight	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Current	Planned
Soil Erosion – tons/ac/yr (RUSLE)	1.50	< 1 (0)	1 – 3 (1.5)	4 – 6 (3.0)	7 – 15 (6.0)	> 15 (12.0)	0 ~~1.5~~	0 ~~1.5~~
Soil Erosion from Sprinkler Irrigation	0.75	No sprinkler irrigation (0)	Application rate < infiltration rate OR No visible runoff at field borders (0.75)	Application rate = infiltration rate OR Little to no visible runoff at field borders (1.5)	Application rate > infiltration rate OR Visible runoff at field borders (3.0)	Application rate > infiltration rate OR Excessive runoff visible at field borders. Rills and gullies present. (6.0)	0	0
Runoff Class	1.00	Negligible (0)	Very low or low (1.0)	Medium (2.0)	High (4.0)	Very High (8.0)	4	4
Flooding Frequency Class	0.75	None or very rare (0)	Rare (0.75)	Occasional (1.5)	Frequent (3.0)	Very Frequent (6.0)	0	0
Distance to Perennial Surface Waters / Buffer Widths	0.75	> 500 feet OR buffer > 30 ft. wide (or meets NRCS standards) next to surface waters (0)	300 – 500 feet OR buffer 20 - 30 ft. wide next to surface waters (0.75)	200 – 299 feet OR buffer 10 -19 ft. wide next to surface waters (1.5)	100 – 199 feet AND buffer < 10 ft. wide next to surface waters (3.0)	< 100 feet AND No buffer next to surface waters (6.0)	0	0
Subsurface Drainage	0.50	No Tile Drains (0)	Tile drains present Soil Test P (Bray P1) < 60 ppm (0.5)	Tile drains present Soil Test P (Bray P1) 61 - 140 ppm (1.0)	Tile drains present Soil Test P (Bray P1) 141- 190 ppm (2.0)	Tile drains present Soil Test P (Bray P1) > 190 ppm (4.0)	0	0
						Transport Factors Subtotal (TFS)	4 ~~5.5~~	4 ~~5.5~~

Tract 477 Fields 1

SOURCE FACTORS	Factor Weight	PHOSPHORUS LOSS RATING None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Weighted Rating Value Current	Planned
Soil Test P – ppm (Bray P1)	1.00	(Soil Test P – 40) / 10	(46 / Soil Test P - 40) x .10 = _____			Assign 0 points if Soil Test P < 40 ppm	0.6	0.6
Commercial P Fertilizer Application Rate	1.00	lbs/ac P_2O_5 x 0.02	___0___ / lbs/ac P_2O_5 x 0.02 = _____				0	0
Commercial P Fertilizer Application Method	1.00	None Applied (0)	Injected / banded deeper than 2 inches OR Incorporated within 5 days of application from March through September (1.0)	Incorporated within 5 days of application from October through February OR Surface applied March through August (2.0)	Incorporated more than 5 days after application OR Surface applied September through October (4.0)	Surface applied November through February (8.0)	0	0
Organic P Source Application Rate	1.00	lbs/ac P_2O_5 x 0.02	___177___ / lbs/ac P_2O_5 x 0.02 = _____				3.54	3.54
Organic P Source Application Method	1.00	None Applied (0)	Injected deeper than 2 inches OR Incorporated within 5 days of application from March through September (1.0)	Incorporated within 5 days of application from October through February OR Surface applied March through August (2.0)	Incorporated more than 5 days after application OR Surface applied September through October (4.0)	Surface applied November through February (8.0)	8	1

Total Rating Value TFS + SFS	Site Vulnerability Class
< 13.0	**Low**
13.0 – 25.0	**Medium**
25.1 – 50.0	**High**
> 50.0	**Very High**

	Current	Planned
Transport Factors Subtotal (TFS)	4 ~~5.5~~	4 ~~5.5~~
Source Factors Subtotal (SFS)	12.14	5.14
Total Rating Value (TFS + SFS)	**17.64**	**10.64**
Site Vulnerability Class	**Medium**	**Low**

PHOSPHORUS INDEX WORKSHEET – **WESTERN** OREGON

Producer: Mike Bush County:Tillamook Tract No. 647 Field No(s). 1,2 Date: 01/25/01

Soil Map Unit(s): KaB Soil Test P: 63 ppm Lab. Method: Weak Bray Sample Depth: 1 foot

Crop Rotation: Permanent Grass Nutrient Application Method(s) Tank Wagon and manure Spreader

Planner: Pedersen Notes: _____

		PHOSPHORUS LOSS RATING					Weighted Rating Value	
TRANSPORT FACTORS	Factor Weight	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	**Current**	**Planned**
Soil Erosion – tons/ac/yr (RUSLE)	1.50	< 1 (0)	1 – 3 (1.5)	4 – 6 (3.0)	7 – 15 (6.0)	> 15 (12.0)	0 ~~2.25~~	0 ~~2.25~~
Soil Erosion from Sprinkler Irrigation	0.75	No sprinkler irrigation (0)	Application rate < infiltration rate OR No visible runoff at field borders (0.75)	Application rate = infiltration rate OR Little to no visible runoff at field borders (1.5)	Application rate > infiltration rate OR Visible runoff at field borders (3.0)	Application rate > infiltration rate OR Excessive runoff visible at field borders. Rills and gullies present. (6.0)	0	0
Runoff Class	1.00	Negligible (0)	Very low or low (1.0)	Medium (2.0)	High (4.0)	Very High (8.0)	1.0	1.0
Flooding Frequency Class	0.75	None or very rare (0)	Rare (0.75)	Occasional (1.5)	Frequent (3.0)	Very Frequent (6.0)	0	0
Distance to Perennial Surface Waters / Buffer Widths	0.75	> 500 feet OR buffer > 30 ft. wide (or meets NRCS standards) next to surface waters (0)	300 – 500 feet OR buffer 20 - 30 ft. wide next to surface waters (0.75)	200 – 299 feet OR buffer 10 -19 ft. wide next to surface waters (1.5)	100 – 199 feet AND buffer < 10 ft. wide next to surface waters (3.0)	< 100 feet AND No buffer next to surface waters (6.0)	.75 ~~0.56~~	.75 ~~0.56~~
Subsurface Drainage	0.50	No Tile Drains (0)	Tile drains present Soil Test P (Bray P1) < 60 ppm (0.5)	Tile drains present Soil Test P (Bray P1) 61 - 140 ppm (1.0)	Tile drains present Soil Test P (Bray P1) 141- 190 ppm (2.0)	Tile drains present Soil Test P (Bray P1) > 190 ppm (4.0)	0	0
						Transport Factors Subtotal (TFS)	1.75 ~~3.81~~	1.75 ~~3.81~~

Tract **647** Fields 1,2

SOURCE FACTORS	Factor Weight	PHOSPHORUS LOSS RATING None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Weighted Rating Value Current	Planned
Soil Test P – ppm (Bray P1)	1.00	(Soil Test P – 40) / 10 (63 - 40) x .10 = 2.3 Soil Test P Assign 0 points if Soil Test P < 40 ppm					2.3	2.3
Commercial P Fertilizer Application Rate	1.00	lbs/ac P_2O_5 x 0.02 _____ x 0.02 = _____ lbs/ac P_2O_5					0	0
Commercial P Fertilizer Application Method	1.00	None Applied (0)	Injected / banded deeper than 2 inches OR Incorporated within 5 days of application from March through September (1.0)	Incorporated within 5 days of application from October through February OR Surface applied March through August (2.0)	Incorporated more than 5 days after application OR Surface applied September through October (4.0)	Surface applied November through February (8.0)	0	0
Organic P Source Application Rate	1.00	lbs/ac P_2O_5 x 0.02 109_ x 0.02 = _____ lbs/ac P_2O_5					2.18	2.18
Organic P Source Application Method	1.00	None Applied (0)	Injected deeper than 2 inches OR Incorporated within 5 days of application from March through September (1.0)	Incorporated within 5 days of application from October through February OR Surface applied March through August (2.0)	Incorporated more than 5 days after application OR Surface applied September through October (4.0)	Surface applied November through February (8.0)	4.0	2.0

Total Rating Value TFS + SFS	Site Vulnerability Class
< 13.0	**Low**
13.0 – 25.0	**Medium**
25.1 – 50.0	**High**
> 50.0	**Very High**

	Current	Planned
Transport Factors Subtotal (TFS)	1.75 ~~3.81~~	1.75 ~~3.81~~
Source Factors Subtotal (SFS)	8.48	6.48
Total Rating Value (TFS + SFS)	**12.29**	**10.29**
Site Vulnerability Class	**Low**	**Low**

Soil Analysis Report

Soil Search Labs.
42125 S. Morton Rd., Kennewick, WA 99337
Phone: (509) 585-8875; Fax (509) 586-0958
Homepage: http:/www.soilsearch.com
Email: soilsrch@gte.net

Client: Oregon Dairy Farmers Associatic
10101 S.W. Barbur Blvd
Portland OR 97219
Fax: 503-245-7916 Phone 503-228-5033

Grower Mike Bush
Sampler:
Crop:
Date Tested: 25-Jan-01
Report Date: 26-Jan-01

Report No: S2719

Lab No	Sample ID or Grid	Depth (ft):	NO3-N	NH4-N	NO3-N +NH4-N	P	K	SO4-S	B	OM	pH	SS	Zn	Mn	Cu	Fe	Ca	Mg	Na	Total Bases	K	P	SMP
			#/ac			Bicar. ppm				%		mmho/cm	ppm				meq/100g				Acet. ppm	Weak Bray ppm	buffer pH
26553	# 1+2	1	84	80	164			7		6.30	5.6										1334	59	6.7
26554	# 3+4	1	76	67	142			9		6.31	5.8										1378	58	5.9
26555	# 5	1	28	50	78			6		3.11	6.2										459	21	6.4
26556	# 6+7	1	32	61	93			4		5.22	6.2										546	27	6.3
26557	# 8	1	39	57	96			7		3.90	6.3										249	22	6.4
26558	# S1+S2	1	60	85	146			12		7.52	5.7										1522	63	5.8
26559	# W1+W2	1	65	78	143			7		7.02	5.4										1318	38	5.5
26560	# W3+W4	1	45	75	120			7		6.41	5.1										788	46	5.2
26561	# W5	1	29	96	125			9		6.93	5.1										487	18	5.2
Average			51	72	123			8		5.87	5.7										896	39	5.8

% of total base	Ideal soil:	Your soil:
% Ca	65-75	
% Mg	15-20	
% K	2-9	
% Na	<1	

Total bases=Meq(Ca+Mg+Na+K)
ppm Ca = Meq/100g Ca X 200
ppm Mg = Meq Mg/100g X 122
ppm Na = Meq/100g Na X 230
Meq/100g K = ppm K / 391

ppm = (lb/ac) / 3.2 for Clay soil
ppm = (lb/ac) / 4.0 for Sandy soil
P2O5 ppm = P ppm X 2.2914
K2O ppm = K ppm X 1.2046

N recommendation is for all growing season, split N application, do not put more than 80 lb NH4-N with seeds or young seedlings

Comments:


T47
W5
W4
Harold
Wyss
W3
W2
W1
T46
John
Fjarlie
T203
T53
Brownlee
Bush
Jeff
Adams
T51
Mike Burdick
T38
T44
Bob
Larson
(Edgerly)
Trask
T28
Mike Bush
Rent
Smith

U.S. Department of Agriculture
Natural Resources Conservation Service

ANIMAL WASTE MANAGEMENT WORKSHEET

Version 2.3

12/1/2005
STATE: OREGON

CLIENT: **Mike Bush (Existing Herd Size)**
ASSISTED BY: **Pedersen**

CHECKED BY:

ANIMAL WASTE MANAGEMENT SYSTEM APPLICATION

MANAGEMENT CRITERIA FOR TRACTOR SPREADER APPLICATION OF SOLIDS

To apply **26,162** cubic feet of solids generated from the operation it will take approximately **105** 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	Loads per Acre
			Bushels	CF	Feet	PPM	Lbs/100CF				Feet	
T53 1	8.1	Hay/Pasture Mix 20% Protein	**200**	**249**	**15**	**3,945**	**24.62**	**384**	1.00	0.7	282	10
2	7.4	Hay/Pasture Mix 20% Protein	**200**	**249**	**15**	**3,945**	**24.62**	**384**	1.00	0.7	282	10
3	5.7	Hay/Pasture Mix 20% Protein	**200**	**249**	**15**	**3,945**	**24.62**	**384**	1.00	0.7	282	10
4	6.9	Hay/Pasture Mix 20% Protein	**200**	**249**	**15**	**3,945**	**24.62**	**384**	1.00	0.7	282	10
T477 1	29.7	Hay/Pasture Mix 20% Protein	**200**	**249**	**15**	**3,945**	**24.62**	**384**	1.00	0.7	282	10
T647 1	3.3	Hay/Pasture Mix 20% Protein	**200**	**249**	**15**	**3,945**	**24.62**	**384**	1.00	0.7	282	10
2	3.6	Hay/Pasture Mix 20% Protein	**200**	**249**	**15**	**3,945**	**24.62**	**384**	1.00	0.7	282	10
T477 2-7	16.9	Hay/Pasture Mix 20% Protein	**200**	**249**	**15**	**3,945**	**24.62**	**384**	1.00	0.7	282	10
0												

MANAGEMENT CRITERIA FOR BIG GUN SPRINKLER APPLICATION OF LIQUIDS

To apply **801,058** gallons of liquids generated from the operation it will take approximately **45** hours of pumping annually. Based on applying NITROGEN, N
at agronomic rate use the application depths, set times, and travel rates listed below for each crop.

Field Number	Acres	Crop	Sprinkler Flowrate GPM	Wetted Diameter Feet	Portion of Wetted Diameter Receiving Liquids	NITROGEN, N Concentration in Storage Facility		Pounds of Nutrients to be Applied	Number of Applications Needed to meet Crop Demand	Inches of Liquids to Apply	Application Rate in Inches/Hour	Set Time Needed in Hours	Travel Rate Needed Feet/Minute
						PPM	Lbs/1000Gal						
T53 1	8.1	Hay/Pasture Mix 20% Protein	**300**	**250**	1/2 Circle	**451**	**3.76**	**384**	1.00	5.76	1.45	9.77	0.33
2	7.4	Hay/Pasture Mix 20% Protein	**300**	**250**	1/2 Circle	**451**	**3.76**	**384**	1.00	5.76	1.45	9.77	0.33
3	5.7	Hay/Pasture Mix 20% Protein	**300**	**250**	1/2 Circle	**451**	**3.76**	**384**	1.00	5.76	1.45	9.77	0.33
4	6.9	Hay/Pasture Mix 20% Protein	**300**	**250**	1/2 Circle	**451**	**3.76**	**384**	1.00	5.76	1.45	9.77	0.33
T477 1	29.7	Hay/Pasture Mix 20% Protein	**300**	**250**	1/2 Circle	**451**	**3.76**	**384**	1.00	5.76	1.45	9.77	0.33
T647 1	3.3	Hay/Pasture Mix 20% Protein	**300**	**250**	1/2 Circle	**451**	**3.76**	**384**	1.00	5.76	1.45	9.77	0.33
2	3.6	Hay/Pasture Mix 20% Protein	**300**	**250**	1/2 Circle	**451**	**3.76**	**384**	1.00	5.76	1.45	9.77	0.33
T477 2-7	16.9	Hay/Pasture Mix 20% Protein	**300**	**250**	1/2 Circle	**451**	**3.76**	**384**	1.00	5.76	1.45	9.77	0.33
0													

MANAGEMENT CRITERIA FOR TANK WAGON APPLICATION OF LIQUIDS

CLIENT: **Mike Bush (Existing Herd Size)**
ASSISTED BY: **Pedersen**

CHECKED BY:

ANIMAL WASTE MANAGEMENT SYSTEM APPLICATION

To apply **801,058** gallons of liquids generated from the operation it will take approximately **348** trips annually. Based on applying NITROGEN, N
at agronomic rates use the application depths, travel lengths, and loads per acre listed below for each crop.

