2011-2012 Nutrient Management Plan (NMP)

Clayton Cattle Feeders continues to maintain a Pollution Prevention Plan in accordance with the 1993 Region VI EPA CAFO permit. A description of the runoff control facilities, potential sources of pollutants, sampling protocols, and records regarding land application and manure transfer have been and continue to be maintained on-site.

The attached documents pertain to planned land application activities at the facility for the 2011-2012 crop year. Updates to the NMP will be made as necessary. Specifically, the NMP will be updated when: new sampling data is obtained (soil, effluent, and manure will be sampled at least annually), a new crop plan or plan of crop management is determined, and/or crop yield potential has changed.

The descriptions below summarize how the Land Application Information tables (Table 1.1) and Nutrient Management Budgets (Table 1.2) meet the requirements of Part III.A.3.g.ii of the NPDES General Permit.

Maximum Application Rates Part III.A.3.g.ii(A)(1)

A series of Nutrient Management Budgets have been generated for each field covered in the NMP. The budgets listed in Table 1.2 illustrate the nutrient requirements of the crop to be grown and the planned application rates (Column J), which are based on the crop nutrient requirements. Updates to soil samples, effluent samples, and manure samples will change application targets and will be considered prior to land application. Actual application rates may differ from planned application by as much as 20% given calibration of land application equipment, fertigation equipment, and management practices.

Growing crops will be checked regularly. If symptoms of nutrient deficiency are observed, samples of plant tissue and soil will be analyzed. Additional nutrient application will be based on lab recommendations.

The current summary of the planned application rates listed in Tables 1.2 for Clayton Cattle Feeders list effluent application goals of 18.0 in/ac for LMU #1, 16.9 in/ac for LMU #2, and 12.6 in/ac for LMU #3. This equates to a total volume of 5,607 ac-in with plant available nutrient totals of 49,300 #N and 205,800 #P2O5. Manure application goals include 7.1 tons/ac for LMU #4 and 8.3 tons/ac for LMU #5. This equates to a total weight of 1,925 tons of manure with plant available nutrient totals of 37,300 #N and 84,100 #P2O5.

If desired by the producer at any time, effluent application and fertilizer application could be replaced with manure application. All additional manure will be stockpiled and hauled off-site by a contract manure hauler for land application on neighboring farmland.

Site-Specific Phosphorus Index (PI) Part III.A.3.g.ii(A)(2)

A Phosphorus Index (PI) has been developed for each field covered in the NMP. The PI considers source and transport factors to determine a rating. All PI's resulted in a Medium P Hazard Class rating equating to nitrogen application limits.

Crop Plan and Yield Goals Part III.A.3.g.ii(A)(3) and (4)

A 2011 Crop Plan Map has been developed illustrating the crops to be planted.

The data in Table 1.2 illustrates the yield goal for each crop by field. The yield goals are based on actual expected crop production. No adjustment has been made to increase estimated yields above historical averages.

Potential alternative crops to be planted and corresponding yield goals (both irrigated and dryland) are listed in Tables 1.1 and Tables 1.2 for inclusion in the site specific permitting terms. Potential yield goals for any crop will be based on realistic yield goals customary to the area and consistent with the level of inputs and management provided.

Nitrogen and Phosphorus Recommendations Part III.A.3.g.ii(A)(5)

The yield goals listed in Tables 1.2 for each crop are utilized to determine the crop nutrient requirements. Crop nutrient requirements were obtained from the Texas Code 590 S_crops.xls datasheet and are applicable for similar crop systems in eastern New Mexico. These recommendations are an EPA approved source and are available at http://nmp.tamu.edu.

Methodology Part III.A.3.g.ii(A)(6)

The methodology utilized in Table 1.2 accounts for soil test nitrogen credits, all sources of nitrogen and phosphorus (commercial fertilizers, other sources, etc.), the actual amounts of plant available nutrients in the effluent and manure to be land applied, multi-year phosphorus application (if a field is limited to a phosphorus based application rate), and single-year applications that supply more than the crop's annual phosphorus requirement.

Results of Soils Tests Part III.A.3.g.ii(A)(6)(a)

The results of annual soils test are utilized to determine the amount of soil test nitrogen in the profile and to monitor changes in soil test phosphorus. Results of annual soils test are input into Table 1.2 and utilized to determine Amounts to Apply (Column J).

Credits for all Sources and Forms of Nitrogen and Phosphorus Part III.A.3.g.ii(A)(6)(b) and (e)

The Nutrient Management Budgets detailed in Tables 1.2 recognize soil test nitrogen in the top profile (Column C) as plant available nitrogen. Totals listed as Potential Crop Nitrogen Application Needed (Column E) have been reduced by the soil test nitrogen credit and any planned inorganic fertilizer application. Therefore, these budgets account for all sources of nitrogen and phosphorus, including soil test residual nitrogen and inorganic fertilizers.

Multi-year Phosphorus Application Part III.A.3.g.ii(A)(6)(d)

All fields in the 2011-2012 NMP are classified as nitrogen based application. If in the future, a field is classified as phosphorus based application, rates of application will be based on the annual phosphorus application limits as described in the New Mexico Phosphorus Index. If desired by the producer (for practical/logistical application of manure and/or effluent) a biennial application which equates to twice the phosphorus application limit may be made. The biennial application should not exceed 2 times the actual crop nitrogen requirement. Furthermore, no additional sources of organic phosphorus should be applied for 2 years, unless soil tests, tissue

tests, and/or field observations indicate additional nutrients are needed to maximize yield potential.

