NM-CAFO PLANNING the Job Ahead

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Extension Agronomist

Sandy Spon

NMED - SWQB

Typical CAFO Problems

- Ponds not lined
- Ponds not large enough
- Existing Plan not clear
- Not enough land to apply on
- Poor commitment to apply manure
- Over application of manure
- No meters
- Poor separation of solids

Typical CAFO Problems

- Poor distribution system
- Applying commercial fertilizer on top of manure
- Poor irrigation water management
- Poor record keeping skills
- Not managing pond levels to match crop growth
- They do not value manure as a plant nutrient resource
- Manure application w/o soil testing

Planning Issue System Components

- Collection
- Transport
- Storage
  - Separation to pond
- Distribution

Separation

- Three cell pond systems require 60 day storage is an issue. The last pond must store 60 days! OR Design plumbing to empting all cells.
- Screen separators are needed ahead of one pond systems.
- Single pond lagoon systems need screens or filters if pumped to a circle with proper nozzling.
- W/O proper separation circles do not apply uniformly. (they use large gate valves hung on the systems)

- Gate valves with poor water distribution.

Typical Practices for a RMS (CNMP)

- **Waste Storage Facility**- Ponds and separators
- **Conservation Cropping System**-Find a rotation that uses most the growing degree days. Usually a high water use rotation. Alfalfa or Corn Silage-Winter Wheat Silage are good
- **Residue Mgt, seasonal**-Sometimes use on sandy soils. This is mostly tillage management.

Typical Practices for a RMS cont.

- **IWM**-This is extremely important to get crops to remove as many nutrients as possible. Secondly it is important not exceed the WHC of the soil
- **Nutrient Mgt.**-This is the corner stone practice for the CNMP. Matching the manure application to the nutrient requirements of the crop.

Typical Practices for a RMS cont.

- **Pest Mgt**-Most systems have some pests to manage. Corn has mite and corn borer problems. Alfalfa can have downy mildew, alfalfa weevil, and clover leaf weevil problems.
- **Manure Transfer**-Most systems export the solids off the dairy site to adjacent farms. They also use structures to move the liquid from place to place, and to separate solids.
- **Sprinkler Systems**-Many dairies do not have good distribution systems.

Typical Practices for a RMS cont.

- **Pipelines**-Plastic low or high head, and steel.
- **Pumping Plant for Water Control**-Move lagoon water to sprinkler or surface irrigation ditches
- **Land Leveling**-Surface systems need to be efficient.
- **Pond Sealing or Lining (number), Flexible Membrane**-Most ponds need to have linings added.

How Long Does a CNMP Take to Develop?

- We have written about 13 CNMPs to date, and have about 200 that could be written.
- We think the basic plan takes about 40 hrs to develop. This does not include a soil sampling, detailed site survey or any engineering time.
- It will determine if they have enough land to spread on and if the current storage facility is large enough.

Planning Tools

- NMSU Fertilizer Spreadsheet (Nutrient Mgt 590)
- Phosphorus Index
- Irrigation Leaching Index and Salt Mgt Tool
- Wind Erosion Equation
- Soil Conditioning Index
- Window Pesticide Screening Tool
- Pond Sizing Software

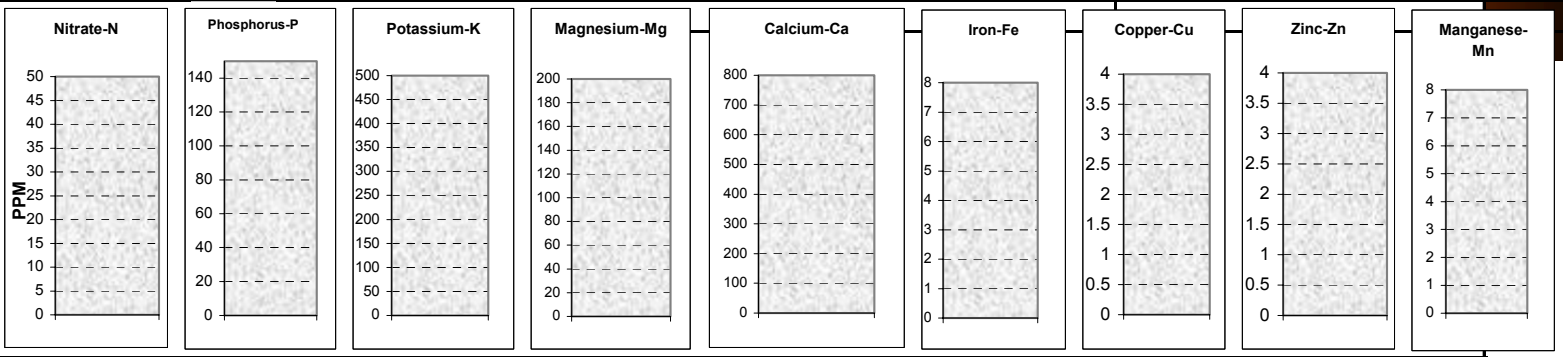
NMSU Fertilizer Spreadsheet (Nutrient Mgt 590)