Field Number	Acres	Crop	Tank Wagon Capacity Gallons	Spread Width Feet	NITROGEN, N Concentration in Storage Facility		Pounds of Nutrients to be Applied	Number of Applications Needed to meet Crop Demand	Inches of Liquids to Apply	Travel Length per Load Needed in Feet	Loads per Acre
					PPM	Lbs/1000Gal					
T53 1	8.1	Hay/Pasture Mix 20% Protein	**2,300**	**15**	**451**	**3.76**	**384**	1.00	2.45	100	29.0
2	7.4	Hay/Pasture Mix 20% Protein	**2,300**	**15**	**451**	**3.76**	**384**	1.00	2.45	100	29.0
3	5.7	Hay/Pasture Mix 20% Protein	**2,300**	**15**	**451**	**3.76**	**384**	1.00	2.45	100	29.0
4	6.9	Hay/Pasture Mix 20% Protein	**2,300**	**15**	**451**	**3.76**	**384**	1.00	2.45	100	29.0
T477 1	29.7	Hay/Pasture Mix 20% Protein	**2,300**	**15**	**451**	**3.76**	**384**	1.00	2.45	100	29.0
T647 1	3.3	Hay/Pasture Mix 20% Protein	**2,300**	**15**	**451**	**3.76**	**384**	1.00	2.45	100	29.0
2	3.6	Hay/Pasture Mix 20% Protein	**2,300**	**15**	**451**	**3.76**	**384**	1.00	2.45	100	29.0
T477 2-7	16.9	Hay/Pasture Mix 20% Protein	**2,300**	**15**	**451**	**3.76**	**384**	1.00	2.45	100	29.0
0											

U.S. Department of Agriculture
Natural Resources Conservation Service

ANIMAL WASTE MANAGEMENT WORKSHEET
Version 2.3

12/1/2005
STATE: OREGON

CLIENT: **Mike Bush (Existing Herd Size)**
ASSISTED BY: **Pedersen**

CHECKED BY:

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	Dairy / Tank (Uncovered)	4,306	1,705	2,967	**70%**	**85%**	**85%**	3,014	1,449	2,522
Solids	Dairy / Solids Storage Facility (Roofed)	8,588	3,214	6,237	**75%**	**90%**	**90%**	6,441	2,892	5,614
Grazing	NONE	11,939	4,591	8,367	**100%**	**100%**	**100%**	11,939	4,591	8,367

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	3,014	1,449	2,522	**75%**	**100%**	**100%**	2,261	1,449	2,522
Solids	Broadcast (Incorporated 7 or more days after application)	6,441	2,892	5,614	**70%**	**100%**	**100%**	4,509	2,892	5,614
Grazing	Grazing	11,939	4,591	8,367	**90%**	**100%**	**100%**	10,745	4,591	8,367

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		
		N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O
Liquids	Coast / Well Drained	2,261	1,449	2,522	**87%**	**100%**	**100%**	1,967	1,449	2,522
Solids	Coast / Well Drained	4,509	2,892	5,614	**87%**	**100%**	**100%**	3,923	2,892	5,614
Grazing	Coast / Well Drained	10,745	4,591	8,367	**87%**	**100%**	**100%**	9,348	4,591	8,367

CLIENT: **Mike Bush (Existing Herd Size)**
ASSISTED BY: **Pedersen**

CHECKED BY:

ANIMAL WASTE MANAGEMENT SYSTEM UTILIZATION

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

Field Number	Acres	Crop	LIQUIDS			SOLIDS			GRAZING		
			Percent to be Applied	Pounds of Nutrients to be Applied	Acres Needed for Utilization of Nutrients	Percent to be Applied	Pounds of Nutrients to be Applied	Acres Needed for Utilization of Nutrients	Percent to be Applied	Pounds of Nutrients to be Applied	Acres Needed for Utilization of Nutrients
T53 1	8.1	Hay/Pasture Mix 20% Protein	25%	492	1	24%	923	2	15%	1,402	4
2	7.4	Hay/Pasture Mix 20% Protein	21%	413	1	22%	861	2	14%	1,309	3
3	5.7	Hay/Pasture Mix 20% Protein	10%	197	1	10%	391	1	12%	1,122	3
4	6.9	Hay/Pasture Mix 20% Protein	8%	157	0	8%	332	1	0%	0	0
T477 1	29.7	Hay/Pasture Mix 20% Protein	28%	551	1	28%	1,107	3	59%	5,515	14
T647 1	3.3	Hay/Pasture Mix 20% Protein	2%	39	0	2%	74	0	0%	0	0
2	3.6	Hay/Pasture Mix 20% Protein	2%	39	0	2%	78	0	0%	0	0
T477 2-7	16.9	Hay/Pasture Mix 20% Protein	4%	79	0	4%	156	0	0%	0	0
0											
Off-Farm			0%	0		0%	0		0%	0	
		TOTALS-	100%	1,967	5	100%	3,923	10	100%	9,348	24

NUTRIENT BALANCE BASED ON AVAILABLE ACRES

Field Number	Acres	Crop	NUTRIENTS APPLIED			- NUTRIENTS REMOVED			= NUTRIENT BALANCE		
			Nitrogen, N Lbs/Acre	Phosphorous, P_2O_5 Lbs/Acre	Potassium, K_2O Lbs/Acre	Nitrogen, N Lbs/Acre	Phosphorous, P_2O_5 Lbs/Acre	Potassium, K_2O Lbs/Acre	Nitrogen, N Lbs/Acre	Phosphorous, P_2O_5 Lbs/Acre	Potassium, K_2O Lbs/Acre
T53 1	8.1	Hay/Pasture Mix 20% Protein	348	214	396	384	106	294	-36	108	102
2	7.4	Hay/Pasture Mix 20% Protein	349	214	396	384	106	294	-35	108	103
3	5.7	Hay/Pasture Mix 20% Protein	300	173	319	384	106	294	-84	67	25
4	6.9	Hay/Pasture Mix 20% Protein	71	52	98	384	106	294	-313	-54	-195
T477 1	29.7	Hay/Pasture Mix 20% Protein	242	132	243	384	106	294	-142	27	-50
T647 1	3.3	Hay/Pasture Mix 20% Protein	34	25	47	384	106	294	-350	-81	-246
2	3.6	Hay/Pasture Mix 20% Protein	33	24	45	384	106	294	-351	-82	-248
T477 2-7	16.9	Hay/Pasture Mix 20% Protein	14	10	19	384	106	294	-370	-96	-274
0											
Off-Farm											

ANIMAL WASTE MANAGEMENT WORKSHEET

Version 2.3

CLIENT: **Mike Bush (Existing Herd Size)**
ASSISTED BY: **Pedersen**

CHECKED BY:

ANIMAL WASTE MANAGEMENT SYSTEM PRODUCTION

MONTHLY VOLUMES

Month	Runoff in Cubic Feet: Roof Area Square Feet 0	Paved Slab Area Square Feet 0	Unpaved Lot Area Square Feet 0	Silage Pit Surface Area, SF 0	Facility Water Use Cubic Feet	Manure Solids Cubic Feet	Manure Liquids Cubic Feet	Bedding Cubic Feet	Bedding Pounds	Solids Separated Cubic Feet	Solids Separated Pounds	Solids in Liquids Cubic Feet	Solids in Liquids Pounds	Total Solids Cubic Feet	Total Liquids Cubic Feet
October	0	0	0	0	6,320	427	735	1,127	4,144	1,430	51,497	124	4,452	1,430	7,221
November	0	0	0	0	6,116	1,652	4,182	2,288	14,787	3,236	116,489	704	25,344	3,236	11,389
December	0	0	0	0	6,320	1,707	4,322	2,364	15,280	3,344	120,372	727	26,189	3,344	11,616
January	0	0	0	0	6,320	1,707	4,322	2,364	15,280	3,344	120,372	727	26,189	3,344	11,616
February	0	0	0	0	5,709	1,542	3,904	2,135	13,801	3,020	108,723	657	23,654	3,020	10,934
March	0	0	0	0	6,320	1,707	4,322	2,364	15,280	3,344	120,372	727	26,189	3,344	11,616
April	0	0	0	0	6,116	414	711	1,090	4,011	1,384	49,835	120	4,308	1,384	7,013
May	0	0	0	0	6,320	427	735	1,127	4,144	1,430	51,497	124	4,452	1,430	7,221
June	0	0	0	0	6,116	414	711	1,090	4,011	1,384	49,835	120	4,308	1,384	7,013
July	0	0	0	0	6,320	427	735	1,127	4,144	1,430	51,497	124	4,452	1,430	7,221
August	0	0	0	0	6,320	427	735	1,127	4,144	1,430	51,497	124	4,452	1,430	7,221
September	0	0	0	0	6,116	414	711	1,090	4,011	1,384	49,835	120	4,308	1,384	7,013
Annual	**0**	**0**	**0**	**0**	**74,415**	**11,265**	**26,124**	**19,294**	**103,037**	**26,162**	**941,819**	**4,397**	**158,298**	**26,162**	**107,093**

DAILY NUTRIENT PRODUCTION

Type of Animal	Pounds/Day of Nutrients from LIQUIDS: N	P2O5	K2O	Pounds/Day of Nutrients from SOLIDS: N	P2O5	K2O	Pounds/Day of Nutrients from GRAZING: N	P2O5	K2O
MILKER	22.98	9.10	15.84	34.47	13.65	23.76	57.46	22.74	39.59
MILKER (DRY)	0.00	0.00	0.00	8.10	2.58	6.24	8.10	2.58	6.24
CALVES (1-12 Months)	0.00	0.00	0.00	2.48	0.73	2.31	2.48	0.73	2.31
	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
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

CLIENT: **Mike Bush (Existing Herd Size)**
ASSISTED BY: **Pedersen**

CHECKED BY:

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	121	48	83	259	95	197	1,729	665	1,212	0	0	0	2,109	808	1,492
November	689	273	475	1,352	509	969	0	0	0	0	0	0	2,041	782	1,444
December	712	282	491	1,397	526	1,001	0	0	0	0	0	0	2,109	808	1,492
January	712	282	491	1,397	526	1,001	0	0	0	0	0	0	2,109	808	1,492
February	644	255	443	1,261	475	905	0	0	0	0	0	0	1,905	729	1,348
March	712	282	491	1,397	526	1,001	0	0	0	0	0	0	2,109	808	1,492
April	117	46	81	250	92	191	1,674	644	1,173	0	0	0	2,041	782	1,444
May	121	48	83	259	95	197	1,729	665	1,212	0	0	0	2,109	808	1,492
June	117	46	81	250	92	191	1,674	644	1,173	0	0	0	2,041	782	1,444
July	121	48	83	259	95	197	1,729	665	1,212	0	0	0	2,109	808	1,492
August	121	48	83	259	95	197	1,729	665	1,212	0	0	0	2,109	808	1,492
September	117	46	81	250	92	191	1,674	644	1,173	0	0	0	2,041	782	1,444
Annual	**4,306**	**1,705**	**2,967**	**8,588**	**3,214**	**6,237**	**11,939**	**4,591**	**8,367**	**0**	**0**	**0**	**24,833**	**9,509**	**17,572**

ANIMAL WASTE MANAGEMENT WORKSHEET

Version 2.3

CLIENT: **Mike Bush (Existing Herd Size)**
ASSISTED BY: **Pedersen** CHECKED BY:

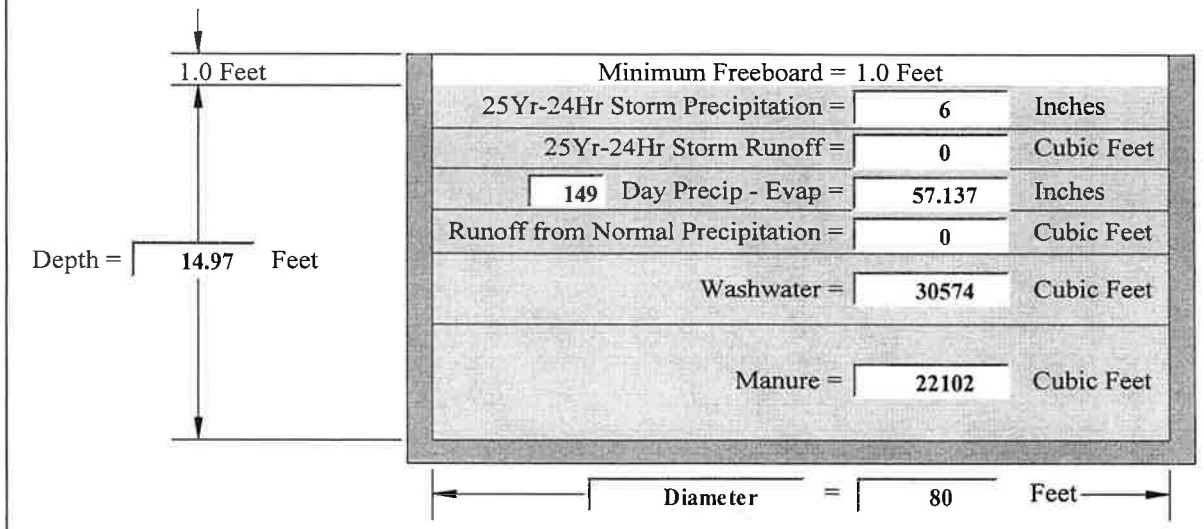
ANIMAL WASTE MANAGEMENT SYSTEM STORAGE

TANK

Tank Parameters	Value
Storage Period, Days=	149
Tank Diameter, Feet=	80
Existing Storage, Cubic Feet=	7,971.00
Surface Area of Existing Storage, SF=	0
25 Year-24 Hour Storm Runoff, CF=	0
Volume Needed, Cubic Feet=	83,218
Design Volume, Cubic Feet=	75,209
Is Tank Covered?	NO
Tank Dimensions?	Circular

MONTHLY INFLOWS INTO TANK

Month	Number of days	Rain-Evap on Tank CF	Rain-Evap on Existing Storage, CF	Normal Runoff CF	Washwater CF	Manure CF
October	31	2,537	0	0	6,320	777
November	30	5,045	0	0	6,116	4,421
December	31	5,715	0	0	6,320	4,569
January	31	5,434	0	0	6,320	4,569
February	28	4,049	0	0	5,709	4,127
March	31	3,806	0	0	6,320	4,569
April	30	1,729	0	0	6,116	752
May	31	427	0	0	6,320	777
June	30	-100	0	0	6,116	752
July	31	-1,034	0	0	6,320	777
August	31	-749	0	0	6,320	777
September	30	481	0	0	6,116	752
Annual	365	27,339	0	0	74,415	27,616



ANIMAL WASTE MANAGEMENT WORKSHEET

Version 2.3

CLIENT: **Mike Bush (Existing Herd Size)**
ASSISTED BY: **Pedersen**
CHECKED BY:

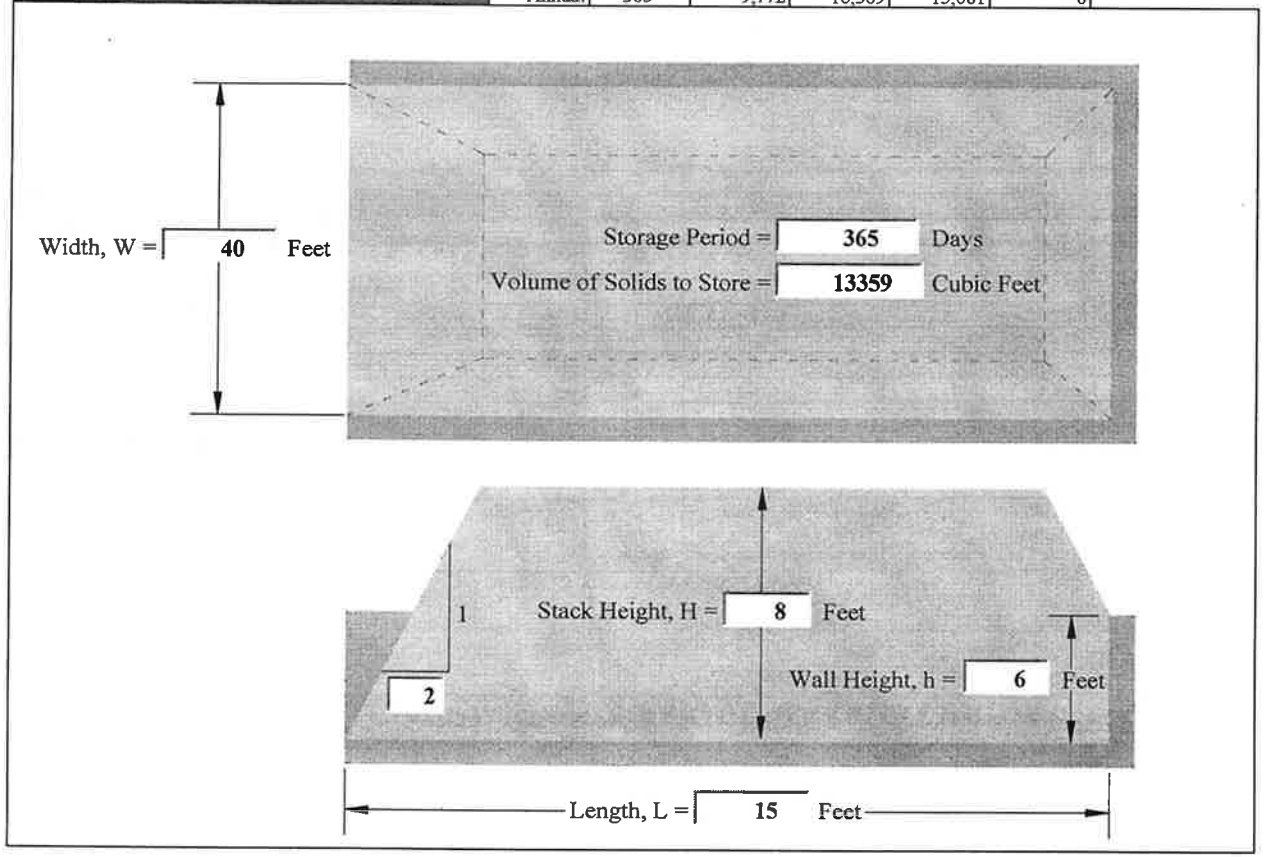
ANIMAL WASTE MANAGEMENT SYSTEM STORAGE

SOLIDS STACKING FACILITY

Solids Storage Facility Parameters	Value
Storage Period, Days=	365
Stacking Width, W in Feet=	40
Stacking Height, H in Feet=	8.00
Wall Height, h in Feet=	6.00
Stack Side Slope (X:1)=	2.00
Existing Storage, Cubic Feet=	11,466
Surface Area of Existing Storage, SF=	0
25 Year-24 Hour Storm Runoff, CF=	0
Volume Needed, Cubic Feet=	13,359
Design Volume, Cubic Feet=	2,098
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	385	1,045	715	0
November	30	1413	1,823	1,618	0
December	31	1460	1,884	1,672	0
January	31	1460	1,884	1,672	0
February	28	1319	1,701	1,510	0
March	31	1460	1,884	1,672	0
April	30	373	1,011	692	0
May	31	385	1,045	715	0
June	30	373	1,011	692	0
July	31	385	1,045	715	0
August	31	385	1,045	715	0
September	30	373	1,011	692	0
Annual	365	9,772	16,389	13,081	0



U.S. Department of Agriculture
Natural Resources Conservation Service

ANIMAL WASTE MANAGEMENT WORKSHEET

Version 2.3

12/1/2005
STATE: OREGON

CLIENT: **Mike Bush Planned Herd Size**
ASSISTED BY: **Pedersen**

CHECKED BY:

ANIMAL WASTE MANAGEMENT SYSTEM UTILIZATION

NUTRIENTS AVAILABLE AFTER STORAGE

Nutrient Source	Type of Operation: Dairy / 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	Tank (Uncovered)	10,419	3,889	6,927	**70%**	**85%**	**85%**	7,293	3,306	5,888
Solids	Solids Storage Facility (Roofed)	17,526	6,427	11,925	**75%**	**90%**	**90%**	13,144	5,784	10,733
Grazing	NONE	13,222	4,852	8,950	**100%**	**100%**	**100%**	13,222	4,852	8,950

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	7,293	3,306	5,888	**75%**	**100%**	**100%**	5,470	3,306	5,888
Solids	Broadcast (Incorporated 7 or more days after application)	13,144	5,784	10,733	**70%**	**100%**	**100%**	9,201	5,784	10,733
Grazing	Grazing	13,222	4,852	8,950	**90%**	**100%**	**100%**	11,900	4,852	8,950

NUTRIENTS AVAILABLE AFTER DENITRIFICATION

Nutrient Source	Location: Coast / Soil Drainage Class	Pounds of Nutrients Available			Percent Nutrients Retained After Denitrification			Pounds of Nutrients Retained After Denitrification		
		N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O
Liquids	Well Drained	5,470	3,306	5,888	**87%**	**100%**	**100%**	4,759	3,306	5,888
Solids	Well Drained	9,201	5,784	10,733	**87%**	**100%**	**100%**	8,005	5,784	10,73?
Grazing	Well Drained	11,900	4,852	8,950	**87%**	**100%**	**100%**	10,353	4,852	8,95?