Timing and Method of Land Application Part III.A.3.g.ii(A)(6)(f)

The Land Application Information tables (Table 1.1) describe the method of land application (spreader or pivot) and the frequency, timing, and level of incorporation following land application.

The facility is located in an area with an average annual lake evaporation total greater than 60 inches and an average annual precipitation total of only 15 inches. The storage ponds experience significant evaporation and are only pumped when necessary to maintain storage volume for the 25-yr, 24-hr storm event.

Volatilization and Mineralization Part III.A.3.g.ii(A)(6)(c) and (g)

Volatilization rates and mineralization rates are utilized to determine the plant available nitrogen and phosphorus in both the effluent and manure nutrient sources. Plant available nutrients are utilized to determine actual application targets. Calculations used to determine the plant available nutrients are listed in footnote 5 of Table 1.2.

NMP Summary

The following plan recommends effluent application to LMU 1, LMU 2, and LMU 3 and manure application to LMU 4 and LMU 5. Primary crop rotations are wheat and either corn or sorghum. As described in the attached tables, any crop may be utilized for grazing, hay, silage, and/or grain. These management decisions will be made by the producer based on weather conditions and economic forecasts. The producer reserves the ability to graze any crop.

In the event that organic nutrients (effluent and manure) are not applied, crops should be monitored for nutrient deficiencies and commercial fertilizers utilized as needed to supplement crop nutrient requirements to maximize yield potential and crop management goals. Additional acreage (owned/operated by other producers) is available for off-site land application of manure and can be utilized as an alternative to on-site land application or once on-site land application goals have been met. The maximum application goals/rates described in this NMP should not be exceeded at any time. Application above these rates could result in nutrient buildup and further limit nutrient application in the next growing season.

Clayton Cattle Feeders -- Union Co, NM
2011 Crop Plan

Double-Ought Engineering
Dalhart, TX 79022
806.333.6520
Printed: 6/1/2011
1 in : 1152.00 ft

Table 1.1

LAND APPLICATION INFORMATION

Facilty Name: Clayton Cattle Feeders

This spreadsheet shall be filled out for each field to which manure, slurry, or effluent will or may be applied.

Field ID	Crop 1 (a)	Crop 2 (a)	Alternative Crops (b)	Irrigated	Dryland	Phosphorus Risk Assessment (c)	Time of Year when Application will Occur (season)	Potential Application Frequency (per month)	Form of Nutrient Source (liquid, solid or slurry)	Method of Application (pivot, spreader, etc.)	Solid Manure (incorporated or broadcast)	Frequency of Application (annual, biannual, or biennial)
LMU 1	Wheat Forage	Wheat Forage		x		Medium	Fall/Spring	2	Liquid	Pivot	N/A	Annual
			Small Grain (SG) Silage	x		Medium	Fall/Spring	2	Liquid	Pivot	N/A	Annual
			Corn Silage	x		Medium	Spring/Summer	2	Liquid	Pivot	N/A	Annual
			Corn Grain	x		Medium	Spring/Summer	2	Liquid	Pivot	N/A	Annual
			Sorghum Forage/Silage	x		Medium	Spring/Summer	2	Liquid	Pivot	N/A	Annual
			Wheat Forage	x		Medium	Fall/Spring	2	Liquid	Pivot	N/A	Annual
			Forage - other Small Grains	x		Medium	Fall/Spring	2	Liquid	Pivot	N/A	Annual
			Forage - cool season grass blend	x		Medium	Fall/Spring	2	Liquid	Pivot	N/A	Annual
			Forage - warm season grass blend	x		Medium	Spring/Summer	2	Liquid	Pivot	N/A	Annual
			Wheat Forage / Corn grain	x		Medium	Fall/Spring	1	Solid	Spreader	Incorporated	Annual
			Wheat Forage / Corn Silage	x		Medium	Fall/Spring	1	Solid	Spreader	Incorporated	Annual
			Wheat Forage / Sorgh Silage	x		Medium	Fall/Spring	1	Solid	Spreader	Incorporated	Annual
			Small Grain (SG) Silage		x	Medium	Fall/Spring	2	Liquid	Pivot	N/A	Annual
			Corn Silage		x	Medium	Fall/Spring	2	Liquid	Pivot	N/A	Annual
			Corn Grain		x	Medium	Spring/Summer	2	Liquid	Pivot	N/A	Annual
			Sorghum Forage/Silage		x	Medium	Spring/Summer	2	Liquid	Pivot	N/A	Annual
			Wheat Forage		x	Medium	Spring/Summer	2	Liquid	Pivot	N/A	Annual
			Forage - other Small Grains		x	Medium	Fall/Spring	2	Liquid	Pivot	N/A	Annual
			Forage - cool season grass blend		x	Medium	Fall/Spring	2	Liquid	Pivot	N/A	Annual
			Forage - warm season grass blend		x	Medium	Fall/Spring	2	Liquid	Pivot	N/A	Annual
LMU 2	Corn Grain	Sorghum Forage/Silage										
			Small Grain (SG) Silage	x		Medium	Fall/Spring	2	Liquid	Pivot	N/A	Annual
			Corn Silage	x		Medium	Spring/Summer	2	Liquid	Pivot	N/A	Annual
			Corn Grain	x		Medium	Spring/Summer	2	Liquid	Pivot	N/A	Annual
			Sorghum Forage/Silage	x		Medium	Spring/Summer	2	Liquid	Pivot	N/A	Annual
			Wheat Forage	x		Medium	Fall/Spring	2	Liquid	Pivot	N/A	Annual
			Forage - other Small Grains	x		Medium	Fall/Spring	2	Liquid	Pivot	N/A	Annual
			Forage - cool season grass blend	x		Medium	Fall/Spring	2	Liquid	Pivot	N/A	Annual
			Forage - warm season grass blend	x		Medium	Spring/Summer	2	Liquid	Pivot	N/A	Annual
			Small Grain (SG) Silage		x	Medium	Fall/Spring	2	Liquid	Pivot	N/A	Annual
			Corn Silage		x	Medium	Fall/Spring	2	Liquid	Pivot	N/A	Annual
			Corn Grain		x	Medium	Spring/Summer	2	Liquid	Pivot	N/A	Annual
			Sorghum Forage/Silage		x	Medium	Spring/Summer	2	Liquid	Pivot	N/A	Annual
			Wheat Forage		x	Medium	Spring/Summer	2	Liquid	Pivot	N/A	Annual
			Forage - other Small Grains		x	Medium	Fall/Spring	2	Liquid	Pivot	N/A	Annual
			Forage - cool season grass blend		x	Medium	Fall/Spring	2	Liquid	Pivot	N/A	Annual
			Forage - warm season grass blend		x	Medium	Fall/Spring	2	Liquid	Pivot	N/A	Annual