N.M.S.U.-Soil Test Interpretation Report vs 3.95- (590 Nutrient Management Jobsheet)

County: Cibola & Valencia
Field ID:
Crop Rotation:
Client Name:
Comments from the form:
Acres:
Irr. Water (acin/ac):
Address:
Zip Code: 87026 3/16/2004
Depth of Sample (in): 4
Sodium Adsorb. Ratio:
ESP:
Phone:

Note: E.C.-Electrical Conductivity or Saltiness, **O.M.**-Organic Matter, and **ESP**-Exchangeable Sodium %.

Samp. ID (#)	pH (#)	E.C. (mmhos/cm)	Soil Texture (class)	O. M. (%)	NO_3-N (ppm)	P (ppm)	K (ppm)	Mg (meq/l)	Ca (meq/l)	Na (meq/l)	Cu (ppm)	Zn (ppm)	Mn (ppm)	Fe (ppm)
			Clay Loam											
Crop to grow:	Chile, green				lbs/ac	P_2O_5 (lbs/ac)	K_2O (lbs/ac)	lbs/ac	lbs/ac	lbs/ac	lbs/ac	lbs/ac	lbs/ac	lbs/ac
Yield Goal:		t/ac			0	0	0	0	0	0	0	0	0	0



Nutrient Recommendation:	N lbs/ac	P_2O_5 lbs/ac	K_2O lbs/ac	Mg lbs/ac	Ca lbs/ac	Fe lbs/ac	Cu lbs/ac	Zn lbs/ac	Mn lbs/ac
Recommended Nutrient Rate:	0	0	0	0	0	0	0	0	0
Organic Nutrient Source (Liquid or Solid Manure):	0	0	0						
Irrigation Water Credits (ppm NO_3-N):	0								
Other Nutrient Sources (Standing Legume Crop.):									
Supplemental Nutrient Rate:	0	0	0	0	0	0	0	0	0
Available Nutrients > Crop Requirements:	NO	NO	NO	NO	NO	NO	NO	NO	NO

General Note: No Nutrients Needed.

Specific Notes:

EC Note:

Gypsum Recom: lbs/ac or lbs/1000 ft^2

Robert P. Flynn, Ph.D.
Agronomy and Soils
cc:Cibola & Valencia County Extension Agent

Suggested Fertilizer Blend		0 lbs/ac		0.0 lbs Total Needed
Total Blend (lbs/ac):	0	0 lbs/ac		0.0 lbs Total Needed
Blend Cost ($/ac):	$0.00	0 lbs/ac		0.0 lbs Total Needed

Client Signature: **Planner Signature:** **0.0 Tt Blend (lbs)**

Fertilizer Cost Note: *Default costs are from NASS 10yr ave. ending 2001. Actual cost need local material cost and application charges. (See fert cost tab).*

Phosphorus Index

PHOSPHORUS INDEX WORKSHEET for New Mexico						
Client Name:	Class Exercise		Field(s):	2	Date:	9/8/2000
Planner:	mas		Location:	Roswell	Crop:	Corn Sil
Soil Permeability (in/hr):	0.2		Slope (%):	0.1	Planned/Exist.:	Existing
Site Characteristic	**Place an X in the appropriate box for each of the Site Characteristic listed below.**					**Sub Total**
Soil Test P Level	Very Low <8 ppm	Low 8-15 ppm	Moderate >15-23 ppm	High >23-30 ppm	Very High >30 ppm	
					x	8
Phosphorus (P_2O_5) Application Rate	None Applied	<30 lbs/ac P_2O_5	30-90 lbs/ac P_2O_5	>90-150 lbs/ac P_2O_5	>150 lbs/ac P_2O_5	
					x	8