U.S. Department of Agriculture
Natural Resources Conservation Service

ANIMAL WASTE MANAGEMENT WORKSHEET
Version 2.3

12/1/2005
STATE: OREGON

CLIENT: **Mike Bush Planned Herd Size**
ASSISTED BY: **Pedersen**

CHECKED BY:

ANIMAL WASTE MANAGEMENT SYSTEM UTILIZATION

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

Field Number	Acres	Crop	LIQUIDS			SOLIDS			GRAZING		
			Percent to be Applied	Pounds of Nutrients to be Applied	Acres Needed for Utilization of Nutrients	Percent to be Applied	Pounds of Nutrients to be Applied	Acres Needed for Utilization of Nutrients	Percent to be Applied	Pounds of Nutrients to be Applied	Acres Needed for Utilization of Nutrients
T 53 1	8.1	Hay/Pasture Mix 20% Protein	12%	571	1	12%	961	3	15%	1,553	4
2	7.4	Hay/Pasture Mix 20% Protein	10%	476	1	11%	881	2	14%	1,449	4
3	5.7	Hay/Pasture Mix 20% Protein	7%	333	1	7%	560	1	12%	1,242	3
4	6.9	Hay/Pasture Mix 20% Protein	20%	952	2	20%	1,601	4	0%	0	0
T477 1	29.7	Hay/Pasture Mix 20% Protein	40%	1,904	5	40%	3,202	8	59%	6,108	16
647 1	3.3	Hay/Pasture Mix 20% Protein	3%	143	0	2%	160	0	0%	0	0
2	3.6	Hay/Pasture Mix 20% Protein	3%	143	0	2%	160	0	0%	0	0
T477 2-7	16.9	Hay/Pasture Mix 20% Protein	5%	238	1	6%	480	1	0%	0	0
0											
Off-Farm			0%	0		0%	0		0%	0	
		TOTALS-	100%	4,759	12	100%	8,005	21	100%	10,353	27

NUTRIENT BALANCE BASED ON AVAILABLE ACRES

Field Number	Acres	Crop	NUTRIENTS APPLIED			- NUTRIENTS REMOVED			= NUTRIENT BALANCE		
			Nitrogen, N Lbs/Acre	Phosphorous, P_2O_5 Lbs/Acre	Potassium, K_2O Lbs/Acre	Nitrogen, N Lbs/Acre	Phosphorous, P_2O_5 Lbs/Acre	Potassium, K_2O Lbs/Acre	Nitrogen, N Lbs/Acre	Phosphorous, P_2O_5 Lbs/Acre	Potassium, K_2O Lbs/Acre
T 53 1	8.1	Hay/Pasture Mix 20% Protein	381	225	412	384	106	294	-3	119	118
2	7.4	Hay/Pasture Mix 20% Protein	379	222	408	384	106	294	-5	117	115
3	5.7	Hay/Pasture Mix 20% Protein	375	214	393	384	106	294	-9	108	99
4	6.9	Hay/Pasture Mix 20% Protein	370	263	482	384	106	294	-14	158	188
T477 1	29.7	Hay/Pasture Mix 20% Protein	378	219	402	384	106	294	-6	113	108
647 1	3.3	Hay/Pasture Mix 20% Protein	92	65	119	384	106	294	-292	-41	-175
2	3.6	Hay/Pasture Mix 20% Protein	84	60	109	384	106	294	-300	-46	-185
T477 2-7	16.9	Hay/Pasture Mix 20% Protein	42	30	56	384	106	294	-342	-76	-238
0											
Off-Farm											

U.S. Department of Agriculture
Natural Resources Conservation Service

ANIMAL WASTE MANAGEMENT WORKSHEET

Version 2.3

12/1/2005
STATE: OREGON

CLIENT: Mike Bush (Existing Herd Size)
ASSISTED BY: Pedersen
CHECKED BY:

ANIMAL WASTE MANAGEMENT SYSTEM INVENTORY

ANIMAL INVENTORY

Type of Animal	Number of Animals	Average Weight (lbs.)	Animal Units (1,000 lb.)	Milk Production in Pounds/Cow/Day= 55						Manure CF/D/AU	Annual	
				Nutrient Production (lbs./day/1000 lb. Animal Unit)			(lbs./day)				Days Confined	Days Grazed
				N	P	K	N	P	K			
MILKER	125	980	112.5	0.51	0.09	0.29	57.46	9.93	32.86	1.42	187	178
MILKER (DRY)	25	900	22.5	0.36	0.05	0.23	8.10	1.13	5.18	1.10	151	214
CALVES (1-12 Months)	40	200	8.0	0.31	0.04	0.24	2.48	0.32	1.92	1.30	365	0
Totals/Averages-	190	667	143.0	0.48	0.08	0.28	68.0	11.4	40.0	1.4		

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.
MILKER	83%	0%	0%	0%	0%	0%	83%	83%	83%	83%	83%	83%	
	125	125	125	125	125	125	125	125	125	125	125	125	654
MILKER (DRY)	100%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	100%	
	25	25	25	25	25	25	25	25	25	25	25	25	158
CALVES (1-12 Months)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	40	40	40	40	40	40	40	40	40	40	40	40	0
													0
													0
													0
													0
													0
													0
Total AUM's Available>	99						102	102	102	101	101	101	708
Total AUM's Needed>>>	116	0	0	0	0	0	116	116	116	116	116	116	811
Total AUM's>>>>>>>>>>	-17	0	0	0	0	0	-14	-14	-14	-15	-15	-15	-103

ANIMAL WASTE MANAGEMENT WORKSHEET

Version 2.3

CLIENT: Mike Bush (Existing Herd Size)

ASSISTED BY: Pedersen CHECKED BY:

ANIMAL WASTE MANAGEMENT SYSTEM INVENTORY

WEATHER STATION: TILLAMOOK 1 W

Month	25Yr-24Hr: 6.00 Monthly Average in Inches: Precipitation	Evaporation	Lot Runoff Factors as a Percent of Monthly Precipitation: Paved	Unpaved
October	7.48	1.42	50%	20%
November	12.80	0.75	60%	25%
December	14.25	0.60	60%	25%
January	13.46	0.48	60%	25%
February	10.45	0.78	50%	25%
March	10.35	1.26	45%	15%
April	6.83	1.90	40%	15%
May	4.24	3.22	40%	10%
June	3.16	3.40	35%	10%
July	1.44	3.91	30%	0%
August	1.73	3.52	40%	10%
September	3.69	2.54	45%	15%
Annual	89.08	23.78		

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 >>	
Surface Area of Silage Storage Facility>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> Does Silage Seepage Drain to Storage Facility? (Y/N) NO	0
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	125.0	2	0.30	75	10.0
Equipment Wash		2	700.00	1400	187.2
Flushwater		2		0	0.0
Miscellaneous		2	25.00	50	6.7
Total>>				1525	203.9

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
T53 1	8.1	Hay/Pasture Mix 20% Protein	50% DM	Ton	6.00	384	106	294
2	7.4	Hay/Pasture Mix 20% Protein	50% DM	Ton	6.00	384	106	294
3	5.7	Hay/Pasture Mix 20% Protein	50% DM	Ton	6.00	384	106	294
4	6.9	Hay/Pasture Mix 20% Protein	50% DM	Ton	6.00	384	106	294
T477 1	29.7	Hay/Pasture Mix 20% Protein	50% DM	Ton	6.00	384	106	294
T647 1	3.3	Hay/Pasture Mix 20% Protein	50% DM	Ton	6.00	384	106	294
2	3.6	Hay/Pasture Mix 20% Protein	50% DM	Ton	6.00	384	106	294
T477 2-7	16.9	Hay/Pasture Mix 20% Protein	50% DM	Ton	6.00	384	106	294
Off-Farm								

ANIMAL WASTE MANAGEMENT WORKSHEET

Version 2.3

CLIENT: Mike Bush (Existing Herd Size)

ASSISTED BY: Pedersen 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
MILKER	Free Stall	Wood Shavings	9.00	3.10	0.34	39	349
MILKER (DRY)	Free Stall	Wood Shavings	9.00	3.10	0.34	8	70
CALVES (1-12 Months)	Loose Housing	Loose Straw	2.50	9.30	3.72	30	74

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
MILKER	Press Type (Screw or Roller)	60%	35	23	147	12	42	36	1,267
MILKER (DRY)	Press Type (Screw or Roller)	100%	33	0	0	25	0	36	1,170
CALVES (1-12 Months)	Press Type (Screw or Roller)	100%	40	0	0	10	0	36	1,446
Total Solids>>>			108	23	147	47	42		3,883

ANIMAL WASTE MANAGEMENT WORKSHEET

Version 2.3

CLIENT: **Mike Bush Planned Herd Size**
ASSISTED BY: **Pedersen**

CHECKED BY:

ANIMAL WASTE MANAGEMENT SYSTEM PRODUCTION

MONTHLY VOLUMES

	Runoff in Cubic Feet														
	Roof Area Square Feet	Paved Slab Area Square Feet	Unpaved Lot Area Square Feet	Silage Pit Surface Area, SF	Facility Water Use	Manure		Bedding		Solids Separated		Solids in Liquids		Total Solids	Total Liquids
Month	0	0	0	0	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	0	2,702	710	3,839	1,422	9,802	1,528	55,013	604	21,735	1,528	7,364
November	0	0	0	0	2,615	1,811	7,430	2,492	19,530	3,135	112,869	1,169	42,069	3,135	11,900
December	0	0	0	0	2,702	2,025	7,678	2,624	20,613	3,441	123,886	1,208	43,471	3,441	12,026
January	0	0	0	0	2,702	2,025	7,678	2,624	20,613	3,441	123,886	1,208	43,471	3,441	12,026
February	0	0	0	0	2,441	1,829	6,935	2,370	18,619	3,108	111,897	1,091	39,264	3,108	11,648
March	0	0	0	0	2,702	1,806	6,142	2,239	17,154	3,079	110,844	966	34,777	3,079	10,161
April	0	0	0	0	2,615	1,281	3,715	1,562	11,160	2,259	81,318	584	21,034	2,259	7,257
May	0	0	0	0	2,702	940	3,839	1,494	10,451	1,830	65,894	604	21,735	1,830	7,364
June	0	0	0	0	2,615	687	3,715	1,376	9,486	1,479	53,238	584	21,034	1,479	7,257
July	0	0	0	0	2,702	710	3,839	1,422	9,802	1,528	55,013	604	21,735	1,528	7,364
August	0	0	0	0	2,702	710	3,839	1,422	9,802	1,528	55,013	604	21,735	1,528	7,364
September	0	0	0	0	2,615	687	3,715	1,376	9,486	1,479	53,238	584	21,034	1,479	7,257
Annual	**0**	**0**	**0**	**0**	**31,816**	**15,220**	**62,363**	**22,425**	**166,519**	**27,836**	**1,002,107**	**9,808**	**353,097**	**27,836**	**108,990**

DAILY NUTRIENT PRODUCTION

	Pounds/Day of Nutrients from **LIQUIDS**			Pounds/Day of Nutrients from **SOLIDS**			Pounds/Day of Nutrients from **GRAZING**		
Type of Animal	N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O
MILKER	41.38	15.44	27.51	62.07	23.17	41.27	103.45	38.61	68.78
MILKER (DRY)	0.00	0.00	0.00	8.10	2.58	6.24	8.10	2.58	6.24
CALVES (1-12 Months)	0.00	0.00	0.00	1.24	0.37	1.16	1.24	0.37	1.16
	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
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

CLIENT: **Mike Bush Planned Herd Size**
ASSISTED BY: **Pedersen**

CHECKED BY:

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	641	239	426	1,000	370	676	1,855	678	1,259	0	0	0	3,496	1,288	2,361
November	1,241	463	825	2,094	768	1,422	49	15	37	0	0	0	3,384	1,247	2,285
December	1,283	479	853	2,214	809	1,508	0	0	0	0	0	0	3,496	1,288	2,361
January	1,283	479	853	2,214	809	1,508	0	0	0	0	0	0	3,496	1,288	2,361
February	1,159	432	770	1,999	731	1,362	0	0	0	0	0	0	3,158	1,164	2,133
March	1,026	383	682	1,829	666	1,253	641	239	426	0	0	0	3,496	1,288	2,361
April	621	232	413	1,163	420	803	1,600	595	1,069	0	0	0	3,384	1,247	2,285
May	641	239	426	1,076	394	734	1,779	654	1,201	0	0	0	3,496	1,288	2,361
June	621	232	413	968	358	654	1,795	656	1,219	0	0	0	3,384	1,247	2,285
July	641	239	426	1,000	370	676	1,855	678	1,259	0	0	0	3,496	1,288	2,361
August	641	239	426	1,000	370	676	1,855	678	1,259	0	0	0	3,496	1,288	2,361
September	621	232	413	968	358	654	1,795	656	1,219	0	0	0	3,384	1,247	2,285
Annual	**10,419**	**3,889**	**6,927**	**17,526**	**6,427**	**11,925**	**13,222**	**4,852**	**8,950**	**0**	**0**	**0**	**41,167**	**15,167**	**27,803**

ANIMAL WASTE MANAGEMENT WORKSHEET

Version 2.3

CLIENT: **Mike Bush Planned Herd Size**
ASSISTED BY: **Pedersen**
CHECKED BY:

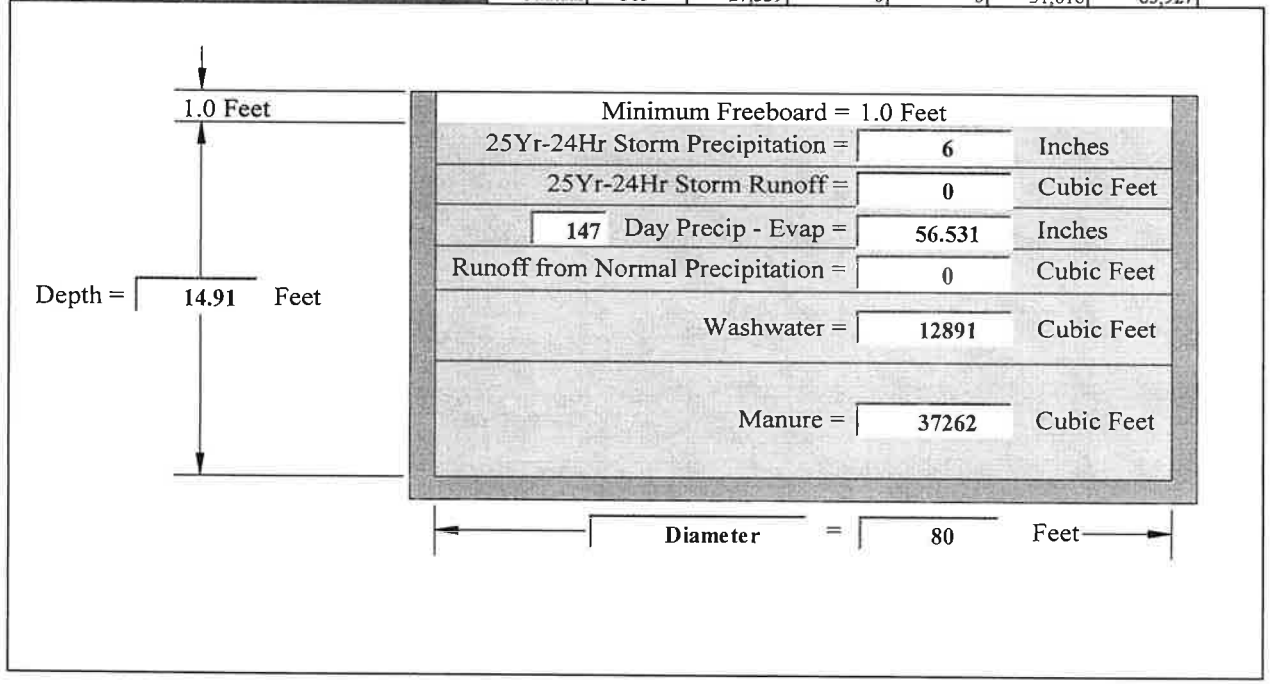
ANIMAL WASTE MANAGEMENT SYSTEM STORAGE

TANK

Tank Parameters	Value
Storage Period, Days=	147
Tank Diameter, Feet=	80
Existing Storage, Cubic Feet=	7,971.00
Surface Area of Existing Storage, SF=	0
25 Year-24 Hour Storm Runoff, CF=	0
Volume Needed, Cubic Feet=	82,924
Design Volume, Cubic Feet=	74,907
Is Tank Covered?	NO
Tank Dimensions?	Circular