(a) Current planned crop rotation.

(b) Alternative crops that may be planted.

(c) Assessment shall be conducted for each field to which manure, slurry, or efluent will or may be applied on an annual basis. Refer to the Phosphorus Index Worksheet for each field.

Table 1.1

LAND APPLICATION INFORMATION

Facilty Name: Clayton Cattle Feeders

This spreadsheet shall be filled out for each field to which manure, slurry, or effluent will or may be applied.

Field ID	Crop 1 (a)	Crop 2 (a)	Alternative Crops (b)	Irrigated	Dryland	Phosphorus Risk Assessment (c)	Time of Year when Application will Occur (season)	Potential Application Frequency (per month)	Form of Nutrient Source (liquid, solid or slurry)	Method of Application (pivot, spreader, etc.)	Solid Manure (incorporated or broadcast)	Frequency of Application (annual, biannual, or biennial)
LMU 3	Corn Grain	Sorghum Forage/Silage		x		Medium	Fall/Spring	2	Liquid	Pivot	N/A	Annual
			Small Grain (SG) Silage	x		Medium	Fall/Spring	2	Liquid	Pivot	N/A	Annual
			Corn Silage	x		Medium	Spring/Summer	2	Liquid	Pivot	N/A	Annual
			Corn Grain	x		Medium	Spring/Summer	2	Liquid	Pivot	N/A	Annual
			Sorghum Forage/Silage	x		Medium	Spring/Summer	2	Liquid	Pivot	N/A	Annual
			Wheat Forage	x		Medium	Fall/Spring	2	Liquid	Pivot	N/A	Annual
			Forage - other Small Grains	x		Medium	Fall/Spring	2	Liquid	Pivot	N/A	Annual
			Forage - cool season grass blend	x		Medium	Fall/Spring	2	Liquid	Pivot	N/A	Annual
			Forage - warm season grass blend	x		Medium	Spring/Summer	2	Liquid	Pivot	N/A	Annual
			Small Grain (SG) Silage		x	Medium	Fall/Spring	2	Liquid	Pivot	N/A	Annual
			Corn Silage		x	Medium	Fall/Spring	2	Liquid	Pivot	N/A	Annual
			Corn Grain		x	Medium	Spring/Summer	2	Liquid	Pivot	N/A	Annual
			Sorghum Forage/Silage		x	Medium	Spring/Summer	2	Liquid	Pivot	N/A	Annual
			Wheat Forage		x	Medium	Spring/Summer	2	Liquid	Pivot	N/A	Annual
			Forage - other Small Grains		x	Medium	Fall/Spring	2	Liquid	Pivot	N/A	Annual
			Forage - cool season grass blend		x	Medium	Fall/Spring	2	Liquid	Pivot	N/A	Annual
			Forage - warm season grass blend		x	Medium	Fall/Spring	2	Liquid	Pivot	N/A	Annual
LMU 4	Corn Grain	Sorghum Forage/Silage										
			Small Grain (SG) Silage	x		Medium	Fall/Spring	2	Solid	Speader	Incorporated	Annual
			Corn Silage	x		Medium	Spring/Summer	2	Solid	Speader	Incorporated	Annual
			Corn Grain	x		Medium	Spring/Summer	2	Solid	Speader	Incorporated	Annual
			Sorghum Forage/Silage	x		Medium	Spring/Summer	2	Solid	Speader	Incorporated	Annual
			Wheat Forage	x		Medium	Fall/Spring	2	Solid	Speader	Incorporated	Annual
			Forage - other Small Grains	x		Medium	Fall/Spring	2	Solid	Speader	Incorporated	Annual
			Forage - cool season grass blend	x		Medium	Fall/Spring	2	Solid	Speader	Broadcast	Annual
			Forage - warm season grass blend	x		Medium	Spring/Summer	2	Solid	Speader	Broadcast	Annual
			Small Grain (SG) Silage		x	Medium	Fall/Spring	2	Solid	Speader	Incorporated	Annual
			Corn Silage		x	Medium	Fall/Spring	2	Solid	Speader	Incorporated	Annual
			Corn Grain		x	Medium	Spring/Summer	2	Solid	Speader	Incorporated	Annual
			Sorghum Forage/Silage		x	Medium	Spring/Summer	2	Solid	Speader	Incorporated	Annual
			Wheat Forage		x	Medium	Spring/Summer	2	Solid	Speader	Incorporated	Annual
			Forage - other Small Grains		x	Medium	Fall/Spring	2	Solid	Speader	Incorporated	Annual
			Forage - cool season grass blend		x	Medium	Fall/Spring	2	Solid	Speader	Broadcast	Annual
			Forage - warm season grass blend		x	Medium	Fall/Spring	2	Solid	Speader	Broadcast	Annual

(a) Current planned crop rotation.