Phosphorus Index

PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	Class Exercise	Field(s):	2	Date:	9/8/2000
Planner:	mas	Location:	Roswell	Crop:	Corn Sil
Soil Permeability (in/hr):	0.2	Slope (%):	0.1	Planned/Exist.:	Existing

Site Characteristic	Place an X in the appropriate box for each of the Site Characteristic listed below.					Sub Total
Soil Test P Level	Very Low <8 ppm	Low 8-15 ppm	Moderate >15-23 ppm	High >23-30 ppm	Very High >30 ppm	
					x	8
Phosphorus (P_2O_5) Application Rate	None Applied	<30 lbs/ac P_2O_5	30-90 lbs/ac P_2O_5	>90-150 lbs/ac P_2O_5	>150 lbs/ac P_2O_5	
					x	8
Organic Phosphorus Source Application Method	None Applied	Injected Deeper than 2 inches	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting **or** Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
			x			2
Phosphorus Fertilizer Application Method	None Applied	Placed with Planter Deeper than 2 in.	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting **or** Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
	x					0
Proximity of Nearest Field Edge to Named Stream or Lake	Very Low >1000 feet	Low >500-1000 feet	Medium >200-500 feet	High 30-200 feet	Very High <30 feet	
				x		6
Soil Erosion (wind & water)	Very Low <1 t/ac	Low 1-3 t/ac	Medium >3-5 t/ac	High >5-15 t/ac	Very High >15 t/ac	
		x				1.5
Runoff Class (Runoff Class Table 2)	Very Low or Negligible	Low	Medium	High	Very High	
		x				1.5
Irrigation Erosion (See QS note)	Not Irrigated or No Furrow Irrigation	Tailwater Recovery **or** QS<6 for very erodible soils **or** QS<10 for resistant soils	QS>10 for erosion resistant soils	QS>10 for erodible soils	QS>6 for very erodible soils	
	x					0
Grazing Management	Not Grazed	Graze Crop Residues	Pasture <30% Dry Matter as Supplemental Feed	Pasture 30 to 80% Dry Matter as Supplemental Feed	Pasture 80 to 100% Dry Matter as Supplemental Feed	
	x					0
Vegetative Buffer	> 100 ft wide	>65-100 ft wide	20-65 feet wide	< 20 feet wide	No Buffer	
					x	12

P Hazard Class: Very High **Total Index Points:** 39.0

Phosphorus Application Classification: P Based (at crop removal)

Notes:

This evaluation has a Very High P hazard class and the nutrient application will be based on the P crop uptake.

Comments:

Suggest that no manure be applied to these fields, because of the high water table of the soils and the surface drain

Irrigation Leaching Index & Salt Mgt

Irrigated Leaching Index and Leaching Requirements for Salt Management

Client: | **Field No.:** | **Acres:** | **Date:** 3/16/04

Impaired water body or know water contaminated area:

Crop Grown: Alfalfa; ABQ & Los Lunas | **Climate Location:** Bernalillo, ALBUQUERQUE WSF | **EC water:** | **ECe Crop:** 3.4

Irrigation Type: ☐ Surface Irrigation ☑ Sprinkler Irrigation

Leaching Percent Increase for Surface:

Leaching Percent Increase for Sprinkler: 0%

	Jan (in/mo)	Feb (in/mo)	Mar (in/mo)	Apr (in/mo)	May (in/mo)	Jun (in/mo)	Jul (in/mo)	Aug (in/mo)	Sep (in/mo)	Oct (in/mo)	Nov (in/mo)	Dec (in/mo)
Rainfall:	0.4	0.5	0.5	0.5	0.5	0.6	1.4	1.6	1.0	0.9	0.4	0.5
Less 0.5":	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Effective Precip.:	0.0	0.0	0.0	0.0	0.0	0.1	0.9	1.1	0.5	0.4	0.0	0.0
CU by Month:	0	0	0	0	5.7	8.7	9.6	8.4	5.4	3	0	0
Salt Leaching Requirement:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Irrigation Requirement:	0.0	0.0	0.0	0.0	5.7	8.6	8.7	7.3	4.9	2.6	0.0	0.0
Actual Net Application:												
Excess Leaching:	**0.0**	**0.0**	**0.0**	**0.0**	**(5.7)**	**(8.6)**	**(8.7)**	**(7.3)**	**(4.9)**	**(2.6)**	**0.0**	**0.0**
LI Statement:	**OK**	**OK**	**OK**	**OK**	**Not Meeting CU**	**Not Meeting CU**	**Not Meeting CU**	**Not Meeting CU**	**Not Meeting CU**	**Not Meeting CU**	**OK**	**OK**