MONTHLY INFLOWS INTO TANK

Month	Number of days	Rain-Evap on Tank CF	Rain-Evap on Existing Storage, CF	Normal Runoff CF	Washwater CF	Manure CF
October	31	2,537	0	0	2,702	4,058
November	30	5,045	0	0	2,615	7,855
December	31	5,715	0	0	2,702	8,116
January	31	5,434	0	0	2,702	8,116
February	28	4,049	0	0	2,441	7,331
March	31	3,806	0	0	2,702	6,493
April	30	1,729	0	0	2,615	3,927
May	31	427	0	0	2,702	4,058
June	30	-100	0	0	2,615	3,927
July	31	-1,034	0	0	2,702	4,058
August	31	-749	0	0	2,702	4,058
September	30	481	0	0	2,615	3,927
Annual	365	27,339	0	0	31,816	65,927



ANIMAL WASTE MANAGEMENT WORKSHEET

Version 2.3

CLIENT: **Mike Bush Planned Herd Size**
ASSISTED BY: **Pedersen**
CHECKED BY:

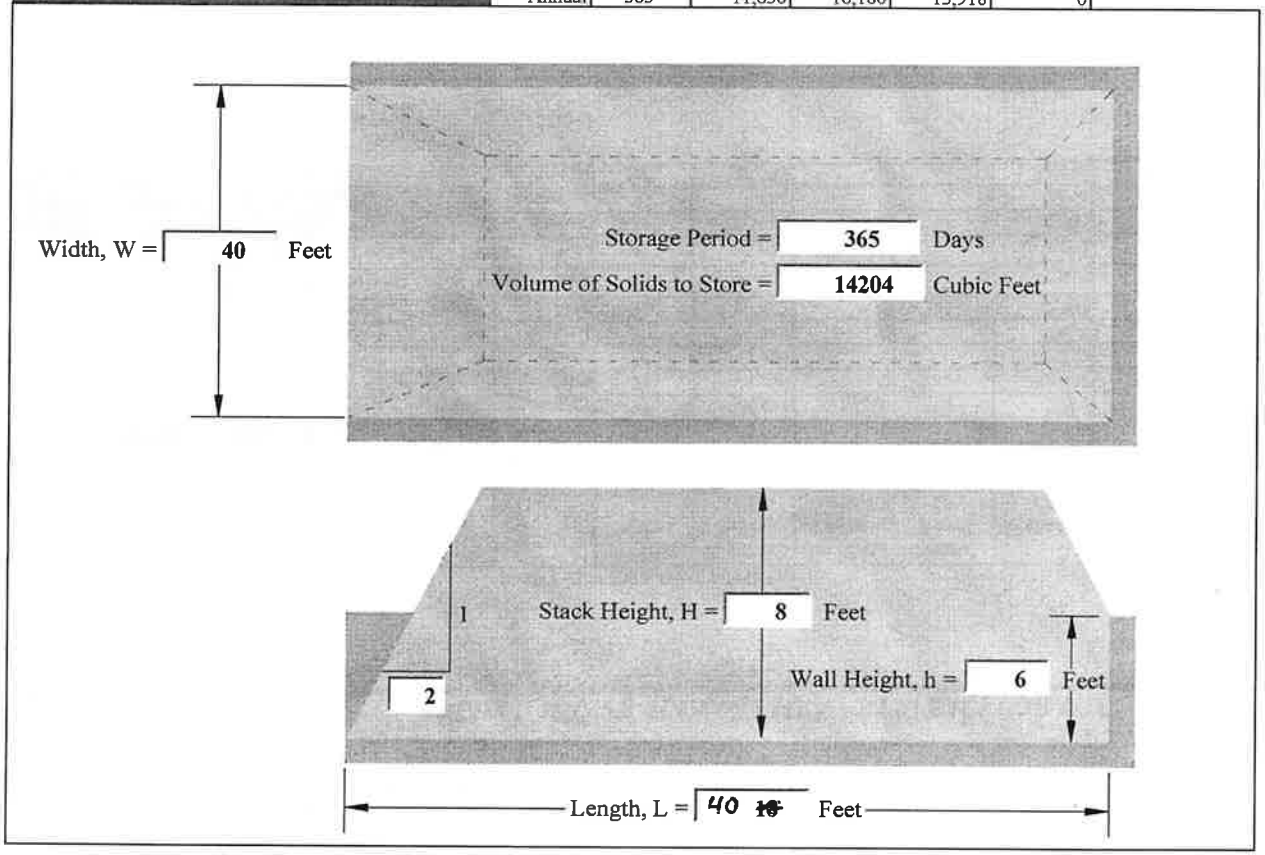
ANIMAL WASTE MANAGEMENT SYSTEM STORAGE

SOLIDS STACKING FACILITY

Solids Storage Facility Parameters	Value
Storage Period, Days=	365
Stacking Width, W in Feet=	40
Stacking Height, H in Feet=	8.00
Wall Height, h in Feet=	6.00
Stack Side Slope (X:1)=	2.00
Existing Storage, Cubic Feet=	11,466
Surface Area of Existing Storage, SF=	0
25 Year-24 Hour Storm Runoff, CF=	0
Volume Needed, Cubic Feet=	14,204
Design Volume, Cubic Feet=	3,034
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	490	1,038	764	0
November	30	1387	1,748	1,568	0
December	31	1587	1,855	1,721	0
January	31	1587	1,855	1,721	0
February	28	1433	1,675	1,554	0
March	31	1455	1,624	1,540	0
April	30	1068	1,190	1,129	0
May	31	720	1,110	915	0
June	30	474	1,004	739	0
July	31	490	1,038	764	0
August	31	490	1,038	764	0
September	30	474	1,004	739	0
Annual	365	11,656	16,180	13,918	0



U.S. Department of Agriculture
Natural Resources Conservation Service

ANIMAL WASTE MANAGEMENT WORKSHEET

Version 2.3

12/1/2005
STATE: OREGON

CLIENT: **Mike Bush Planned Herd Size**
ASSISTED BY: **Pedersen**

CHECKED BY:

ANIMAL WASTE MANAGEMENT SYSTEM APPLICATION

MANAGEMENT CRITERIA FOR TRACTOR SPREADER APPLICATION OF SOLIDS

To apply **27,836** cubic feet of solids generated from the operation it will take approximately **112** 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					
T 53 1	8.1	Hay/Pasture Mix 20% Protein	**200**	**249**	**15**	**7,567**	**47.22**	**384**	1.00	0.4	541	5
2	7.4	Hay/Pasture Mix 20% Protein	**200**	**249**	**15**	**7,567**	**47.22**	**384**	1.00	0.4	541	5
3	5.7	Hay/Pasture Mix 20% Protein	**200**	**249**	**15**	**7,567**	**47.22**	**384**	1.00	0.4	541	5
4	6.9	Hay/Pasture Mix 20% Protein	**200**	**249**	**15**	**7,567**	**47.22**	**384**	1.00	0.4	541	5
T477 1	29.7	Hay/Pasture Mix 20% Protein	**200**	**249**	**15**	**7,567**	**47.22**	**384**	1.00	0.4	541	5
647 1	3.3	Hay/Pasture Mix 20% Protein	**200**	**249**	**15**	**7,567**	**47.22**	**384**	1.00	0.4	541	5
2	3.6	Hay/Pasture Mix 20% Protein	**200**	**249**	**15**	**7,567**	**47.22**	**384**	1.00	0.4	541	5
T477 2-7	16.9	Hay/Pasture Mix 20% Protein	**200**	**249**	**15**	**7,567**	**47.22**	**384**	1.00	0.4	541	5
0												

MANAGEMENT CRITERIA FOR BIG GUN SPRINKLER APPLICATION OF LIQUIDS

To apply **815,247** gallons of liquids generated from the operation it will take approximately **45** hours of pumping annually. Based on applying NITROGEN, N
at agronomic rate use the application depths, set times, and travel rates listed below for each crop.

Field Number	Acres	Crop	Sprinkler Flowrate GPM	Wetted Diameter Feet	Portion of Wetted Diameter Receiving Liquids	NITROGEN, N Concentration in Storage Facility		Pounds of Nutrients to be Applied	Number of Applications Needed to meet Crop Demand	Inches of Liquids to Apply	Application Rate in Inches/Hour	Set Time Needed in Hours	Travel Rate Needed Feet/Minute
						PPM	Lbs/1000Gal						
T 53 1	8.1	Hay/Pasture Mix 20% Protein	**300**	**250**	1/2 Circle	**1,072**	**8.95**	**384**	1.00	2.42	1.45	4.11	0.79
2	7.4	Hay/Pasture Mix 20% Protein	**300**	**250**	1/2 Circle	**1,072**	**8.95**	**384**	1.00	2.42	1.45	4.11	0.79
3	5.7	Hay/Pasture Mix 20% Protein	**300**	**250**	1/2 Circle	**1,072**	**8.95**	**384**	1.00	2.42	1.45	4.11	0.79
4	6.9	Hay/Pasture Mix 20% Protein	**300**	**250**	1/2 Circle	**1,072**	**8.95**	**384**	1.00	2.42	1.45	4.11	0.79
T477 1	29.7	Hay/Pasture Mix 20% Protein	**300**	**250**	1/2 Circle	**1,072**	**8.95**	**384**	1.00	2.42	1.45	4.11	0.79
647 1	3.3	Hay/Pasture Mix 20% Protein	**300**	**250**	1/2 Circle	**1,072**	**8.95**	**384**	1.00	2.42	1.45	4.11	0.79
2	3.6	Hay/Pasture Mix 20% Protein	**300**	**250**	1/2 Circle	**1,072**	**8.95**	**384**	1.00	2.42	1.45	4.11	0.79
T477 2-7	16.9	Hay/Pasture Mix 20% Protein	**300**	**250**	1/2 Circle	**1,072**	**8.95**	**384**	1.00	2.42	1.45	4.11	0.79
0													

MANAGEMENT CRITERIA FOR TANK WAGON APPLICATION OF LIQUIDS

CLIENT: **Mike Bush Planned Herd Size**
ASSISTED BY: **Pedersen**

CHECKED BY:

ANIMAL WASTE MANAGEMENT SYSTEM APPLICATION

To apply **815,247** gallons of liquids generated from the operation it will take approximately **354** trips annually. Based on applying NITROGEN, N
at agronomic rates use the application depths, travel lengths, and loads per acre listed below for each crop.

Field Number	Acres	Crop	Tank Wagon Capacity Gallons	Spread Width Feet	NITROGEN, N Concentration in Storage Facility		Pounds of Nutrients to be Applied	Number of Applications Needed to meet Crop Demand	Inches of Liquids to Apply	Travel Length per Load Needed in Feet	Loads per Acre
					PPM	Lbs/1000Gal					
T 53 1	8.1	Hay/Pasture Mix 20% Protein	**2,300**	**15**	**1,072**	**8.95**	**384**	1.00	1.03	238	12.2
2	7.4	Hay/Pasture Mix 20% Protein	**2,300**	**15**	**1,072**	**8.95**	**384**	1.00	1.03	238	12.2
3	5.7	Hay/Pasture Mix 20% Protein	**2,300**	**15**	**1,072**	**8.95**	**384**	1.00	1.03	238	12.2
4	6.9	Hay/Pasture Mix 20% Protein	**2,300**	**15**	**1,072**	**8.95**	**384**	1.00	1.03	238	12.2
T477 1	29.7	Hay/Pasture Mix 20% Protein	**2,300**	**15**	**1,072**	**8.95**	**384**	1.00	1.03	238	12.2
647 1	3.3	Hay/Pasture Mix 20% Protein	**2,300**	**15**	**1,072**	**8.95**	**384**	1.00	1.03	238	12.2
2	3.6	Hay/Pasture Mix 20% Protein	**2,300**	**15**	**1,072**	**8.95**	**384**	1.00	1.03	238	12.2
T477 2-7	16.9	Hay/Pasture Mix 20% Protein	**2,300**	**15**	**1,072**	**8.95**	**384**	1.00	1.03	238	12.2
0											

U.S. Department of Agriculture
Natural Resources Conservation Service

ANIMAL WASTE MANAGEMENT WORKSHEET

Version 2.3

12/1/2005
STATE: OREGON

CLIENT: Mike Bush Planned Herd Size
ASSISTED BY: Pedersen
CHECKED BY:

ANIMAL WASTE MANAGEMENT SYSTEM INVENTORY

ANIMAL INVENTORY

Type of Animal	Number of Animals	Average Weight (lbs.)	Animal Units (1,000 lb.)	Milk Production in Pounds/Cow/Day= 70						Manure CF/D/AU	Annual	
				Nutrient Production								
				(lbs./day/1000 lb. Animal Unit)			(lbs./day)					
				N	P	K	N	P	K		Days Confined	Days Grazed
MILKER	200	900	180.0	0.57	0.09	0.32	103.45	16.85	57.08	1.57	252	113
MILKER (DRY)	25	900	22.5	0.36	0.05	0.23	8.10	1.13	5.18	1.10	178	187
CALVES (1-12 Months)	40	100	4.0	0.31	0.04	0.24	1.24	0.16	0.96	1.30	365	0
Totals/Averages-	265	633	206.5	0.55	0.09	0.31	112.8	18.1	63.2	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.
MILKER	50%	0%	0%	0%	0%	20%	50%	50%	50%	50%	50%	50%	
	200	200	200	200	200	200	200	200	200	200	200	200	666
MILKER (DRY)	100%	20%	0%	0%	0%	0%	20%	70%	100%	100%	100%	100%	
	25	25	25	25	25	25	25	25	25	25	25	25	137
CALVES (1-12 Months)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	40	40	40	40	40	40	40	40	40	40	40	40	0
													0
													0
													0
													0
													0
													0
													0
Total AUM's Available>	99						102	102	102	101	101	101	708
Total AUM's Needed>>>	113	5	0	0	0	36	95	106	113	113	113	113	803
Total AUM's>>>>>>>>>>	-14	-5	0	0	0	-36	8	-4	-11	-12	-12	-12	-95

ANIMAL WASTE MANAGEMENT WORKSHEET

Version 2.3

CLIENT: Mike Bush Planned Herd Size
ASSISTED BY: Pedersen
CHECKED BY:

ANIMAL WASTE MANAGEMENT SYSTEM INVENTORY

WEATHER STATION: TILLAMOOK 1 W

Month	25Yr-24Hr	6.00	Lot Runoff Factors as a Percent of Monthly Precipitation	
	Monthly Average in Inches			
	Precipitation	Evaporation	Paved	Unpaved
October	7.48	1.42	50%	20%
November	12.80	0.75	60%	25%
December	14.25	0.60	60%	25%
January	13.46	0.48	60%	25%
February	10.45	0.78	50%	25%
March	10.35	1.26	45%	15%
April	6.03	1.90	40%	15%
May	4.24	3.22	40%	10%
June	3.16	3.40	35%	10%
July	1.44	3.91	30%	0%
August	1.73	3.52	40%	10%
September	3.69	2.54	45%	15%
Annual	89.08	23.78		

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 >>	
Surface Area of Silage Storage Facility>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> Does Silage Seepage Drain to Storage Facility? (Y/N) NO	0
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	200.0	2	0.03	12	1.6
Equipment Wash		2	75.00	150	20.1
Flushwater		2		0	0.0
Miscellaneous		2	245.00	490	65.5
Total>>>				652	87.2

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
T 53 1	8.1	Hay/Pasture Mix 20% Protein	50% DM	Ton	6.00	384	106	294
2	7.4	Hay/Pasture Mix 20% Protein	50% DM	Ton	6.00	384	106	294
3	5.7	Hay/Pasture Mix 20% Protein	50% DM	Ton	6.00	384	106	294
4	6.9	Hay/Pasture Mix 20% Protein	50% DM	Ton	6.00	384	106	294
T477 1	29.7	Hay/Pasture Mix 20% Protein	50% DM	Ton	6.00	384	106	294
647 1	3.3	Hay/Pasture Mix 20% Protein	50% DM	Ton	6.00	384	106	294
2	3.6	Hay/Pasture Mix 20% Protein	50% DM	Ton	6.00	384	106	294
T477 2-7	16.9	Hay/Pasture Mix 20% Protein	50% DM	Ton	6.00	384	106	294
Off-Farm								

ANIMAL WASTE MANAGEMENT WORKSHEET

Version 2.3

CLIENT: Mike Bush Planned Herd Size

ASSISTED BY: Pedersen

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
MILKER	Free Stall	Wood Shavings	9.00	3.10	0.34	62	558
MILKER (DRY)	Free Stall	Wood Shavings	9.00	3.10	0.34	8	70
CALVES (1-12 Months)	Loose Housing	Loose Straw	2.50	9.30	3.72	15	37

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
MILKER	Press Type (Screw or Roller)	60%	58	39	262	21	75	36	2,103
MILKER (DRY)	Press Type (Screw or Roller)	100%	33	0	0	25	0	36	1,170
CALVES (1-12 Months)	Press Type (Screw or Roller)	100%	20	0	0	5	0	36	723
Total Solids>>			111	39	262	51	75		3,996