(b) Alternative crops that may be planted.

(c) Assessment shall be conducted for each field to which manure, slurry, or efluent will or may be applied on an annual basis. Refer to the Phosphorus Index Worksheet for each field.

Table 1.1

LAND APPLICATION INFORMATION

Facilty Name: Clayton Cattle Feeders

This spreadsheet shall be filled out for each field to which manure, slurry, or effluent will or may be applied.

Field ID	Crop 1 (a)	Crop 2 (a)	Alternative Crops (b)	Irrigated	Dryland	Phosphorus Risk Assessment (c)	Time of Year when Application will Occur (season)	Potential Application Frequency (per month)	Form of Nutrient Source (liquid, solid or slurry)	Method of Application (pivot, spreader, etc.)	Solid Manure (incorporated or broadcast)	Frequency of Application (annual, biannual, or biennial)
LMU 5	Wheat Forage	Wheat Forage		x		Medium	Fall/Spring	2	Solid	Spreader	Incorporated	Annual
			Small Grain (SG) Silage	x		Medium	Fall/Spring	2	Solid	Spreader	Incorporated	Annual
			Corn Silage	x		Medium	Spring/Summer	2	Solid	Spreader	Incorporated	Annual
			Corn Grain	x		Medium	Spring/Summer	2	Solid	Spreader	Incorporated	Annual
			Sorghum Forage/Silage	x		Medium	Spring/Summer	2	Solid	Spreader	Incorporated	Annual
			Wheat Forage	x		Medium	Fall/Spring	2	Solid	Spreader	Incorporated	Annual
			Forage - other Small Grains	x		Medium	Fall/Spring	2	Solid	Spreader	Incorporated	Annual
			Forage - cool season grass blend	x		Medium	Fall/Spring	2	Solid	Spreader	Broadcast	Annual
			Forage - warm season grass blend	x		Medium	Spring/Summer	2	Solid	Spreader	Broadcast	Annual
			Small Grain (SG) Silage		x	Medium	Fall/Spring	2	Solid	Spreader	Incorporated	Annual
			Corn Silage		x	Medium	Fall/Spring	2	Solid	Spreader	Incorporated	Annual
			Corn Grain		x	Medium	Spring/Summer	2	Solid	Spreader	Incorporated	Annual
			Sorghum Forage/Silage		x	Medium	Spring/Summer	2	Solid	Spreader	Incorporated	Annual
			Wheat Forage		x	Medium	Spring/Summer	2	Solid	Spreader	Incorporated	Annual
			Forage - other Small Grains		x	Medium	Fall/Spring	2	Solid	Spreader	Incorporated	Annual
			Forage - cool season grass blend		x	Medium	Fall/Spring	2	Solid	Spreader	Broadcast	Annual
			Forage - warm season grass blend		x	Medium	Fall/Spring	2	Solid	Spreader	Broadcast	Annual

(a) Current planned crop rotation.

(b) Alternative crops that may be planted.

(c) Assessment shall be conducted for each field to which manure, slurry, or efluent will or may be applied on an annual basis. Refer to the Phosphorus Index Worksheet for each field.

Table 1.2
NUTRIENT MANAGEMENT BUDGETS
Clayton Cattle Feeders
Union County, NM
2011 - 2012 Crop Year