Leaching Index (LI): The LI statment of "**Not Meeting CU**", means CU plus the leaching requirement is not met, and that crop stress may reduce yield and salts may build up. The LI statement of "**OK**" means that there is 0 to 0.75/in/mo of excess irrigation. A LI statement of "**Potent. for Leach**" means that there is excess leaching (> 0.75/in/mo) and a potential for ground water pollution exists. Improved irrigation water mangement (IWM) must be applied, and additional conservation practices should be considered. The statement "**Do Not Exceed TWHC**" means that water has been applied when there is no CU of a crop. Do not apply more water than the soil can hold.

Wind Erosion Equation

NRCS - WEQ INPUT WORKSHEET

Version 8.06 12/10/2003

Producer:	70B NM1	**Climate Data Station:**	NM, CLOVIS	**Tract:**		**Field:**	
Planner:	mas	**Field Width** (Ft.):	600	**Tillage Direct** (NS/EW):	NS	**Irrigated?** (y or n):	Y
Crop Rot:	Alf5yr-WW/Sorg Forage	**Field Direction** (NS/EW):	NS	**Length/Width Ratio:**	2.0	**Wind Erodibility Group:**	4 (1-7)
Location:	SE Area	**Adjusted Soil "I":**	56	**Site "C" Value:**	150		

Average Annual Wind Erosion (t/ac):	2.0	**Yrs in Rotation:**	6.0	**Sum Period Erosion:**	11.9 (tons/ac)

Crop and Operation Management Records/Residue Calculations (green and dry)

Operation Date (date)	Crop (name)	Operation (name)	No. of Irr./Period (#)	Flat Res. (%)	Yield Adjustment (%)	Yield (units/ac)	Ridge Height (in)	Ridge Spacing (in)	Est. Res Retention (fact)	Est. Res. Dry Matter (lb/ac)	Est. Ground Cover (%)	SGe Dry Residue (lb/ac)	Green Dry Matter (lb/ac)	SGe Green Growth (lb/ac)	Random Roughness (in)
1/1/1999	-	**Start Rotation**		40%	-	- -	0	0	0.25	2000	67	5476	0	0	0.30
3/15/1999	Alfalfa, fall	Over winter, non-fragile		0%			0	0	0.80	1600	59	4412	0	0	0.30
4/1/1999	Alfalfa 15	Grow	10	0%			0	0	1.00	1600		4407	50	94	0.30
8/15/1999	Alfalfa, fall	Harvest		0%		6 ton/ac	0	0	1.00	2000	67	5476	0	0	0.30
9/1/1999	Alfalfa, fall	Subsoiler, 30-36 inch spacing		40%			4	30	0.60	1200	50	2743	0	0	1.00
9/5/1999	Alfalfa, fall	Plow, moldboard, conventional		100%			1	18	0.02	24	2	83	0	0	1.00
9/8/1999	Alfalfa, fall	Chisel-disk-harrow-packer (comb) N		100%			1	30	0.45	11	1	44	0	0	0.50
9/9/1999	Wheat, winter, yield irr	Drill or Air seeder, DD opener N		100%			1	8	0.85	9	1	39	0	0	0.30
9/24/1999	Wheat, winter, irr, early 015	Grow	1	100%			1	8	1.00	9		27	40	134	0.30
10/9/1999	Wheat, winter, irr, early 030	Grow	1	100%			1	8	1.00	9		22	120	328	0.30
10/24/1999	Wheat, winter, irr, early 045	Grow	1	100%			1	8	1.00	9		20	200	494	0.30
11/8/1999	Wheat, winter, irr, early 060	Grow		100%			1	8	1.00	9		19	250	591	0.30
11/23/1999	Wheat, winter, irr, early 075	Grow		100%			1	8	1.00	9		19	250	591	0.30
1/22/2000	Wheat, winter, irr, early 135	Grow		100%			1	8	1.00	9		18	325	626	0.30
2/6/2000	Wheat, winter, irr, early 150	Grow		100%			1	8	1.00	9		18	400	859	0.30
2/21/2000	Wheat, winter, irr, early 165	Grow		100%			1	8	1.00	9		16	650	1263	0.30
3/7/2000	Wheat, winter, irr, early 180	Grow	1	100%			1	8	1.00	9		15	1000	1778	0.30
3/22/2000	Wheat, winter, irr, early 195	Grow	1	100%			1	8	1.00	9		13	1900	2958	0.30
4/6/2000	Wheat, winter, irr, early 210	Grow	1	100%			1	8	1.00	9		12	3000	4247	0.30
4/21/2000	Wheat, winter, irr, early 225	Grow	1	100%			1	8	1.00	9		11	4000	5333	0.30
5/6/2000	Wheat, winter, irr, early 240	Grow		100%			1	8	1.00	9		11	5000	6364	0.30
5/7/2000	Spring Grain, forage, irr	Harvest		0%	-30%	4200 lbs/ac	1	8	1.00	840	41	3029	0	0	0.30
5/10/2000	Spring Grain, forage, irr	Plow, moldboard, conventional		100%			1	18	0.02	17	1	62	0	0	1.00
5/12/2000	Spring Grain, forage, irr	Chisel-disk-harrow-packer (comb) N		100%			1	30	0.45	8	1	33	0	0	0.50
5/16/2000	Sorghum, forage, irr	Drill or Air seeder, DD opener N		100%			1	8	0.85	6	1	29	0	0	0.30
5/31/2000	Sorghum 15	Grow	1	100%			1	8	1.00	6		24	10	61	0.30
6/15/2000	Sorghum 30	Grow	1	100%			1	8	1.00	6		13	305	1000	0.30