Natural Resources Conservation Service, Oregon February 2002

WASTE UTILIZATION SPECIFICATION SHEET

Client Mike Bush

Location: 9375 Trask River Road

Tillamook SWCD _____ Tract No. 53, 477, 647

Prepared By Pedersen _____ Date 03/05/04

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 50 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 open 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 IV

Design Approved by:/s/ Robert A. Redersen Date: 6/22/04

Job title: North Coast Basin Team Leader

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/ Michael Bush Date: 6-22-04

CERTIFICATION:

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

Certification by:/s/_____ Date:_____

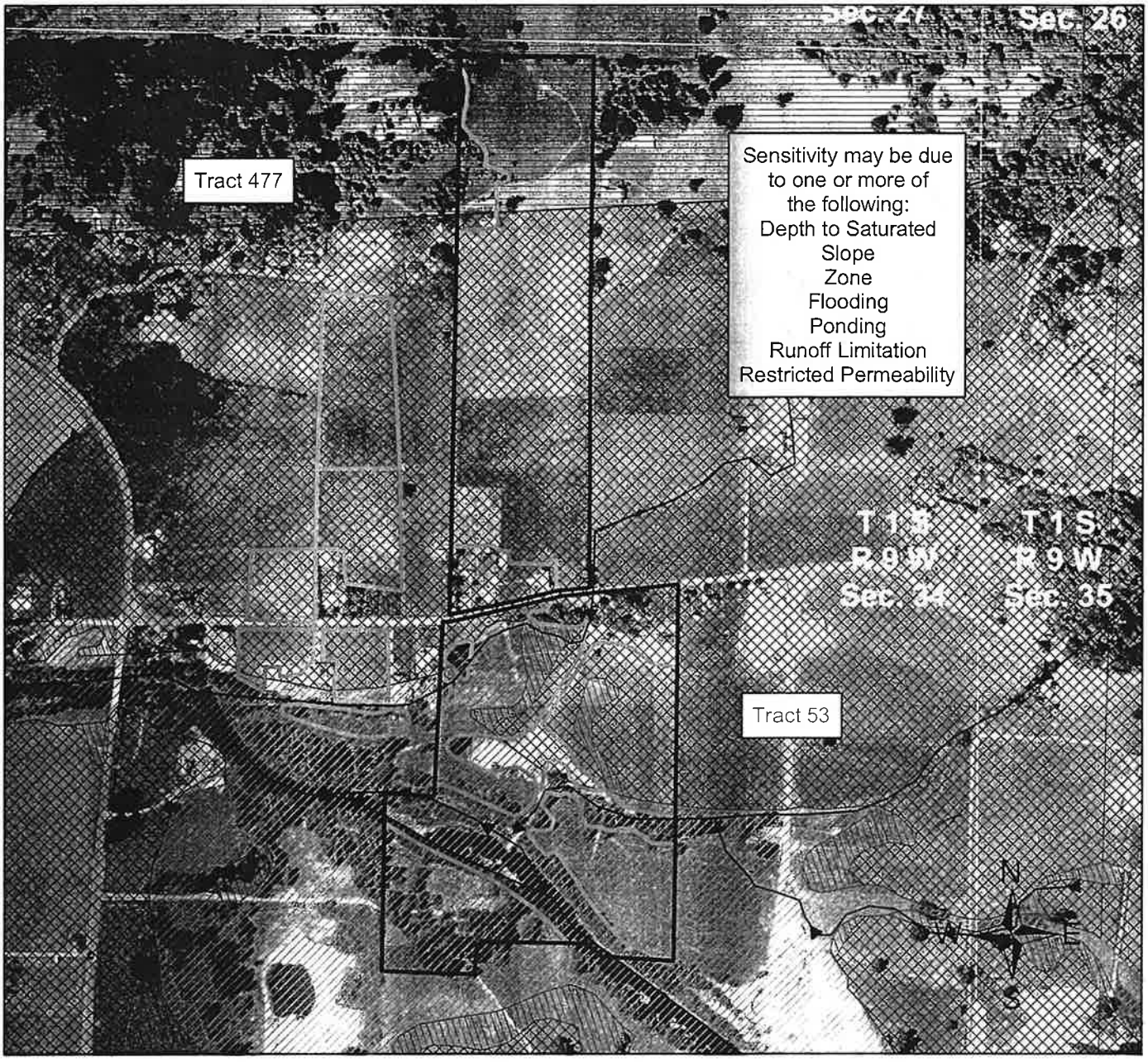
Job title:_____

MIKE BUSH
TR002

TILLAMOOK SERVICE CENTER
USDA - NRCS
TILLAMOOK COUNTY, OREGON

Tillamook County SWCD
Approximate Acres: 89.1
Date: 6/15/2005

Flood Boundary Map 1
Sensitive Manure Application Area



Legend

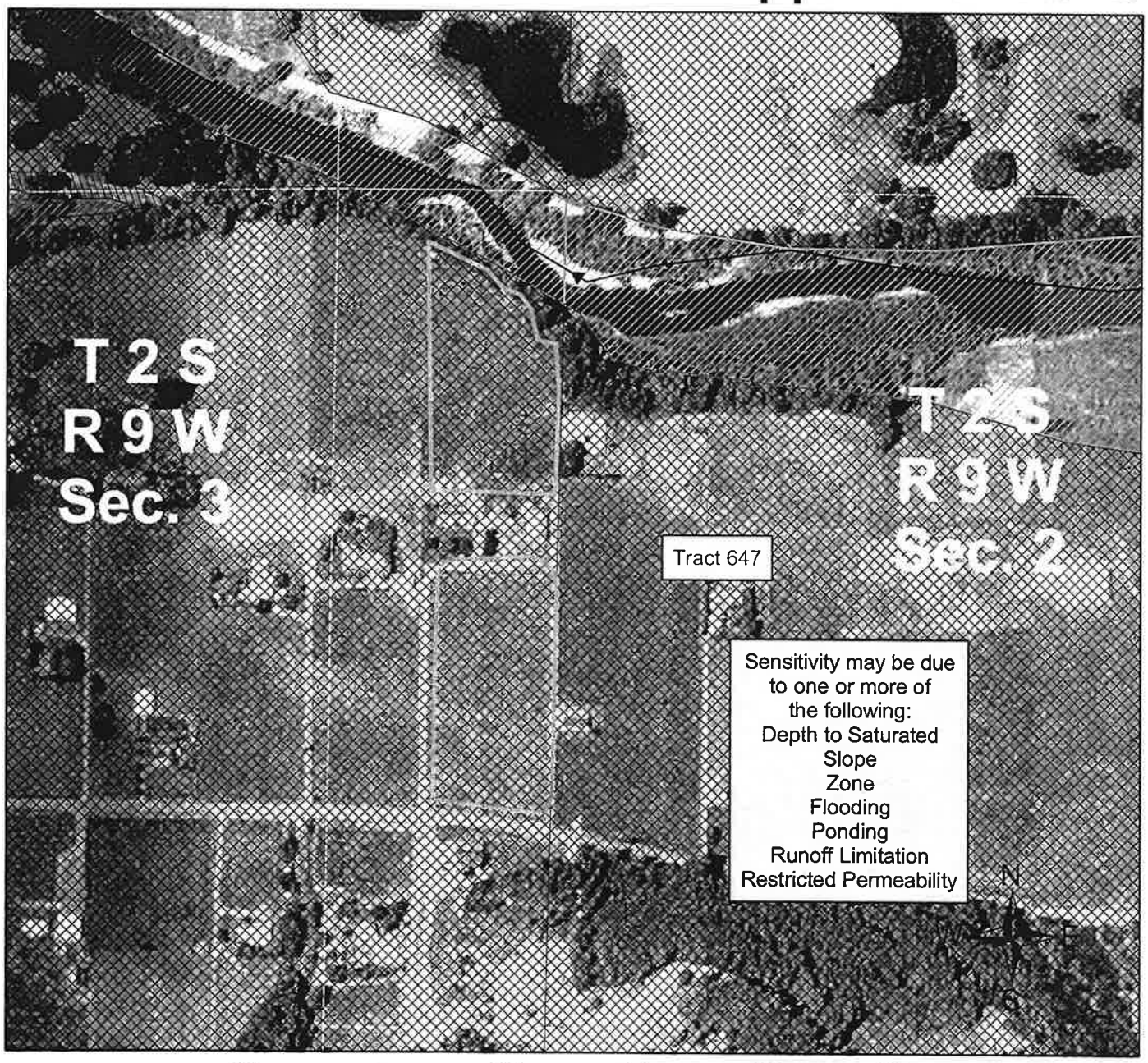
- Tract Boundary
- Planned Land Units
- Public Land Survey
- Sensitive Manure Application Area (100 Yr. Flood Plain)
- Undetermined Flood Plain
- Winter Manure Application Area (Outside 500 Yr. Flood)
- 500 Yr. Flood Plain
- Open Water Course

MIKE BUSH
TR002

TILLAMOOK SERVICE CENTER
USDA - NRCS
TILLAMOOK COUNTY, OREGON

Tillamook County SWCD
Approximate Acres: 6.9
Date: 6/15/2005

Flood Boundary Map 2
Sensitive Manure Application Area



Legend

- Tract Boundary
- Planned Land Units
- Public Land Survey
- Sensitive Manure Application Area (100 Yr. Flood Plain)
- Undetermined Flood Plain
- Winter Manure Application Area (Outside 500 Yr. Flood)
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- Open Water Course

United States Department of Agriculture

NRCS Natural Resources Conservation Service

Waste Utilization

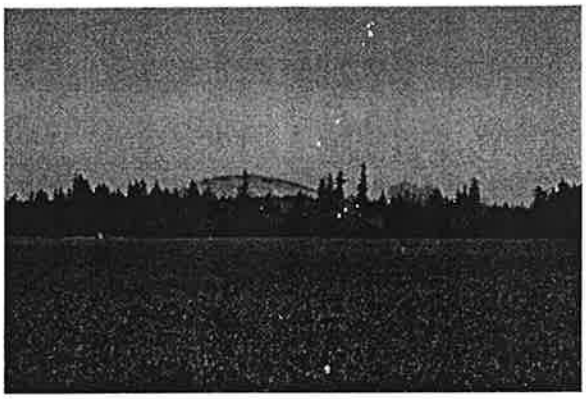
Conservation Practice Jobsheet

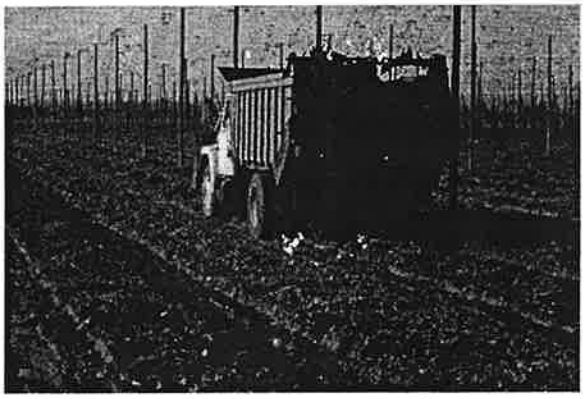
633 OR-JS

Natural Resources Conservation Service, Oregon

February 2002

Client Mike Bush Date 03/05/04





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

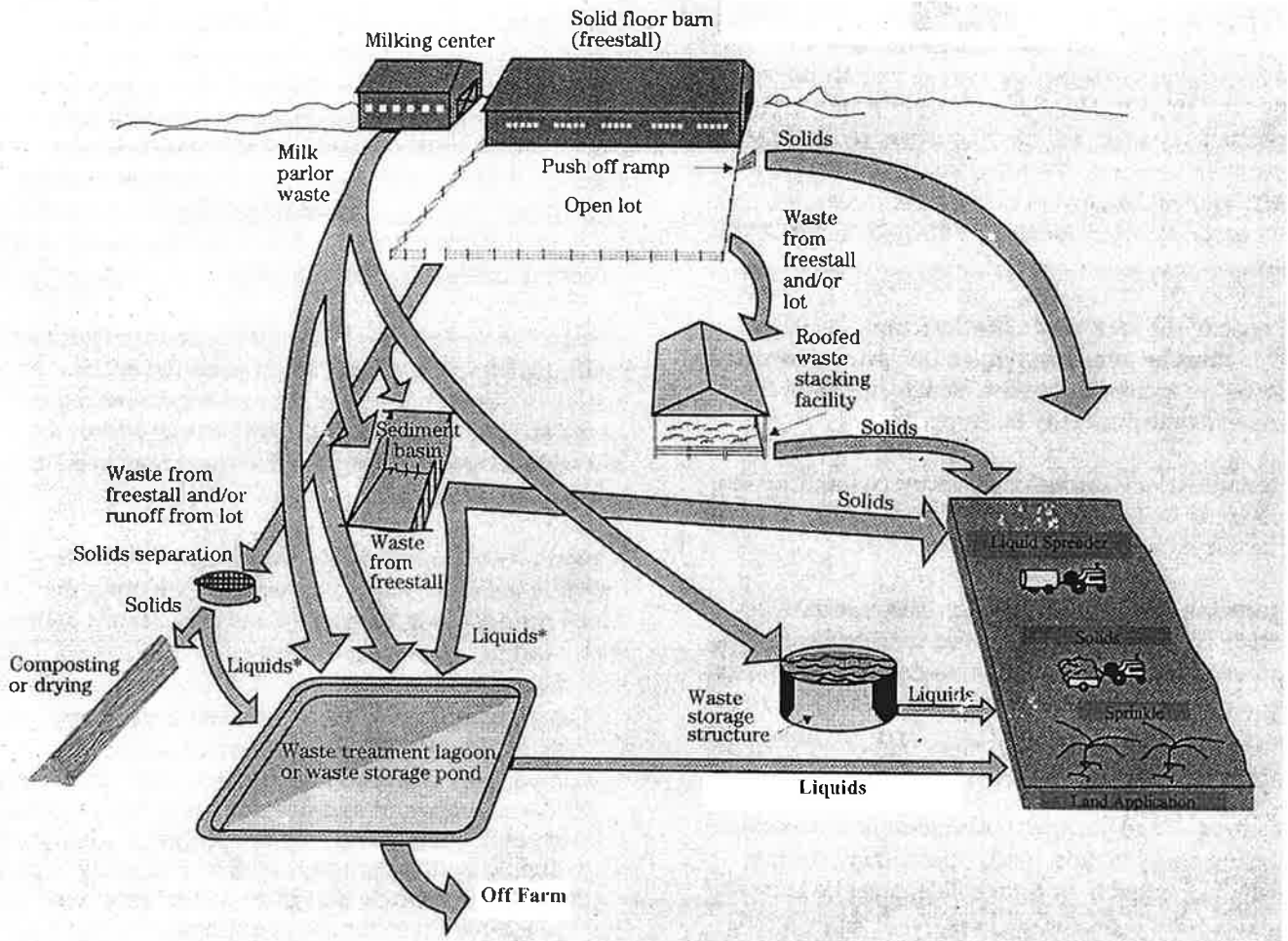
Waste utilization is generally one of several components of a resource management system used to manage manure and polluted water from livestock and poultry operations. Where the wastes are used to supply the fertility needs of crop and pasture, waste utilization is done as part of an overall resource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

WASTE UTILIZATION WORKSHEET

Spreader Equipment Calibration

(Using Bucket, Pan or Tarp)

Name:_____ 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:_____ 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:_____ 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:_____ Date:_____

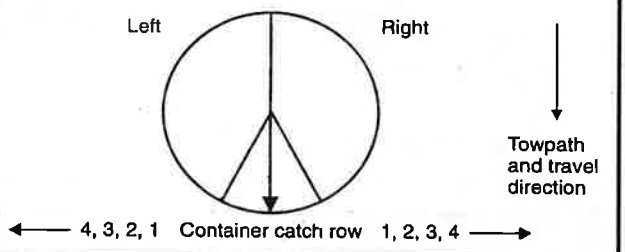
Perform the following operations to calibrate the traveling big gun sprinkler:

- ✓ 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 =								

Natural Resources Conservation Service, Oregon

WASTE UTILIZATION WORKSHEET

Nitrogen Based Waste Application

Name:_____ 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:_____ 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	

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.