			A	B	C	D	E		F	G	H	I	J	K
Field ID	**Crop**	**Yield**	**Crop N Req'mt lb/Ac (1)**	**Crop P2O5 Removal Rate lb/Ac (1)**	**0-6" Soil Test NO3-N lb/Ac (2)**	**0-6" Soil Test P (Bicarb P) ppm (2)**	**Potential Crop N Application Needed lb/Ac (3)**	**Source**	**Plant Available N (4) (5)**	**Plant Available P2O5 (4) (5)**	**P Loss Risk (6)**	**Com. Fert. Rate N lb/Ac**	**Amount to Apply (7)**	**P2O5 Application (PI Adjusted) lb/ac (8)**
Effluent									**(lb/ac-in)**	**(lb/ac-in)**			**(in/ac)**	
LMU 1	Wheat Forage	6T	240	37	81	132	159	RCS	8.8	36.7	1	0	**18.0**	661
	(budgets for some alternative crops/combinations below)													
LMU 1	Wheat Forage / Corn grain	6T/180bu	450	105	81	132	369	RCS	8.8	36.7	1	0	41.8	1533
LMU 1	Small Grain (SG) Silage	12T	160	67	81	132	79	RCS	8.8	36.7	1	0	8.9	328
LMU 1	Corn Silage	25T	350	96	81	132	269	RCS	8.8	36.7	1	0	30.5	1118
LMU 1	Corn Grain	180 bu	210	68	81	132	129	RCS	8.8	36.7	1	0	14.6	536
LMU 1	Sorghum Forage/Silage	20T	280	74	81	132	199	RCS	8.8	36.7	1	0	22.5	827
LMU 1	Wheat Forage	6T	240	37	81	132	159	RCS	8.8	36.7	1	0	18.0	661
LMU 1	Forage - other Small Grains	6T	240	37	81	132	159	RCS	8.8	36.7	1	0	18.0	661
LMU 1	Forage - cool season grass blend	4T	240	43	81	132	159	RCS	8.8	36.7	1	0	18.0	661
LMU 1	Forage - warm season grass blend	6T	200	35	81	132	119	RCS	8.8	36.7	1	0	13.5	494
LMU 1	Small Grain (SG) Silage	4T	55	25	81	132	-26	RCS	8.8	36.7	1	0	0.0	0
LMU 1	Corn Silage	8T	85	38	81	132	4	RCS	8.8	36.7	1	0	0.5	17
LMU 1	Corn Grain	50 bu	70	25	81	132	-11	RCS	8.8	36.7	1	0	0.0	0
LMU 1	Sorghum Forage/Silage	8T	145	40	81	132	64	RCS	8.8	36.7	1	0	7.2	266
LMU 1	Wheat Forage	3T	60	12	81	132	-21	RCS	8.8	36.7	1	0	0.0	0
LMU 1	Forage - other Small Grains	3T	60	12	81	132	-21	RCS	8.8	36.7	1	0	0.0	0
LMU 1	Forage - cool season grass blend	1.5T	85	20	81	132	4	RCS	8.8	36.7	1	0	0.5	17
LMU 1	Forage - warm season grass blend	2T	120	17	81	132	39	RCS	8.8	36.7	1	0	4.4	162
Manure									**(lb/ton)**	**(lb/ton)**			**(tons/ac)**	
LMU 1	Wheat Forage / Corn grain	6T/180bu	450	105	81	132	369	Stockpile	19.4	43.7	1	0	19.0	831
LMU 1	Wheat Forage / Corn Silage	6T/25T	590	133	81	132	509	Stockpile	19.4	43.7	1	0	26.2	1147
LMU 1	Wheat Forage / Sorgh Silage	6T/20T	520	111	81	132	439	Stockpile	19.4	43.7	1	0	22.6	989

Notes:

(1) Crop Nitrogen Requirement (nutrient needs), lbs/ac and based on Crop Requirement tables utilized by the Texas 590-633 Nutrient Managment - Nutrient Utilization Worksheets. New Mexico specific information is non existant and cropping systems/climates are simlar for west Texas and eastern NM.

(2) Obtained from annual soil tests results for each field.

(3) Column A-Column C-Column I = Potential Crop N Application Needed to be supplied by organic source. Negative value indicates residual is higher than crop N requirement which will result in no planned nutrient application.

(4) Site specific effluent analysis dated 11/29/2010. Total-N = 91 ppm, Org-N = 42 ppm, NH3-N = 49 ppm, P2O5 = 180 ppm. Manure analysis (11/29/2010) Total N = 37.8#/ton, Org N = 31.4#/ton, NH3-N = 6.1#/ton, P2O5 = 48.6 #/ton

(5) Availability of N is estimated utilizing the USDA Ag Waste Management Handbook, Chapter 11. Plant Available N = (Organic * 52%) + (Ammonia * 35%); Manure Available N = (Organic * 52%) + (Ammonia * 50%); Effluent and Manure P2O5 Available = 90% Total P2O5.

(6) Calculated using the New Mexico Phosphorus Index Worksheet (1=Very Low, Low, Medium (Max rate = N rate), 2=High (Max rate = 1.5 P removal), 3=Very High (Max rate = P removal), 4=Excessive (no application))

(7) The amount of each nutrient source (inches/ac for effluent and tons/ac for manure) to apply based on analysis of Potential Crop N Applicaton Needed and PI rating/limits. For P Loss Risk = 1, Column E / Column F = Amount to Apply. For P Loss Risk = 2, Column B * 1.5 / Column G = Amount to Apply if Column E > 0, For P Loss Risk = 3, Column B / Column G = Amount to Apply, if Column E > 0.

(8) Potential total P2O5 (lb/ac) to be applied by total in Column J. If P Loss Risk (Column H) is 1 then application rate is at the N rate. If P Loss Risk is greater than 1 then Column J is adjusted to meet PI Rating Class as described in footnote (6) above.

Table 1.2
NUTRIENT MANAGEMENT BUDGETS
Clayton Cattle Feeders
Union County, NM
2011 - 2012 Crop Year