Soil Conditioning Index

To clear all entries, press Ctrl-Q.
For tips and help, hold your cursor over any cell with a red triangle in the corner.

oil Conditioning Index Worksheet

Version 25 June 10, 2003

Location: Staff:

Tract: Field:

A. Site Information

Location code: City:

Soil: SOM Modifier

aintenance Amount: lbs./ac expressed as a "Residue Equivalent Value" (REV)

B. Management Information

nber of Yrs in Rotation: Crop Rotation:

Tillage System:

onservation Practices:

C. Organic Material (OM)

Be sure to select a city, or the OM table cannot complete calculations.

Crop #	Crop	Yield per acre	Harv Unit/Ac	Wt Harv Unit (lbs)	Res: Yield Ratio	Res Prod	Root Mass Adjust	Biomass Prod.	Biomass Added (+) or Removed (-) lbs/ac dry matter	Total Biomass	Crop Group	REV Conv	REV lbs/ac

TOTAL REV:	
NO. YEARS IN ROT.:	
AVE. ANNUAL (RP):	
MAINT. AMNT. (MA):	
SUBFACTOR (OM):	

Windows Pesticide Screening Tool

WIN-PST - [IRPTVIEW.WFM: WIN-PST Soil/Pesticide Interaction Report Viewer]

File Edit Form Window Help

.\REPORTS\INTERACT.TXT

```
COOPERATOR: USDA-NRCS Cooperator data: Name, address, etc.
TRACT: Number    FIELD: Identifier

                                        WIN-PST SOIL / PESTICIDE INTERACTION
                                      LOSS POTENTIAL and HAZARD RATINGS REPORT
==================================================================================================

Soils Data Table: SOIL_NM  Sort Order: MUSYM
Pesticide Data Table Sort Order: NAME


                                                                  SOILS

                                 ReA:   Reakor L 85%
                                 HYDRO: B
PESTICIDES                              CHAVES COUNTY,
                                        SOUTHERN PART, NEW
                                        MEXICO: NM666
==============================================================
PYROCIDE INTERMEDIATE 6982  REG_NO: 00102101095
     ____________________________________________________________
     6.20% Propoxur
                                 Loss            Human  Fish  |
                                 Potential       Hazard Hazard|
                                 ----------------------------|
              Leaching   (ILP):  H                L      L   |
          Solution Runoff (ISRP): I                L      L   |
          Adsorbed Runoff (IARP): L                       L   |
     ____________________________________________________________
     0.98% N-Octyl bicycloheptene dicarboximide
          Missing Data.
     ____________________________________________________________
     0.59% Piperonyl butoxide
          Missing Data.
     ____________________________________________________________
     0.30% Pyrethrins
                                 Loss            Human  Fish  |
                                 Potential       Hazard Hazard|
                                 ----------------------------|
              Leaching   (ILP):  V                V      L   |
```

Print (Tip: Print in PORTRAIT orientation.)