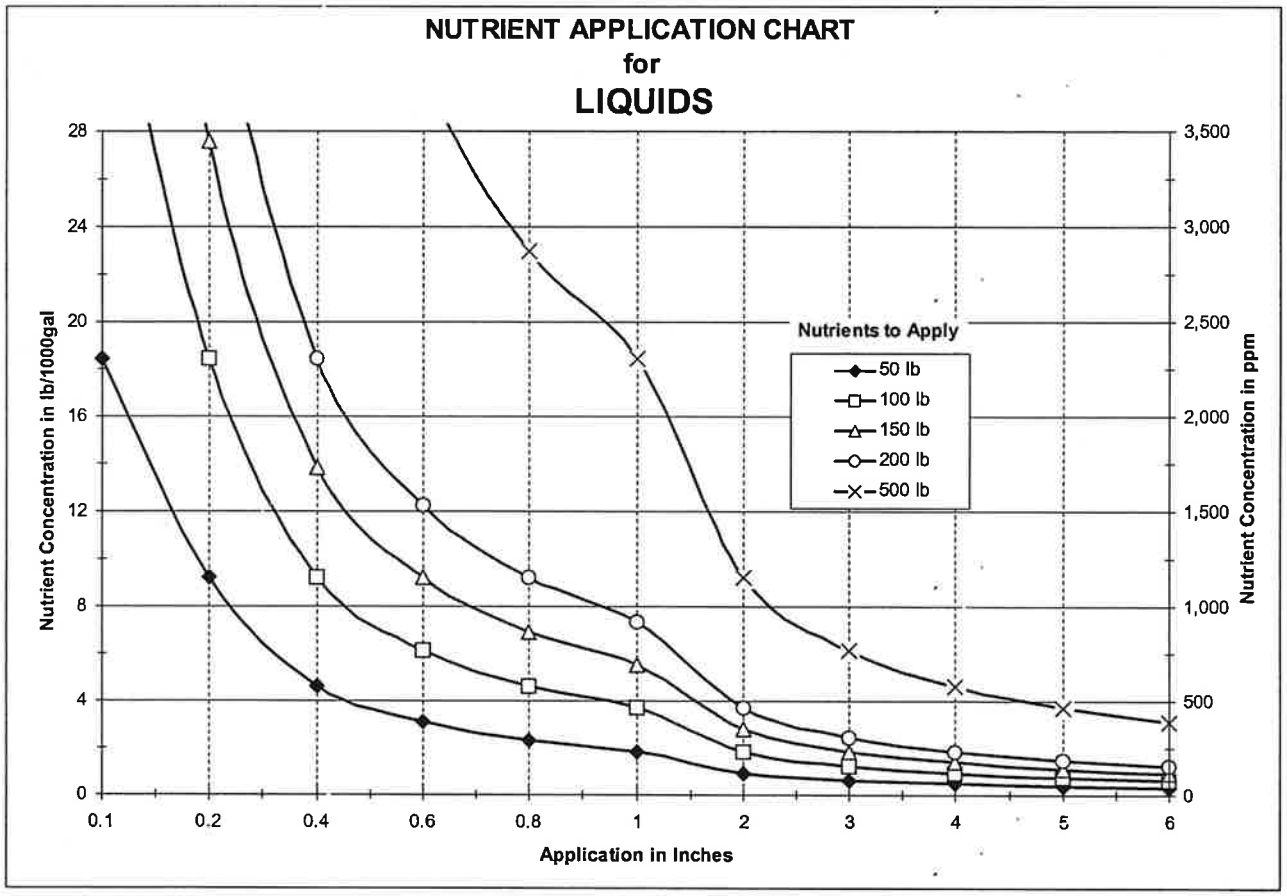
2 Manure is at the moisture content typically found in storage.

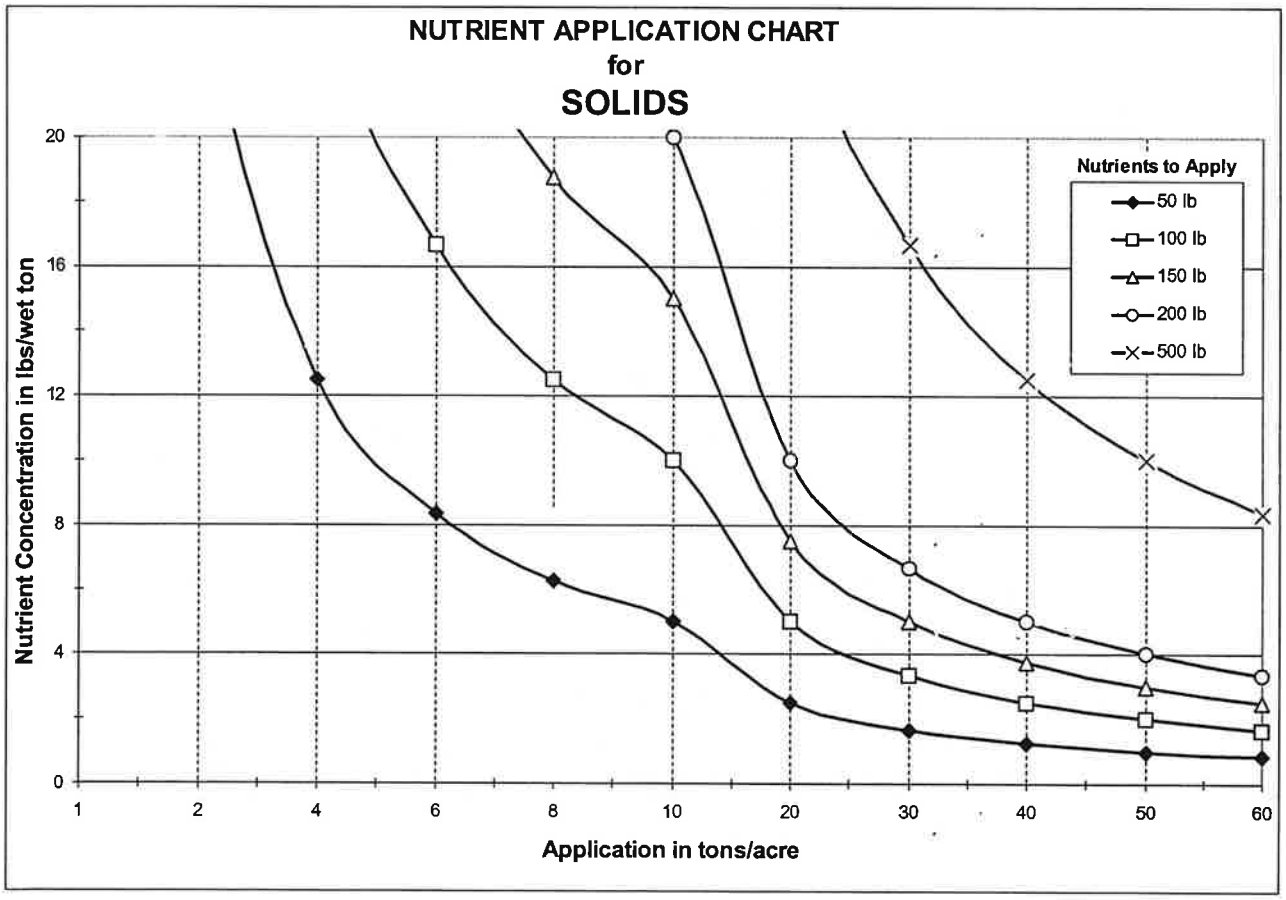
Table 1-2
Typical Nutrient Availability After Application

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





Natural Resources Conservation Service, Oregon

WASTE UTILIZATION WORKSHEET

Waste Application Record

Name:_____ 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

NUTRIENT MANAGEMENT DESIGN AND SPECIFICATIONS

Producer:	Mike Bush (Existing Herd Size)	Tract(s): 53	Field(s): TS3 1
Assisted by:	Pedersen	Date:	December 1, 2005

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 20% Protein	6

CURRENT SOIL TEST LEVELS (ppm or lb/ac)					
N	P	K	pH	S.O.M.%	EC
NA	21-58	459-1378	5.8-6.2		

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			
384		106		294		2-3 tons		

Table 2. Nutrient Sources

Credits		N	P_2O_5	K_2O
		pounds per acre		
1. Nitrogen credits from previous legume crop		0		
2. Residual from long-term manure application		0		
3. Irrigation water		0	0	0
4. Other (e.g., atmospheric deposition)		0	0	0
5. Total Credits-		0	0	0

Plant-Available Nutrients Applied to Field (Circle column that is landuser's decision)		N		P_2O_5		K_2O	
		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 Commercial Fertilizer	36		0		0	
8. Manure / Organic Materials (Source-) Dairy		348	0	214	0	396	0
9. Subtotal (sum of lines 6, 7 and 8)		384	0	214	0	396	0
10. Nutrients Recommended (from Table 1)		384	0	106	0	294	0
11. Nutrient Status (subtract line 10 from line 9)		0	0	108	0	102	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	384	P_2O_5	138	K_2O	255

Method, Form, and Timing of Application

The 1378 ppm of potassium in the soil is excessive. High potassium levels in the soil may cause livestock health problem. Recommend that forage tests be done to evaluate the potassium level in the forage. The 58 ppm of phosphorus is high Recommend 36 lbs of nitrogen commercial fertilizer be applied per acre to achieve the 6 tons of dry matter per acre per year. See attached letter from the Dairy Extension Agent. Manure and fertilizer should be applied in split applications between late February to mid September. Apply 60 lbs. of nitrogen per acre per application. See attached Nutrient Management Specification Sheet, the Manure Distribution Sheet Section, for manure application rates per field. Recommend applying manure evenly over all the fields during the year. Recommend soil tests in late October to evaluate how well the biosolid application rate matches the nitrogen needs of the forage.

NUTRIENT MANAGEMENT DESIGN AND SPECIFICATIONS

Producer:	Mike Bush (Existing Herd Size)	Tract(s): 53	Field(s): 2
Assisted by:	Pedersen	Date:	December 1, 2005

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 20% Protein	6

CURRENT SOIL TEST LEVELS (ppm or lb/ac)					
N	P	K	pH	S.O.M.%	EC
NA	59	1334	5.8		

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			
384		106		294		4-5 tons		

Table 2. Nutrient Sources

Credits		N	P_2O_5		K_2O	
		pounds per acre				
1. Nitrogen credits from previous legume crop		0				
2. Residual from long-term manure application		0				
3. Irrigation water		0	0		0	
4. Other (e.g., atmospheric deposition)		0	0		0	
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 Commercial Fertilizer	35		0		0	
8. Manure / Organic Materials (Source-)	Dairy	349	0	214	0	396	0
9.	Subtotal (sum of lines 6, 7 and 8)	384	0	214	0	396	0
10.	Nutrients Recommended (from Table 1)	384	0	106	0	294	0
11.	Nutrient Status (subtract line 10 from line 9)	0	0	108	0	102	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	384	P_2O_5	139	K_2O	257

Method, Form, and Timing of Application

The 1334 ppm of potassium in the soil is excessive. High potassium levels in the soil may cause livestock health problem. Recommend that forage tests be done to evaluate the potassium level in the forage. The 59 ppm of phosphorus is high Recommend 35 lbs of nitrogen commercial fertilizer be applied per acre to achieve the 6 tons of dry matter per acre per year. See attached letter from the Dairy Extension Agent. Manure and fertilizer should be applied in split applications between late February to mid September. Apply 60 lbs. of nitrogen per acre per application. See attached Nutrient Management Specification Sheet, the Manure Distribution Sheet Section, for manure application rates per field. Recommend applying manure evenly over all the fields during the year. Recommend soil tests in late October to evaluate how well the biosolid application rate matches the nitrogen needs of the forage.

NUTRIENT MANAGEMENT DESIGN AND SPECIFICATIONS

Producer:	Mike Bush (Existing Herd Size)	Tract(s): 53	Field(s): 3
Assisted by:	Pedersen	Date:	December 1, 2005

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 20% Protein	6

CURRENT SOIL TEST LEVELS (ppm or lb/ac)					
N	P	K	pH	S.O.M.%	EC
NA	27	546	6.2		

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			
384		106		294		2 tons		

Table 2. Nutrient Sources

Credits		N	P_2O_5		K_2O	
		pounds per acre				
1. Nitrogen credits from previous legume crop		0				
2. Residual from long-term manure application		0				
3. Irrigation water		0	0		0	
4. Other (e.g., atmospheric deposition)		0	0		0	
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 Commercial Fertilizer	84		0		0	
8. Manure / Organic Materials (Source-)	Dairy	300	0	173	0	319	0
9.	Subtotal (sum of lines 6, 7 and 8)	384	0	173	0	319	0
10.	Nutrients Recommended (from Table 1)	384	0	106	0	294	0
11.	Nutrient Status (subtract line 10 from line 9)	0	0	67	0	25	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	384	P_2O_5	133	K_2O	245

Method, Form, and Timing of Application

The 546 ppm of potassium in the soil is high. High potassium levels in the soil may cause livestock health problem. Recommend that forage tests be done to evaluate the potassium level in the forage. Recommend 84 lbs of nitrogen commercial fertilizer be applied per acre to achieve the 6 tons of dry matter per acre per year. See attached letter from the Dairy Extension Agent. Manure and fertilizer should be applied in split applications between late February to mid September. Apply 60 lbs. of nitrogen per acre per application. See attached Nutrient Management Specification Sheet, the Manure Distribution Sheet Section, for manure application rates per field. Recommend applying manure evenly over all the fields during the year. Recommend soil tests in late October to evaluate how well the biosolid application rate matches the nitrogen needs of the forage.

NUTRIENT MANAGEMENT DESIGN AND SPECIFICATIONS

Producer:	Mike Bush (Existing Herd Size)	Tract(s): 53	Field(s): 4
Assisted by:	Pedersen	Date:	December 1, 2005

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 20% Protein	6

CURRENT SOIL TEST LEVELS (ppm or lb/ac)					
N	P	K	pH	S.O.M.%	EC
NA	22	249	6.3		

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			
384		106		294		2 ton		

Table 2. Nutrient Sources

Credits		N		P_2O_5		K_2O	
		pounds per acre					
1. Nitrogen credits from previous legume crop		0					
2. Residual from long-term manure application		0					
3. Irrigation water		0		0		0	
4. Other (e.g., atmospheric deposition)		0		0		0	
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 Commercial Fertilizer	313		0		0	
8. Manure / Organic Materials (Source-)	Dairy	71	0	52	0	98	0
9.	Subtotal (sum of lines 6, 7 and 8)	384	0	52	0	98	0
10.	Nutrients Recommended (from Table 1)	384	0	106	0	294	0
11.	Nutrient Status (subtract line 10 from line 9)	0	0	-54	0	-196	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	384	P_2O_5	56	K_2O	104

Method, Form, and Timing of Application

The 249 ppm of potassium in the soil is medium. Recommend 313 lbs of nitrogen commercial fertilizer be applied per acre to achieve the 6 tons of dry matter per acre per year. See attached letter from the Dairy Extension Agent. Manure and fertilizer should be applied in split applications between late February to mid September. Apply 60 lbs. of nitrogen per acre per application. See attached Nutrient Management Specification Sheet, the Manure Distribution Sheet Section, for manure application rates per field. Recommend applying manure evenly over all the fields during the year. Recommend soil tests in late October to evaluate how well the biosolid application rate matches the nitrogen needs of the forage.

NUTRIENT MANAGEMENT DESIGN AND SPECIFICATIONS

Producer:	Mike Bush (Existing Herd Size)	Tract(s): 477	Field(s): T477 1
Assisted by:	Pedersen		Date: December 1, 2005

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 20% Protein	6

CURRENT SOIL TEST LEVELS (ppm or lb/ac)					
N	P	K	pH	S.O.M.%	EC
NA	18-46	487-1318	5.1-5.4		

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			
384		106		294		5-6 tons		

Table 2. Nutrient Sources

Credits		N		P_2O_5		K_2O	
		pounds per acre					
1. Nitrogen credits from previous legume crop		0					
2. Residual from long-term manure application		0					
3. Irrigation water		0		0		0	
4. Other (e.g., atmospheric deposition)		0		0		0	
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 Commercial Fertilizer	142		0		0	
8. Manure / Organic Materials (Source-) Dairy		242	0	132	0	243	0
9. Subtotal (sum of lines 6, 7 and 8)		384	0	132	0	243	0
10. Nutrients Recommended (from Table 1)		384	0	106	0	294	0
11. Nutrient Status (subtract line 10 from line 9)		0	0	26	0	-51	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	384	P_2O_5	132	K_2O	244

Method, Form, and Timing of Application

The 1318 ppm of potassium in the soil is excessive. High potassium levels in the soil may cause livestock health problem. Recommend that forage tests be done to evaluate the potassium level in the forage. The 46 ppm of phosphorus is high Recommend 142 lbs of nitrogen commercial fertilizer be applied per acre to achieve the 6 tons of dry matter per acre per year. See attached letter from the Dairy Extension Agent. Manure and fertilizer should be applied in split applications between late February to mid September. Apply 60 lbs. of nitrogen per acre per application. See attached Nutrient Management Specification Sheet, the Manure Distribution Sheet Section, for manure application rates per field. Recommend applying manure evenly over all the fields during the year. Recommend soil tests in late October to evaluate how well the biosolid application rate matches the nitrogen needs of the forage.

NUTRIENT MANAGEMENT DESIGN AND SPECIFICATIONS

Producer:	Mike Bush (Existing Herd Size)	Tract(s): 647	Field(s): T647 1
Assisted by:	Pedersen		Date: December 1, 2005

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 20% Protein	6

CURRENT SOIL TEST LEVELS (ppm or lb/ac)					
N	P	K	pH	S.O.M.%	EC
NA	63	1522	5.7		

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			
384		106		294		4-5 tons		

Table 2. Nutrient Sources

Credits		N		P_2O_5		K_2O	
		pounds per acre					
1. Nitrogen credits from previous legume crop		0					
2. Residual from long-term manure application		0					
3. Irrigation water		0		0		0	
4. Other (e.g., atmospheric deposition)		0		0		0	
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 Commercial Fertilizer	350		0		0	
8. Manure / Organic Materials (Source-)	Dairy	34	0	25	0	47	0
9.	Subtotal (sum of lines 6, 7 and 8)	384	0	25	0	47	0
10.	Nutrients Recommended (from Table 1)	384	0	106	0	294	0
11.	Nutrient Status (subtract line 10 from line 9)	0	0	-81	0	-247	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	384	P_2O_5	174	K_2O	319

Method, Form, and Timing of Application

The 1522 ppm of potassium in the soil is excessive. High potassium levels in the soil may cause livestock health problem. Recommend that forage tests be done to evaluate the potassium level in the forage. The 63 ppm of phosphorus is high Recommend 350 lbs of nitrogen commercial fertilizer be applied per acre to achieve the 6 tons of dry matter per acre per year. See attached letter from the Dairy Extension Agent. Manure and fertilizer should be applied in split applications between late February to mid September. Apply 60 lbs. of nitrogen per acre per application. See attached Nutrient Management Specification Sheet, the Manure Distribution Sheet Section, for manure application rates per field. Recommend applying manure evenly over all the fields during the year. Recommend soil tests in late October to evaluate how well the biosolid application rate matches the nitrogen needs of the forage.