			A	B	C	D	E		F	G	H	I	J	K
Field ID	**Crop**	**Yield**	**Crop N Req' mt lb/Ac (1)**	**Crop P2O5 Removal Rate lb/Ac (1)**	**0-6" Soil Test NO3-N lb/Ac (2)**	**0-6" Soil Test P (Bicarb P) ppm (2)**	**Potential Crop N Application Needed lb/Ac (3)**	**Source**	**Plant Available N (4) (5)**	**Plant Available P2O5 (4) (5)**	**P Loss Risk (6)**	**Com. Fert. Rate N lb/Ac**	**Amount to Apply (7)**	**P2O5 Application (PI Adjusted) lb/ac (8)**
Effluent									**(lb/ac-in)**	**(lb/ac-in)**			**(in/ac)**	
LMU 2	Corn Grain	180 bu	210	68	61	119	149	RCS	8.8	36.7	1	0	**16.9**	619
	(budgets for some alternative crops/combinations below)													
LMU 2	Wheat Forage / Corn grain	6T/180bu	450	105	61	119	389	RCS	8.8	36.7	1	0	44.0	1616
LMU 2	Small Grain (SG) Silage	12T	160	67	61	119	99	RCS	8.8	36.7	1	0	11.2	411
LMU 2	Corn Silage	25T	350	96	61	119	289	RCS	8.8	36.7	1	0	32.7	1201
LMU 2	Corn Grain	180 bu	210	68	61	119	149	RCS	8.8	36.7	1	0	16.9	619
LMU 2	Sorghum Forage/Silage	20T	280	74	61	119	219	RCS	8.8	36.7	1	0	24.8	910
LMU 2	Wheat Forage	6T	240	37	61	119	179	RCS	8.8	36.7	1	0	20.3	744
LMU 2	Forage - other Small Grains	6T	240	37	61	119	179	RCS	8.8	36.7	1	0	20.3	744
LMU 2	Forage - cool season grass blend	4T	240	43	61	119	179	RCS	8.8	36.7	1	0	20.3	744
LMU 2	Forage - warm season grass blend	6T	200	35	61	119	139	RCS	8.8	36.7	1	0	15.7	578
LMU 2	Small Grain (SG) Silage	4T	55	25	61	119	-6	RCS	8.8	36.7	1	0	0.0	0
LMU 2	Corn Silage	8T	85	38	61	119	24	RCS	8.8	36.7	1	0	2.7	100
LMU 2	Corn Grain	50 bu	70	25	61	119	9	RCS	8.8	36.7	1	0	1.0	37
LMU 2	Sorghum Forage/Silage	8T	145	40	61	119	84	RCS	8.8	36.7	1	0	9.5	349
LMU 2	Wheat Forage	3T	60	12	61	119	-1	RCS	8.8	36.7	1	0	0.0	0
LMU 2	Forage - other Small Grains	3T	60	12	61	119	-1	RCS	8.8	36.7	1	0	0.0	0
LMU 2	Forage - cool season grass blend	1.5T	85	20	61	119	24	RCS	8.8	36.7	1	0	2.7	100
LMU 2	Forage - warm season grass blend	2T	120	17	61	119	59	RCS	8.8	36.7	1	0	6.7	245
Manure									**(lb/ton)**	**(lb/ton)**			**(tons/ac)**	

Notes:

(1) Crop Nitrogen Requirement (nutrient needs), lbs/ac and based on Crop Requirement tables utilized by the Texas 590-633 Nutrient Managment - Nutrient Utilization Worksheets. New Mexico specific information is non existant and cropping systems/climates are simlar for west Texas and eastern NM.

(2) Obtained from annual soil tests results for each field.

(3) Column A-Column C-Column I = Potential Crop N Application Needed to be supplied by organic source. Negative value indicates residual is higher than crop N requirement which will result in no planned nutrient application.

(4) Site specific effluent analysis dated 11/29/2010. Total-N = 91 ppm, Org-N = 42 ppm, NH3-N = 49 ppm, P2O5 = 180 ppm. Manure analysis (11/29/2010) Total N = 37.8#/ton, Org N = 31.4#/ton, NH3-N = 6.1#/ton, P2O5 = 48.6 #/ton

(5) Availability of N is estimated utilizing the USDA Ag Waste Management Handbook, Chapter 11. Plant Available N = (Organic * 52%) + (Ammonia * 35%); Manure Available N = (Organic * 52%) + (Ammonia * 50%); Effluent and Manure P2O5 Available = 90% Total P2O5.

(6) Calculated using the New Mexico Phosphorus Index Worksheet (1=Very Low, Low, Medium (Max rate = N rate), 2=High (Max rate = 1.5 P removal), 3=Very High (Max rate = P removal), 4=Excessive (no application))

(7) The amount of each nutrient source (inches/ac for effluent and tons/ac for manure) to apply based on analysis of Potential Crop N Applicaton Needed and PI rating/limits. For P Loss Risk = 1, Column E / Column F = Amount to Apply. For P Loss Risk = 2, Column B * 1.5 / Column G = Amount to Apply if Column E > 0, For P Loss Risk = 3, Column B / Column G = Amount to Apply, if Column E > 0.

(8) Potential total P2O5 (lb/ac) to be applied by total in Column J. If P Loss Risk (Column H) is 1 then application rate is at the N rate. If P Loss Risk is greater than 1 then Column J is adjusted to meet PI Rating Class as described in footnote (6) above.

Table 1.2
NUTRIENT MANAGEMENT BUDGETS
Clayton Cattle Feeders
Union County, NM
2011 - 2012 Crop Year