Choose Printer

Close

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start Inbox - Microsoft Out... CAFO PLANNING.ppt WIN-PST - [IRPTVIE... 2:30 PM

Pond Sizing Software

NM-POND SIZE DETERMINATION

USDA Natural Resources Conservation Service — Version 1.4 (3/15/ — Date: 3/16/2004

Dairy Name:	0	Dairy Manager:	0
Location:	0	Planner:	0
Pond Name/Num.:	0	Type of Pond:	60-day Storage

Pond designed for: Milk Center/Flush: ☑ Milk Center/Flush **and** Storm Lot Runoff: ☐

POND STORAGE CAPACITY

Evaporation Surface Area:	**4.6 ac.**
POND Volume required (Evaporative Pond or 60 day Storage Pond):	**-1.8 ac. ft.**
STORM Volume (25 year-24 hour Rainfall over Pond):	**2.3 ac. ft.**
STORM Volume (25 year-24 hrs Storm Runoff from Lot):	**0 ac. ft.**
Total Storage Required:	**0.5 ac. ft.**

WASTE WATER STORAGE REQUIREMENT

Required Freeboard Depth (ft)	2.0		
POND Length (at evaporation surface) (ft)	100	448	(ft) Estimated Length
SIDE SLOPE (inside) (ft:ft)	3.0	:1	GWQB requires ≥ 3:1
POND Width (at evaporation surface) (ft)	2,004	448	(ft) Estimated Width
POND Depth (for required storage) (ft)	1.0		Adjust POND Depth until pond vol balances.
POND Volume (for required storage) (ac-ft)	4.6		**The POND Vol. is OK or Depth may be decreased.**

STORAGE OF 25 year-24 hour STORM

SURFACE AREA (at top of required storage) (ac)	4.7	
STORM Length (at top of required storage) (ft)	103	
STORM Width (at top of required storage) (ft)	2,007	
STORM Depth (for storage of 25 yr storm) (ft)	0.8	2.3 ac-ft = Required storage for 25 yr storm
STORM Volume (for 25 yr storm storage) (ac-ft)	3.9	**The STORM Vol. is OK, or depth can be decreased.**

FINAL POND DIMENSIONS

TOTAL Pond Depth (ft)	3.8	Includes freeboard.	
TOTAL Pond Length (ft)	123		
TOTAL Pond Width (ft)	2027		
TOTAL Surface Area (ac)	5.7		
TOTAL Pond Volume (ac ft)	19.3		231.2 ac. In.
(gal)	6,279,252		839,536 **cu. ft.**
(cu. yds.)	31,093.9		

LOCATION OF BOTTOM OF STAFF GAUGE

Required 21 Day Storage (ac-ft)	-0.6	
Depth of 21-day storage (ft)	0.7	Increment 21-day depth until volumes balance.
Calculated 21-day Storage (ac-ft)	3.3	**Depth is OK, or depth may be decreased.**
Set bottom of staff gauge	0.3	**feet above the bottom of the pond.**

Website - http://www.nm.nrcs.usda.gov/technical/water/nmafo.html

Water - Animal Feeding Operations | New Mexico NRCS - Microsoft Internet Explorer

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NRCS Natural Resources Conservation Service
New Mexico

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New Mexico
Enter Keywords GO

Technical Resources
- Ecological Sites
- eFOTG
- Field Office Technical Guide
- NRI
- Snow Survey
- Technical Notes
- Water Quality

- Find a Service Center
- West Region

New Mexico Animal Feeding Operations

Documents with the following icon require Microsoft Word or Microsoft Excel.