NUTRIENT MANAGEMENT DESIGN AND SPECIFICATIONS

Producer:	Mike Bush (Existing Herd Size)	Tract(s): 647	Field(s): 2
Assisted by:	Pedersen	Date:	December 1, 2005

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 20% Protein	6

CURRENT SOIL TEST LEVELS (ppm or lb/ac)					
N	P	K	pH	S.O.M.%	EC
NA	63	1522	5.7		

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			
384		106		294		4-5 tons		

Table 2. Nutrient Sources

Credits	N	P_2O_5	K_2O
	pounds per acre		
1. Nitrogen credits from previous legume crop	0		
2. Residual from long-term manure application	0		
3. Irrigation water	0	0	0
4. Other (e.g., atmospheric deposition)	0	0	0
5. Total Credits-	0	0	0

Plant-Available Nutrients Applied to Field (Circle column that is landuser's decision)		N		P_2O_5		K_2O	
		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 Commercial Fertilizer	351		0		0	
8. Manure / Organic Materials (Source-)	Dairy	33	0	24	0	45	0
9.	Subtotal (sum of lines 6, 7 and 8)	384	0	24	0	45	0
10.	Nutrients Recommended (from Table 1)	384	0	106	0	294	0
11.	Nutrient Status (subtract line 10 from line 9)	0	0	-82	0	-249	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	384	P_2O_5	48	K_2O	89

Method, Form, and Timing of Application

The 1522 ppm of potassium in the soil is excessive. High potassium levels in the soil may cause livestock health problem. Recommend that forage tests be done to evaluate the potassium level in the forage. The 63 ppm of phosphorus is high Recommend 319 lbs of nitrogen commercial fertilizer be applied per acre to achieve the 6 tons of dry matter per acre per year. See attached letter from the Dairy Extension Agent. Manure and fertilizer should be applied in split applications between late February to mid September. Apply 60 lbs. of nitrogen per acre per application. See attached Nutrient Management Specification Sheet, the Manure Distribution Sheet Section, for manure application rates per field. Recommend applying manure evenly over all the fields during the year. Recommend soil tests in late October to evaluate how well the biosolid application rate matches the nitrogen needs of the forage.

NUTRIENT MANAGEMENT DESIGN AND SPECIFICATIONS

Producer:	Mike Bush (Existing Herd Size)	Tract(s): 477	Field(s): T477 2-7
Assisted by:	Pedersen	Date:	December 1, 2005

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 20% Protein	6

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

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			

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 Commercial Fertilizer	72		0		0	
8. Manure / Organic Materials (Source-)		14	14	10	10	19	19
9. Subtotal (sum of lines 6, 7 and 8)		86	14	10	10	19	19
10. Nutrients Recommended (from Table 1)		0	0	0	0	0	0
11. Nutrient Status (subtract line 10 from line 9)		86	14	10	10	19	19

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		P_2O_5		K_2O	
Method, Form, and Timing of Application NO SAMPLE TAKEN						

EXTENSION SERVICE
Tillamook County Office

May 28, 2002

Bob Pedersen
Tillamook NRCS Field Office
6415 Signal St.
Tillamook, OR 97141

Dear Bob,

Over the past five years, I have had the opportunity to study nutrient cycling dynamics on dairies in the Tillamook area. It has been observed that pastures will very in productivity based on environment, grazing management and soil fertility. Nitrogen utilization has been a major focus of my work looking specifically at nitrogen up takes by the pasture plant. I have seen pastures remove as little as 200 lbs of N per acre a year to as high as 750. Average pastures on dairies will use between 300 and 400lbs of nitrogen per acre each year.

With this understanding, it makes logical sense to me to use nitrogen utilization numbers in our animal waste management planning of 300 pounds nitrogen per year as a reasonable starting point. I think this is a conservative guess and would not hesitate adjusting this number if the landowner has other data indicating they are using N at higher levels. For example, yield data, grazing rotation records with removal data, and/or soil test data.

Sincerely,

Troy Downing

Troy Downing
Area Dairy Extension Agent

OREGON STATE UNIVERSITY

2204 Fourth Street
Tillamook, Oregon
97141

Telephone
503-842-3433

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

NUTRIENT MANAGEMENT SPECIFICATION SHEET
CODE 590

EXISTING HERD SIZE

Landowner/Operator: Mike Bush

Job Location: T 1S; R 9W; Sec. 34 & 2

County: Tillamook SWCD: Tillamook County Farm/Tract No. 53,477, 647

Field No. T-53 Fields 1,2,3,4 T-477 Fields 1,2,3,4,5,6,7 T-647 Fields 1,2

Prepared By: Pedersen Date: 10/2005

Purpose:

☐ To budget and supply nutrients for plant production.

☐ To properly utilize manure and organic by-products as a plant nutrient source.

☐ To minimize agricultural non-point source pollution of surface and ground water resources.

☐ To maintain or improve the physical, chemical and biological condition of soil.

Specifications:

☐ Manure is applied to the surface of permanent pastures in accordance with the enclosed Waste Utilization Conservation Practice Jobsheet.

☐ A target yield of 6 tons of dry matter per acre per yield is planned to utilize the nitrogen in the manure and/or commercial applied fertilizer.

☐ Manure and commercial fertilizer is applied in accordance with soil tests.

☐ Manure and/or commercial fertilizer is applied in split applications.

☐ Soil tests are taken at least every 5 years.

☐ Manure test are taken every 5 years. Samples will be collected from the equipment that applies the manure and wastewater to the fields.

☐ No more than 384 lbs. of nitrogen is applied per acre per year in accordance with the below Nutrient Distribution, Soil and forage tests will be used to justify the rates.

Manure Application Equipment to be used:
143-1,000 lb. animal units
2,300 Gallon Manure Tank Wagon
200 Bushel Manure Spreader

Manure Nutrient Distribution

Landowner: Mike Bush

Date 11/2005

			Grazing		Solids			Liquids (Spreader)			Liquids (Pumping)			
Tract	Field #	Grazing Cycles /YR	# N supplied by grazing/ field/yr	# of N supplied by grazing/ ac/yr	Loads of solid/yr	# of N per field/yr solids	# of N per from solids	Loads of Liquids/yr	# of N per field/yr liquid	# of N per ac/yr from liquid	Hours of Pumping	# of N per field/yr liquid	# of N per ac/yr from liquid	Total # of N per ac/yr
53	1	10	1402	173	25	942	116	87	492	61	0	0	0	350
53	2	10	1309	177	23	863	117	73	413	56	0	0	0	349
53	3	10	1122	197	11	392	69	35	197	35	0	0	0	300
53	4	0	0	0	8	314	45	28	157	23	0	0	0	68
477	1	10	5515	186	29	1098	37	97	551	19	0	0	0	241
477	2	0	0	0	1	56	9	5	28	5	0	0	0	14
477	3	0	0	0	1	38	9	3	19	5	0	0	0	14
477	4	0	0	0	1	20	9	2	10	5	0	0	0	14
477	5	0	0	0	0	15	9	1	7	5	0	0	0	14
477	6	0	0	0	0	18	9	2	9	5	0	0	0	14
477	7	0	0	0	0	10	9	1	5	5	0	0	0	14
647	1	0	0	0	2	78	24	7	39	12	0	0	0	36
647	2	0	0	0	2	78	22	7	39	11	0	0	0	33
	Totals		9348		105	3923		348	1967		0	0		

NOTE: For Farm Summary of all tracts you must highlight desired cell ranges go to Edit/Copy then click on the Summary Tab and click on Edit/Paste Special/ and under Paste select values/OK

Records are maintained of manure and or/or commmercial fertilizer applications.

Nutrient management plans are reviewed annually and adjustments are made as needed.

Manure is not applied within 35 feet of an open watercourse.

DESIGN APPROVAL:

Practice Code No.	Practice	Leand Discipline	Controlling Factor	Units	Job Class				
					I	II	III	IV	V
590	Nutrient Manage ment	CED-EE& BCSD-Agron	Area	Acres	160	320	640	All	All

This practice is classified as Job Class II

Design approved by: /s/ Date: 12/08/05

Job Title: Basin Team Leader

CLIENTS ACKNOWLEGEMENT STATEMENT:

The client acknowledges that:

a. They have received a copy of this specification and under-stands the contents and requirements.

b. The following information must be provided 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 nutrient 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.

d. Maintain records of nutrient application as required by state and local regulations.

Accepted by:/s/ Mike Bush Date: 12-1-05

CERTIFICATION;

I have completed a review of the nutrient management and the specification's application and certify this practice has been applied.

Certification by:/s/_____ Date: _____

Job Title: _____

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

NUTRIENT MANAGEMENT SPECIFICATION SHEET
CODE 590

PLANNED HERD SIZE

Landowner/Operator: Mike Bush

Job Location: T 1S; R 9W; Sec. 34 & 2

County: Tillamook SWCD: Tillamook County Farm/Tract No. 53,477, 647

Field No. T-53 Fields 1,2,3,4 T-477 Fields 1,2,3,4,5,6,7 T-647 Fields 1,2

Prepared By: Pedersen Date: 10/2005

Purpose:

☐ To budget and supply nutrients for plant production.

☐ To properly utilize manure and organic by-products as a plant nutrient source.

☐ To minimize agricultural non-point source pollution of surface and ground water resources.

☐ To maintain or improve the physical, chemical and biological condition of soil.

Specifications:

☐ Manure is applied to the surface of permanent pastures in accordance with the enclosed Waste Utilization Conservation Practice Jobsheet.

☐ A target yield of 6 tons of dry matter per acre per yield is planned to utilize the nitrogen in the manure and/or commercial applied fertilizer.

☐ Manure and commercial fertilizer is applied in accordance with soil tests.

☐ Manure and/or commercial fertilizer is applied in split applications.

☐ Soil tests are taken at least every 5 years.

☐ Manure test are taken every 5 years. Samples will be collected from the equipment that applies the manure and wastewater to the fields.

☐ No more than 384 lbs. of nitrogen is applied per acre per year in accordance with the below Nutrient Distribution, Soil and forage tests will be used to justify the rates.

Manure Application Equipment to be used:

207-1,000 lb. animal units
2,300 Gallon Manure Tank Wagon
200 Bushel Manure Spreader

Manure Nutrient Distribution

Landowner: Geo Farms Inc

Date 08/2005

			Grazing		Solids			Liquids (Spreader)			Liquids (Pumping)			
Tract #	Field #	Grazing Cycles /YR	# N supplied by grazing/ field/yr	# of N supplied by grazing/ ac/yr	Loads of solid/yr	# of N per field/yr solids	# of N per from solids	Loads of Liquids/yr	# of N per field/yr liquid	# of N per ac/yr from liquid	Hours of Pumping	# of N per field/yr liquid	# of N per ac/yr from liquid	Total # of N per ac/yr
53	1	9	1553	**192**	13	961	**119**	42	571	**71**	0	0	**0**	381
53	2	9	1449	**196**	12	881	**119**	35	476	**64**	0	0	**0**	379
53	3	9	1242	**218**	8	560	**98**	25	333	**58**	0	0	**0**	375
53	4	18	0	**0**	22	1601	**232**	71	952	**138**	0	0	**0**	370
477	1	9	6108	**206**	45	3202	**108**	142	1904	**64**	0	0	**0**	378
647	2	0	0	**0**	2	171	**28**	6	84	**14**	0	0	**0**	43
647	3	0	0	**0**	2	117	**28**	4	58	**14**	0	0	**0**	43
647	4	0	0	**0**	1	63	**28**	2	31	**14**	0	0	**0**	43
647	5	0	0	**0**	1	45	**28**	2	23	**14**	0	0	**0**	43
647	6	0	0	**0**	1	54	**28**	2	27	**14**	0	0	**0**	43
647	7	0	0	**0**	0	31	**28**	1	15	**14**	0	0	**0**	43
647	1	0	0	**0**	2	160	**49**	11	143	**43**	0	0	**0**	92
647	2	0	0	**0**	2	160	**44**	11	143	**40**	0	0	**0**	84
	Totals		10353		112	8005		354	4759		0	0		

NOTE: For Farm Summary of all tracts you must highlight desired cell ranges go to Edit/Copy then click on the Summary Tab and click on Edit/Paste Special/ and under Paste select values/OK

Records are maintained of manure and or/or commmercial fertilizer applications.

Nutrient management plans are reviewed annually and adjustments are made as needed.

Manure is not applied within 35 feet of an open watercourse.

DESIGN APPROVAL:

Practice Code No.	Practice	Leand 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 II

Design approved by: /s/ Date: 12/01/05

Job Title: Basin Team Leader

CLIENTS ACKNOWLEGEMENT STATEMENT:

The client acknowledges that:

a. They have received a copy of this specification and under-stands the contents and requirements.

b. The following information must be provided 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 nutrient 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.

d. Maintain records of nutrient application as required by state and local regulations.

Accepted by:/s/ Mike Bush Date: 12-1-05

CERTIFICATION;

I have completed a review of the nutrient management and the specification's application and certify this practice has been applied.

Certification by:/s/_____ Date: _____

Job Title: _____

J.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

FORAGE HARVEST MANAGEMENT SPECIFICATION SHEET

CODE 511

Landowner/Operator: Mike Bush.

Job Location: T 1S R 9W; Sec. 34 & 2 T-53, 477, 647

Field No.: T-53 Field 4; T-477 Fields 3,4,5,6,7 T-647 Fields 1,2

Prepared By: Pedersen Date: 10/05

⇒ Purpose:

⇒ Improve or maintain the health and vigor of the forage stand

⇒ Maintain and improve water quality

⇒ Maintain or improve animal health and productivity.

⇒ Attain management efficiency to promote economic stability.

Specifications:

⇒ Hayland fields are managed to assure at least 6 tons of dry matter is produced per acre per year.

⇒ Hayland Fields are reestablished when forage yields fall below 4 tons of dry matter per acre per year.

⇒ Harvesting newly seeded fields are delayed until the grasses have at least 8 inches of growth and are firmly rooted.

⇒ Harvesting established stands are delayed until grasses have at least 6 inches of growth and ground is firm.

⇒ Grasses are not cut if the grass height is less than 2 inches.

⇒ Harvesting is not done when the fields are saturated or ponded.

⇒ Noxious weeds such as Tansy Ragwort and Canada Thistle are controlled in accordance with an Integrated Pesticide Management Plan.

⇒ Manure and commercial fertilizer applications are based on soil tests. Soil tests will be taken at least every 5 years. Nitrogen applications will not exceed 307 lbs. of nitrogen per acre per year unless soil tests and forage production justifies higher application rates.

⇒ Forage Tissue Tests will be taken at least twice during the growing season.

⇒ Manure is applied to hayland fields in accordance with the enclosed Waste Utilization Conservation Practice and Nutrient Management Job Sheets

⇒ Field will be grazed when the required amount of forage is harvested. Grazing will be in accordance with the enclosed Prescribed Grazing Specification Sheet Code 528A.

DESIGN APPROVAL:

This practice is classified as Job Class I

Design approved by: /s/ Roberta Palm Date: 12/1/05

Job Title: Basin Team Leader

CLIENTS ACKNOWLEGEMENT STATEMENT:

The client acknowledges that:

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

b. 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/ Mike Bush Date: 12-1-05

CERTIFICATION;

I have completed a review of the forage harvest management practice and the specification's application and certify this practice has been applied.

Certification by:/s/_____ Date: _____

Job Title: _____

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

PRESCRIBED GRAZING SPECIFICATION SHEET

CODE 528A

Landowner/Operator: Mike Bush

Job Location: T 2S; R 10W; Sec. 34

County: Tillamook SWCD Tillamook County Farm/Tract No. T-53 & 477

Field No.: T-53 Field 1,2,3,4 Tract 477 Field 1,2

Prepared By: Pedersen Date: 03/04

⇒ Purpose:

⇒ Improve or maintain the health and vigor of the forage stand

⇒ Maintain and improve water quality

⇒ Maintain or improve animal health and productivity.

⇒ Attain grazing and management efficiency to promote economic stability.

Specifications:

⇒ Pastures are managed to assure at least 6 tons of dry matter is produced per acre per year.

⇒ Pastures are reestablished when forage yields fall below 4 tons of dry matter per acre per year.

⇒ A rotational grazing system is used. There are 4 pasture units used in the rotation. The pasture units are stripped grazed. A 21 day re-growth period is used during the normal years. During low rainfall years, the re-growth period various between 30 to 35 days.

⇒ Noxious weeds such as Tansy Ragwort and Canada Thistle are controlled in accordance with an Integrated Pesticide Management Plan.

⇒ Pastures are clipped and dragged at least twice during the growing season.

⇒ Manure and commercial fertilizer applications are based on soil tests. Soil tests will be taken at least every 5 years. Nitrogen applications will not exceed 307 lbs. of nitrogen per acre per year unless soil tests and forage production justifies higher application rates.

⇒ Manure is applied to pastures in accordance with the enclosed Waste Utilization Conservation Practice and Nutrient Management Specification Sheets.

⇒ Spring grazing is delayed until the grasses have at least 6 inches of growth and the soil is firm.

⇒ Pastures are not grazed below 2 inches any time during the growing season.

⇒ Excess forage will be cut for silage. See Forage harvest Management Specification Code 511.

⇒ Livestock are removed from the pastures in the fall when the ground becomes wet and the grasses have at least 3 inches of growth going into the winter.

DESIGN APPROVAL:

This practice is classified as Job Class III

Design approved by: /s/ Robert A. Pedersen Date: 6/22/04

Job Title: Basin Team Leader

CLIENTS ACKNOWLEGEMENT STATEMENT:

The client acknowledges that:

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

b. 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/ Michael Bush Date: 6-22-04

CERTIFICATION;

I have completed a review of the prescribed grazing practice and the specification's application and certify this practice has been applied.