			A	B	C	D	E		F	G	H	I	J	K
Field ID	**Crop**	**Yield**	**Crop N Req' mt lb/Ac (1)**	**Crop P2O5 Removal Rate lb/Ac (1)**	**0-6" Soil Test NO3-N lb/Ac (2)**	**0-6" Soil Test P (Bicarb P) ppm (2)**	**Potential Crop N Application Needed lb/Ac (3)**	**Source**	**Plant Available N (4) (5)**	**Plant Available P2O5 (4) (5)**	**P Loss Risk (6)**	**Com. Fert. Rate N lb/Ac**	**Amount to Apply (7)**	**P2O5 Application (PI Adjusted) lb/ac (8)**
Effluent									**(lb/ac-in)**	**(lb/ac-in)**			**(in/ac)**	
LMU 3	Corn Grain	180 bu	210	68	99	112	111	RCS	8.8	36.7	1	0	**12.6**	461
	(budgets for some alternative crops/combinations below)													
LMU 3	Wheat Forage / Corn grain	6T/180bu	450	105	99	112	351	RCS	8.8	36.7	1	0	39.7	1458
LMU 3	Small Grain (SG) Silage	12T	160	67	99	112	61	RCS	8.8	36.7	1	0	6.9	253
LMU 3	Corn Silage	25T	350	96	99	112	251	RCS	8.8	36.7	1	0	28.4	1043
LMU 3	Corn Grain	180 bu	210	68	99	112	111	RCS	8.8	36.7	1	0	12.6	461
LMU 3	Sorghum Forage/Silage	20T	280	74	99	112	181	RCS	8.8	36.7	1	0	20.5	752
LMU 3	Wheat Forage	6T	240	37	99	112	141	RCS	8.8	36.7	1	0	16.0	586
LMU 3	Forage - other Small Grains	6T	240	37	99	112	141	RCS	8.8	36.7	1	0	16.0	586
LMU 3	Forage - cool season grass blend	4T	240	43	99	112	141	RCS	8.8	36.7	1	0	16.0	586
LMU 3	Forage - warm season grass blend	6T	200	35	99	112	101	RCS	8.8	36.7	1	0	11.4	420
LMU 3	Small Grain (SG) Silage	4T	55	25	99	112	-44	RCS	8.8	36.7	1	0	0.0	0
LMU 3	Corn Silage	8T	85	38	99	112	-14	RCS	8.8	36.7	1	0	0.0	0
LMU 3	Corn Grain	50 bu	70	25	99	112	-29	RCS	8.8	36.7	1	0	0.0	0
LMU 3	Sorghum Forage/Silage	8T	145	40	99	112	46	RCS	8.8	36.7	1	0	5.2	191
LMU 3	Wheat Forage	3T	60	12	99	112	-39	RCS	8.8	36.7	1	0	0.0	0
LMU 3	Forage - other Small Grains	3T	60	12	99	112	-39	RCS	8.8	36.7	1	0	0.0	0
LMU 3	Forage - cool season grass blend	1.5T	85	20	99	112	-14	RCS	8.8	36.7	1	0	0.0	0
LMU 3	Forage - warm season grass blend	2T	120	17	99	112	21	RCS	8.8	36.7	1	0	2.4	87
Manure									**(lb/ton)**	**(lb/ton)**			**(tons/ac)**	

Notes:

(1) Crop Nitrogen Requirement (nutrient needs), lbs/ac and based on Crop Requirement tables utilized by the Texas 590-633 Nutrient Managment - Nutrient Utilization Worksheets. New Mexico specific information is non existant and cropping systems/climates are simlar for west Texas and eastern NM.

(2) Obtained from annual soil tests results for each field.

(3) Column A-Column C-Column I = Potential Crop N Application Needed to be supplied by organic source. Negative value indicates residual is higher than crop N requirement which will result in no planned nutrient application.

(4) Site specific effluent analysis dated 11/29/2010. Total-N = 91 ppm, Org-N = 42 ppm, NH3-N = 49 ppm, P2O5 = 180 ppm. Manure analysis (11/29/2010) Total N = 37.8#/ton, Org N = 31.4#/ton, NH3-N = 6.1#/ton, P2O5 = 48.6 #/ton

(5) Availability of N is estimated utilizing the USDA Ag Waste Management Handbook, Chapter 11. Plant Available N = (Organic * 52%) + (Ammonia * 35%); Manure Available N = (Organic * 52%) + (Ammonia * 50%); Effluent and Manure P2O5 Available = 90% Total P2O5.

(6) Calculated using the New Mexico Phosphorus Index Worksheet (1=Very Low, Low, Medium (Max rate = N rate), 2=High (Max rate = 1.5 P removal), 3=Very High (Max rate = P removal), 4=Excessive (no application))

(7) The amount of each nutrient source (inches/ac for effluent and tons/ac for manure) to apply based on analysis of Potential Crop N Applicaton Needed and PI rating/limits. For P Loss Risk = 1, Column E / Column F = Amount to Apply. For P Loss Risk = 2, Column B * 1.5 / Column G = Amount to Apply if Column E > 0, For P Loss Risk = 3, Column B / Column G = Amount to Apply, if Column E > 0.

(8) Potential total P2O5 (lb/ac) to be applied by total in Column J. If P Loss Risk (Column H) is 1 then application rate is at the N rate. If P Loss Risk is greater than 1 then Column J is adjusted to meet PI Rating Class as described in footnote (6) above.

Table 1.2
NUTRIENT MANAGEMENT BUDGETS
Clayton Cattle Feeders
Union County, NM
2011 - 2012 Crop Year