- NM Comprehensive Nutrient Management Technical Guidance(8,224KB)
- CNMP Suggested Format (39KB)
- CNMP Certification Requirements (84KB)

Planning Software

- Phosphorus Assessment Tool Worksheet (46KB)
- NMSU Soil Test Interpretation Report Software (402KB) and Instructions (134KB)
- Irrigated Leaching Index and Salt Management Tool Worksheet (142KB)
- Farm Irrigation Rating System (FIRS) Worksheet (681KB)
- NM Dairy Pond Sizing Software (672KB)

Comprehensive Nutrient management Plan (CNMP) Sample Plan

Internet

start | Inbox - Microsoft Out... | CAFO PLANNING.ppt | Microsoft Excel | Water - Animal Feedi... | 3:16 PM

Website - http://www.nm.nrcs.usda.gov/technical/water/nmafo.html

Water - Animal Feeding Operations | New Mexico NRCS - Microsoft Internet Explorer

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Address http://www.nm.nrcs.usda.gov/technical/water/nmafo.html Go Links

Comprehensive Nutrient management Plan (CNMP) Sample Plan

- Suggested Format of CNMP (37KB)
- Format by Section (39KB)
- Checklist for CNMP (39KB)
- Cover Sheet (19KB)
- Example of Cover Sheet Feedlot (306KB)
- Facility Information (23KB)
- Example of Facility Information (23KB)
- Emergency Action Plan and Safety Precautions (75KB)
- Environmental Assessment & Resource Inventory Checklist (1797KB)
- Inventory Data Sheet (148KB)
- Plan Summary Example (42KB)
- Conservation Plan Example (478KB)
- Operation and Maintenance (51KB)

Links to Other Resources:

Livestock and Poultry Environmental Stewardship

USGS AFO Conference Proceedings

Internet

start Inbox - Microsoft Out... CAFO PLANNING.ppt Water - Animal Feedi... 3:17 PM

Cultural Resources

106Form.doc - Microsoft Word

NMCRIS NO: 0 NRCS REPORT NO: (optional) 0

NMCRIS NO: ____ **NRCS REPORT NO:** (optional) ____

Name of Project (landowner/project/location): ____

Form Completed by: ____ **Form Date:** ____
Position: ____

NRCS Field Office: ____
Address: ____
City/State: ____

Practice Code: ____

Description of Practice (required): ____

Land Use: ____ **Other:** ____

☐ **Does exceed the depth & extent of previous cultivation/disturbance** ☐ **Does not exceed the depth & extent of previous cultivation/disturbance**

Undertaking Subject to SHPO Consultation: ☐ **Yes** (complete rest of form) ☐ **No** (file form)

PART B:

EXTENT AND LOCATION OF PROJECT:

Area of effect **(No. of acres)**; ____ **No. of Acres Surveyed** ____
(includes all areas of disturbance such as widening of any access roads, equipment location, etc).

Land Status (acres) ☐ **Private** ____ ☐ **Federal** ____ ☐ **Tribal** ____
☐ **State** ____

Page 3 Sec 1 3/6 At 0.6" Ln 1 Col 1 REC TRK EXT OVR

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A1

NRCS
Natural Resources Conservation Service

Environmental Assessment
and Resource Inventory Checklist

NM-ENV-1 (10/20/2002)

Client/Operating Unit:		Tract:		Farm No.:		Field No.:	
Farm/Ranch Location:		County:		SWCS/HU code:		Date:	3/16/2004
Program:		Contract Item#:		Planned Installation Date:			

Client's Objective:

Purpose and Need (Why) of Action:

Description of Action (What will be done?)

Page 1

Purpose: This form provides summary documentation for environmental evaluation of benchmark conditions and planned actions.

Environmental Assessment: (EA) NRCS begins its National Environmental Policy Act (NEPA) responsibility by documenting an EA using the "Environmental Assessment and Resource Inventory Checklist". An EA will be conducted during all NRCS assisted conservation planning activities. The EA documents the analysis of SWAPA+H resource concerns and an evaluation of effects on special environmental policies and regulations. The EA uses and depends upon the interdisciplinary planning approach and will assist, early on, with the development of alternatives that will avoid, minimize, or mitigate the effects of adverse impacts. The EA indicates whether the proposed action may have a significant effect on the quality of the human environment and if further analysis is needed.