Certification by:/s/_____ Date: _____

Job Title: _____

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

FILTER STRIP SPECIFICATION SHEET
CODE 393

Landowner/Operator: Mike Bush

Job Location: T 2S; R 9W; Sec. 34

County: Tillamook SWCD Tillamook Farm/Tract No. T-53

Field No. 1

Prepared By: Pedersen Date 03/04

Purpose: To reduce manure runoff into an adjacent open watercourse and the resulting fecal and organic contamination in the watercourse.

Specifications:

⇒ A 35 foot grass filter strip will be maintained adjacent to all open water courses that flow through the farm.

⇒ No manure will be applied to the filter strip area.

⇒ Noxious weeds such as Tansy Ragwort and Canada Thistle are controlled in accordance with an Integrated Pesticide Management Plan.

⇒ Excessive accumulation of sediment and/or manure will be removed. The filter strip will be harrowed at least once each year prior to May 1st to shape and maintain at least a 1 % grade sloping away from the existing open water courses. Filter strip grade will be maintained to allow the runoff to occur along the entire length of the filter strip and not occur in only certain areas of the filter strip.

⇒ Depressions will be prevented from forming in the filter strip area where manure and sediment can be trapped.

⇒ Debris will not be allowed to accumulate in the filter strip.

⇒ Filter strips will be clipped, dragged, and or grazed at least twice during the growing season.

⇒ Grass will be at least 3 inches high by October 15th.

DESIGN APPROVAL

This practice is classified as Job Class II

Design approved by: Robert A. Pedersen Date: 6/22/04

Job Title: Basin Team Leader

Client Acknowledgement Statement:

The client acknowledges that:

a. They have received a copy of this specification and under-stands the contents and requirements.

b. 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/ Michael Bush Date: 6-22-04

Certification:

I have completed a review and checked out the filter strip practice specifications and certify that the practice has been applied in accordance with specifications.

Certified by: /s/_____ Date:_____

Job Title:_____

SOIL AND MANURE SAMPLING INSTRUCTIONS FOR ANIMAL WASTE MANAGEMENT SYSTEMS

SOIL SAMPLES Job Sheet 5

Spring Soil Samples

- Spring soil samples are to be collected the last 2 weeks of March or the first 2 weeks in April when soils are not saturated.
- Soil samples are to be collected on fields that have not received manure applications within the last 30 days.
- Collect several samples (about 10 one-fourth cup samples) of soils from just below the thin sod layer to a depth of 6 to 9 inches and add to bucket.
- Mix the samples in the bucket and remove about 1 cup from the mixture and place into a sample bag.
- The bag should be labeled with ;
  farm or operator name
  sample date
  field and tract (see NRCS plan map)
  sample depth (0 to 9 inches)
  soil type if determined
- Keep soil sample cool (small cooler with some ice) in the field until sample can be put in refrigerator or into freezer. Soil can be stored in refrigerator for up to 1 week or can be stored in a freezer for longer periods.
- Ship samples to lab (see shipping instructions below).

Fall Soil Samples

- Fall soil samples are to be collected during the last 2 weeks in September or the first 2 weeks in October on soils that are not saturated.
- Soil samples are to be collected on fields that have received normal manure applications during the current year.
- Sample soils and ship as outlined in the spring soil sample section above.

MANURE SAMPLES

Liquid Manure Samples

- Liquid manure samples should be sampled after agitating the storage facility for the first application made in the spring (March-April) and for the last application in the fall (September-October).
- Put a bucket in the path of the gun or carefully take bucket sample of liquid manure from the liquid manure tank wagon .
- Fill a sample bottle with some of the liquid manure from the bucket and keep cool while in the field. (you can put the sample in a small cooler with some ice)
- Label the sample with the farm or operator name, date, and liquid manure sample.
- Freeze the sample until ready to ship to the lab.

EM 8585 • Reprinted August 1997
$1.50

NUTRIENT MANAGEMENT
FOR DAIRY PRODUCTION

Manure application rates for forage production

J. Hart, E.S. Marx, and M. Gangwer

Most dairies can supply all the nitrogen, phosphorus, potassium, and other nutrients needed for forage production by applying manure to forage crops. As a manager, your goal is to match nutrient supply with crop needs by deciding when and how much manure to apply.

This publication explains how to estimate the amount of manure to apply for forage production. To do so, you need:

- A current manure analysis for your dairy (or see EM 8586, *Dairy Manure as a Fertilizer Source*)
- A list of forage crops to be produced
- A soil test from each field where manure will be applied

Too much manure results in excess plant uptake of nutrients such as potassium. High-potassium grass forages can lead to health problems, especially in dry cows. In addition, excess manure contributes to nutrients and microorganisms in runoff water and potential nutrient leaching to groundwater.

John Hart, Extension soil scientist; E.S. Marx, former research assistant in soil science; and Mike Gangwer, Extension agent, Marion County; Oregon State University.

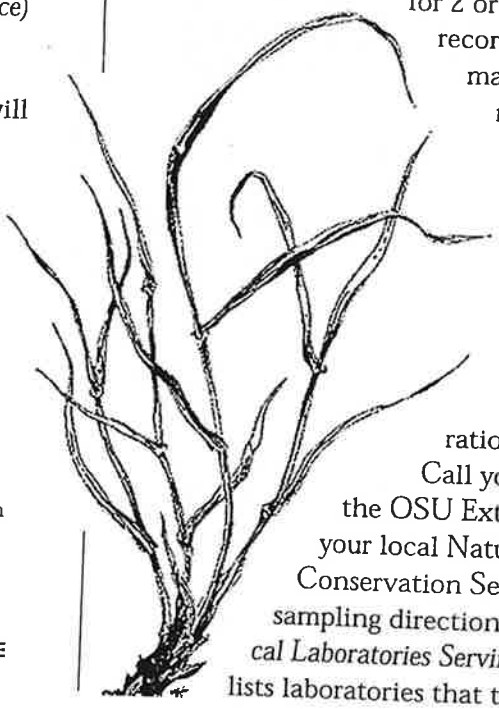
OREGON STATE UNIVERSITY EXTENSION SERVICE

The application rates in this publication are based on soil tests and growing conditions in western Oregon.

Manure analysis

Analyzing your manure is critical to determining the correct application rate. If you don't test your dairy's manure, you can only guess its nutrient value.

Manure testing in western Oregon has shown more variation among dairies than within one dairy. Develop a manure nutrient history for your dairy by testing manure two or three times a year for 2 or 3 years. These records will help you manage nutrient resources.



Also test manure when you expect a change in nutrient content; for example, when you make a large change in the ration.

Call your county office of the OSU Extension Service or your local Natural Resources Conservation Service office for sampling directions. *A List of Analytical Laboratories Serving Oregon* (FG 74) lists laboratories that test manure.

EC 1478 • Reprinted August 1999
$1.50

Soil Test Interpretation Guide

E.S. Marx, J. Hart, and R.G. Stevens

Regular soil testing is an important element in nutrient management. You can use soil tests as a diagnostic tool or to identify trends through time. To obtain meaningful test results, you must sample soil correctly, at the same time each year, and you must maintain records. For more information, see EC 628, *How to take a soil sample. . .and why (*see "For more information," page 7).

Soil testing laboratories use different test methods, which may influence results and sufficiency ranges. Therefore, the sufficiency ranges in this publication are accurate only for the test methods listed.

Soil tests used to evaluate fertility measure the soil nutrients that are expected to become plant-available. They do not measure total amounts of nutrients in the soil. Measurements of total nutrient content are not useful indicators of sufficiency for plant growth, because only a small portion of the nutrients are plant-available.

Adequate soil nutrient levels vary depending on plant species. Similarly, plant tolerance of excessive nutrient levels, nutrient imbalances, or less-than-optimum growing conditions varies. If excessive nutrient levels exist, review management to determine the cause.

Nutrient concentrations vary with soil depth. Depth of sampling, therefore, affects test results. To determine the proper sampling depth, you must consider the purpose of the soil test. To estimate nutrient availability for a crop prior to planting, sample soil to the depth where most root activity will occur. Shallow sampling sometimes is used to evaluate surface conditions in perennial crops where fertilizers have been applied to the soil surface. Deep sampling may be necessary to diagnose problems in orchards.

Soil test values do not vary greatly from year to year. Drastic changes in test values may indicate an unrepresentative soil sample or a laboratory error. When in doubt, submit a new sample or ask the lab to repeat the analysis.

This publication provides general guidelines for interpreting soil test results. Fertilizer guides for many individual crops are available from your county office of the OSU Extension Service or Washington State University Cooperative Extension, or from Extension and Experiment Station Communications, Oregon State University (see "For more information").

Nitrogen (N)

Plant-available nitrogen (nitrate and ammonium)

Plant-available forms of nitrogen are nitrate (NO_3^--N) and ammonium (NH_4^+-N). Soil concentrations of NO_3^--N and NH_4^+-N depend on biological activity, and therefore fluctuate with changes in conditions such as temperature and moisture. Nitrate is easily leached from the soil with high rainfall or excessive irrigation. Soil tests can determine NO_3^--N and NH_4^+-N concentrations at the time of sampling, but do not reflect future conditions.

When you collect samples for nitrogen testing, keep them cold, or dry them immediately to prevent NO_3^--N and NH_4^+-N concentrations from changing.

E.S. Marx, former research assistant in soil science, and John Hart, Extension soil scientist, Oregon State University;
and Bob Stevens, Extension soil scientist, Washington State University.

OREGON STATE UNIVERSITY EXTENSION SERVICE

EM 8832-E
May 2003
$2.00

Post-harvest Soil Nitrate Testing

for Manured Cropping Systems West of the Cascades

D.M. Sullivan and C.G. Cogger

Contents

What's in this publication?

This publication describes the use of post-harvest soil nitrate testing as a tool for assessment of nitrogen (N) management in manured cropping systems west of the Cascade Mountains in Oregon, Washington, and south coastal British Columbia.

The first section of this publication gives general information on the test and is designed for use by growers and dairy operators. This section gives a brief introduction to soil sampling, but does not provide all of the technical details. The focus is on how to use the post-harvest test to improve nutrient management. This section describes:

- What the post-harvest test measures
- How to collect soil samples
- Units used in soil nitrate testing
- How to interpret soil nitrate test results for grass and silage corn crops

In addition, background information explains the rationale for the test:

- How to use the post-harvest test as a management tool (page 3)
- Crop and soil response to excess plant-available N (page 4)

Dan M. Sullivan, Extension soil scientist, Oregon State University, and Craig G. Cogger, Extension soil scientist, Washington State University.

OREGON STATE UNIVERSITY
EXTENSION SERVICE

Solids

Solids are applied to pastures and crop ground ~~through the use of a 250 bushel, tractor~~ drawn, solid manure spreader. Solids are applied when cropping and weather conditions permit.

Operation & Maintenance

Solid Manure Storage Facility

Solid manure storage facility will be inspected annually. All broken trusses, rafters, poles, rusted roof sections, missing bolts, and broken gutters and/or downspouts will be repaired or replaced. Check for adequacy/function of drain away from downspouts. Facility will be available by November first for manure storage.

Below Ground Liquid Manure Storage Facility

Facility will be pumped out within the first two years following construction to check for structural damage. All damages will be corrected. Thereafter, it will be pumped out at least every five years to check for damages and/or removal of rocks, gravel, wire, and other debris. A one foot free board will be maintained to prevent spillage. Care shall be taken in pumping the tank out during periods of high water table. Failure to follow these guidelines in pumping the tank could result in catastrophic results. The tank liquid will not be pumped more than 3.5 feet lower than the surrounding ground water level. The tank lid will not be subjected to more than two 8,000 pound wheel loads.

Waste transfer Pipelines

Pipeline will be flushed regularly to prevent clogging. Any leaks or broken sections will be replaced or repaired.

Pump and Agitator

Pump will be operated and maintained according to manufacturer's manual. Liquids will be drained during freezing weather. Pump will be inspected periodically to prevent debris from wrapping around impellor. Agitator will be operated according and maintained in accordance with manufacturer's manual. All plumbing will be inspected annually. Broken lines will be replaced and/or repaired. Loose connections will be tightened.

Roof

Roof will be inspected and maintained to prevent contamination and any unnecessary additional water from entering liquid storage. Leaking or damaged sections shall be repaired in a timely manner.

information was provided. This plan was balanced on nitrogen and illustrated that all fields are nitrogen deficient and may require the use of commercial fertilizer applications at indicated plan rates.

L. Information supporting the implementation of any unusual waste handling or cropping system technology, or other considerations impacting the computations which are inconsistent with, or not included in, OAWIG or ORAWM and which impacts the nutrient balance. **No such other considerations are known to apply to this CAFO.**

Significant modifications that require department review and approval:

Concrete or steel tank for liquid manure storage (Issues: Volume and capacity; maintenance; agitation; treatment efficiency) *Information required for review:* Plan view drawing showing all CAFO facilities and appurtenant pipelines and pumping plants; dimensions and materials; operation and maintenance plan including schedule for removal of accumulated solids. **This Information is provided. Request that operator submit as-built drawings when construction has been finished.**

Recommendations

Adequate information has been provided in the AWMP and through conversations with the operator on May 2nd and USDA-NRCS' Bob Pederson for the AWMP to be considered complete. I recommend the AWMP and construction plans for the above ground concrete liquid storage tank, USDA-NRCS Standard drawing # AWM- 313-040 be approved. Further, I recommend the increased permitted animal numbers be approved in accordance with Mr. Bush's plan to add the increased animals on a two to five year schedule.

Oregon Department of Agriculture
ANIMAL INCREASE REQUEST
National Pollutant Discharge Elimination System
(NPDES PERMIT)

Statutory Authority
Oregon Revised Statutes (ORS) 468B.050 When permit required
ORS 468B.210 Maximum number of animals based on ability to contain, treat, hold and dispose of wastes as necessary to comply with all conditions of the permit.

A. General Information **Master Address #** 033414

Name or Business Name Mike Bush dba Gypo Jerseys

Facility Location Address 9375 Trask River Rd

City Tillamook State OR Zip Code 97141

B. Livestock Type: Circle the item that best represents your operation.

1. Beef Feedlot (Fattening) 2. Beef Cattle (Cow/calf) 3. Hogs 4. Sheep and Goats

5. Dairy Farm, Heifer Replacement Farm 6. Poultry/Broiler 7. Poultry/Eggs

7. Mink/Rabbits 8. Horses and Other Equine 9. Other

C. Current Permitted Animal Numbers: In the space below please describe your number of animals by herd composition or class.

250 = 150 m&d, 100 h&c

D. Current Permitted CAFO Designation: Circle one. See attached table.

Large Federal CAFO Medium Federal CAFO State CAFO

E. Proposed increase in permitted animal numbers: In the space below please describe your increased animal numbers by herd composition or class.

332 = 282 m&d, 50 calves

F. New CAFO Designation based on increased animal numbers. Circle one. See attached table.

Large Federal CAFO Medium Federal CAFO State CAFO

G. Certification:
I understand that the permit requires the preparation of an animal waste management plan for the facility. I agree to prepare and implement an animal waste management plan in accordance with the requirements and timelines specified in the permit.

Signature (operator or owner)	Date	Print Name
Michael W Bush	8-3-06	Michael W Bush
Signature (operator or owner	Date	Print Name

Definition of Legally Authorized Representative:
See 40 CFR 122.22 for more detail. Also, please also provide the information requested in brackets *[ ]*

- **Corporation** — president, secretary, treasurer, vice-president, or any person who performs principal business functions; or a manager of one or more facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million that is authorized in accordance to corporate procedure to sign such documents
- **Partnership** — General partner *[list of general partners, their addresses and telephone numbers]*
- **Sole Proprietorship** — Owner(s) *[each owner must sign the application]*
- **City, County, State, Federal, or other Public Facility** — Principal executive officer or ranking elected official
- **Limited Liability Company** — Member *[articles of organization]*
- **Trusts** — Acting trustee *[list of trustees, their addresses and telephone numbers]*

SEND THIS FORM TO THE OREGON DEPARTMENT OF AGRICULTURE, 635 Capitol Street NE, Salem, OR 97310

ANIMAL INCREASE REQUEST INSTRUCTIONS

A. GENERAL INFORMATION:

1. Enter the legal name.
2. Enter the common name of this facility or operation if different than the legal name.
3. Enter the facility's physical address (physical location, INCLUDING mailing address), including city, state, and zip code and telephone number.

B. CIRCLE THE APPROPRIATE LIVESTOCK TYPE OF YOUR OPERATION.

C. Self-explanatory
D. Self-explanatory
E. Describe your proposed animal increase by herd composition of class.
F. Self-explanatory
G Signature

CAFO Designation by Size Threshold (used for items D and F.)

Animal sector	Large Federal CAFO	Medium Federal CAFO	State CAFO
Beef feedlot or Cow/calf pairs, heifer replacement facility	1,000 or more	300-999	Less than 300
Mature dairy cattle	700 or more	200-699	Less than 200
Swine (weighing over 55 pounds	2,500 or more	750-2,499	Less than750
Swine (weighing less than 55 pounds)	10,000 or more	3,000-9,999	Less than 3,000
Horses or other Equine	500 or more	150-499	Less than 150
Sheep or lambs	10,000 or more	3,000-9,999	Less than 3,000
Poultry laying hens or broilers (liquid manure handling system)	30,000 or more	9,000-29,999	Less than 9,000
Chicken other than laying hens (other than a liquid manure handling system)	125,000 or more	37,000-124,999	Less than 37,500
Laying hens (other than a liquid manure handling system)	82,000 or more	25,000-81,999	Less than 25,000