Instructions: Identify if quality criteria for each and every resource concern are met for Benchmark conditions by placing a mark in the appropriate block. Resource Concerns that do not meet quality criteria must be included in plans for treatment. Use N/A only if that resource condition does not exist on the property. Following the selection of the preferred alternative place, a mark in the appropriate block in the Planned column indicating that Quality Criteria are met when the plan is implemented. Alternatives evaluated and selected, and documentation of Special Environmental

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ENV-1

ENV-1 cont

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A1 CROP

	A	B	C	D	E	F	G	H	I	J
1						MEETS QUALITY CRITERIA				
2	CROP					Benchmark			Planned	
3	RESOURCE CONCERNS	Definition	Indicator & Target Value	Assessment Tools	NOTES	N/A	NO	YES	NO	YES
4	**SOIL EROSION**									
5	Sheet & Rill					☐	☐	☐	☐	☐
6	Wind Erosion					☐	☐	☐	☐	☐
7	Concentrated Flow Erosion					☐	☐	☐	☐	☐
8	Classic Gully Erosion					☐	☐	☐	☐	☐
9	Streambank Erosion					☐	☐	☐	☐	☐
10	Irrigation Induced					☐	☐	☐	☐	☐
11	Soil Mass Movement					☐	☐	☐	☐	☐
12	Roadbanks, Construction sites & Scour Areas					☐	☐	☐	☐	☐
13	**SOIL CONDITION**									
14	Soil Tilth, Crusting, Infiltration, Organic Matter					☐	☐	☐	☐	☐
15	Soil Compaction					☐	☐	☐	☐	☐
16	**SOIL CONDITION – CONTAMINATION**									
17	Excess Chemical Elements; Salts, Boron, & Heavy Metals					☐	☐	☐	☐	☐
18	Excess Organic Nutrients									
19	Excess Pesticides					☐	☐	☐	☐	☐
20	**SOIL CONDITION - DEPOSITION**									
21	Onsite and Offsite Damage					☐	☐	☐	☐	☐
22	Onsite and Offsite Safety					☐	☐	☐	☐	☐
23	**WATER QUANTITY**									
24	Seeps					☐	☐	☐	☐	☐
25	Ponding/Flooding					☐	☐	☐	☐	☐
26	**WATER QUANTITY SURSURFACE WATER**									

Indicator: The **Wind Erosion Equation (WEQ),** average annual wind erosion rate (tons/acre) will be used to establish the rate.

Target:
The combined rate of water erosion (irrigation induced, rill, interrill, and ephemeral) and wind erosion shall not exceed T (annual soil loss tolerance) for a soil map unit of a manageable size (=or>10% winthin a management unit).

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A1 CROP

ENV-1 cont

	A	B	C	D	E	F	G	H	I	J
145	5. Degree of public interest/controversy:				High ☐ Medium ☐ Low ☐					
146								Yes	No	
147	6. Conservation Compliance requirements of the Food Security Act (Wetlands, HEL, Sodbuster.) are being met.							☐	☐	
148		NA ☐ *(See Food Security Act Manual for requirements.)*								
149	This Environmental Assessment documents the potential effects and impacts on the human environment and has aided me to reach the following conclusion on the selected alternative:									
150	☐	(A) This evaluation indicates further analysis is needed. *Action: Inform your supervisor and request the appropriate assistance.*								
151	☐	(B) This is ***not*** a major federal action that will have a significant effect on the quality of the human environment*. *Action: Proceed with planning process. "Significant" [190-GM 410.4(k)] is a function of context (what is changed) and intensity (how much it is changed), and the finding of significance depends on the reasons given for each of the effects described for this proposal. Federal action includes all NRCS actions not covered under a programmatic EIS or a categorical exclusion.*								
152	☐	(C) This may be a major federal action that will have a significant effect (adverse or beneficial) on the quality of the human environment. Additional evaluation may be needed by completing an environmental impact statement. *Action: The decision to prepare an EIS should be made in consultation with your immediate supervisor and the State Environmental Specialist.*								
153	*If not significant (not a major federal action): Explain the reason by component (intensity and/or context) and cumulatively [See 190-GM 410.4(k)]:									
154										
155										
156										
157										
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161										
162	Signature				Title:			Date:		

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Regulatory Challenges

- NRCS, EPA, and NMSU Extension seek to manage N on an agronomic rate basis, using a pre-plant pre-application nitrate soil test and fertilizer rate response curves to apply manure to fields.
- NM Enviroment Department, Ground Water allows N to be applied at 125% of planned yield uptake without regard to the amount of N in the soil.

Regulatory Challenges

- NM Environment Dept, Surface Water and NM Environment Dept, Ground Water have different requirements when lining runoff ponds.
- Determination of hydrologic connection is on a case by case bases.
- NRCS will not have staff to address all permit renewals to 590 manure management plan level by 2006.

We have work to do!