			A	B	C	D	E		F	G	H	I	J	K
Field ID	**Crop**	**Yield**	**Crop N Req' mt lb/Ac (1)**	**Crop P2O5 Removal Rate lb/Ac (1)**	**0-6" Soil Test NO3-N lb/Ac (2)**	**0-6" Soil Test P (Bicarb P) ppm (2)**	**Potential Crop N Application Needed lb/Ac (3)**	**Source**	**Plant Available N (4) (5)**	**Plant Available P2O5 (4) (5)**	**P Loss Risk (6)**	**Com. Fert. Rate N lb/Ac**	**Amount to Apply (7)**	**P2O5 Application (PI Adjusted) lb/ac (8)**
Manure									**(lb/ton)**	**(lb/ton)**			**(tons/ac)**	
LMU 4	Corn Grain	180 bu	210	68	72	146	138	Stockpile	19.4	43.7	1	0	**7.1**	311
	(budgets for some alternative crops/combinations below)													
LMU 4	Wheat Forage / Corn grain	6T/180bu	450	105	72	146	378	Stockpile	19.4	43.7	1	0	19.5	851
LMU 4	Small Grain (SG) Silage	12T	160	67	72	146	88	Stockpile	19.4	43.7	1	0	4.5	198
LMU 4	Corn Silage	25T	350	96	72	146	278	Stockpile	19.4	43.7	1	0	14.3	626
LMU 4	Corn Grain	180 bu	210	68	72	146	138	Stockpile	19.4	43.7	1	0	7.1	311
LMU 4	Sorghum Forage/Silage	20T	280	74	72	146	208	Stockpile	19.4	43.7	1	0	10.7	469
LMU 4	Wheat Forage	6T	240	37	72	146	168	Stockpile	19.4	43.7	1	0	8.7	378
LMU 4	Forage - other Small Grains	6T	240	37	72	146	168	Stockpile	19.4	43.7	1	0	8.7	378
LMU 4	Forage - cool season grass blend	4T	240	43	72	146	168	Stockpile	19.4	43.7	1	0	8.7	378
LMU 4	Forage - warm season grass blend	6T	200	35	72	146	128	Stockpile	19.4	43.7	1	0	6.6	288
LMU 4	Small Grain (SG) Silage	4T	55	25	72	146	-17	Stockpile	19.4	43.7	1	0	0.0	0
LMU 4	Corn Silage	8T	85	38	72	146	13	Stockpile	19.4	43.7	1	0	0.7	29
LMU 4	Corn Grain	50 bu	70	25	72	146	-2	Stockpile	19.4	43.7	1	0	0.0	0
LMU 4	Sorghum Forage/Silage	8T	145	40	72	146	73	Stockpile	19.4	43.7	1	0	3.8	164
LMU 4	Wheat Forage	3T	60	12	72	146	-12	Stockpile	19.4	43.7	1	0	0.0	0
LMU 4	Forage - other Small Grains	3T	60	12	72	146	-12	Stockpile	19.4	43.7	1	0	0.0	0
LMU 4	Forage - cool season grass blend	1.5T	85	20	72	146	13	Stockpile	19.4	43.7	1	0	0.7	29
LMU 4	Forage - warm season grass blend	2T	120	17	72	146	48	Stockpile	19.4	43.7	1	0	2.5	108
Effluent									**(lb/ac-in)**	**(lb/ac-in)**			**(in/ac)**	

Notes:

(1) Crop Nitrogen Requirement (nutrient needs), lbs/ac and based on Crop Requirement tables utilized by the Texas 590-633 Nutrient Managment - Nutrient Utilization Worksheets. New Mexico specific information is non existant and cropping systems/climates are simlar for west Texas and eastern NM.

(2) Obtained from annual soil tests results for each field.

(3) Column A-Column C-Column I = Potential Crop N Application Needed to be supplied by organic source. Negative value indicates residual is higher than crop N requirement which will result in no planned nutrient application.

(4) Site specific effluent analysis dated 11/29/2010. Total-N = 91 ppm, Org-N = 42 ppm, NH3-N = 49 ppm, P2O5 = 180 ppm. Manure analysis (11/29/2010) Total N = 37.8#/ton, Org N = 31.4#/ton, NH3-N = 6.1#/ton, P2O5 = 48.6 #/ton

(5) Availability of N is estimated utilizing the USDA Ag Waste Management Handbook, Chapter 11. Plant Available N = (Organic * 52%) + (Ammonia * 35%); Manure Available N = (Organic * 52%) + (Ammonia * 50%); Effluent and Manure P2O5 Available = 90% Total P2O5.

(6) Calculated using the New Mexico Phosphorus Index Worksheet (1=Very Low, Low, Medium (Max rate = N rate), 2=High (Max rate = 1.5 P removal), 3=Very High (Max rate = P removal), 4=Excessive (no application))

(7) The amount of each nutrient source (inches/ac for effluent and tons/ac for manure) to apply based on analysis of Potential Crop N Applicaton Needed and PI rating/limits. For P Loss Risk = 1, Column E / Column F = Amount to Apply. For P Loss Risk = 2, Column B * 1.5 / Column G = Amount to Apply if Column E > 0, For P Loss Risk = 3, Column B / Column G = Amount to Apply, if Column E > 0.

(8) Potential total P2O5 (lb/ac) to be applied by total in Column J. If P Loss Risk (Column H) is 1 then application rate is at the N rate. If P Loss Risk is greater than 1 then Column J is adjusted to meet PI Rating Class as described in footnote (6) above.

Table 1.2
NUTRIENT MANAGEMENT BUDGETS
Clayton Cattle Feeders
Union County, NM
2011 - 2012 Crop Year

			A	B	C	D	E		F	G	H	I	J	K
Field ID	**Crop**	**Yield**	**Crop N Req' mt lb/Ac (1)**	**Crop P2O5 Removal Rate lb/Ac (1)**	**0-6" Soil Test NO3-N lb/Ac (2)**	**0-6" Soil Test P (Bicarb P) ppm (2)**	**Potential Crop N Application Needed lb/Ac (3)**	**Source**	**Plant Available N (4) (5)**	**Plant Available P2O5 (4) (5)**	**P Loss Risk (6)**	**Com. Fert. Rate N lb/Ac**	**Amount to Apply (7)**	**P2O5 Application (PI Adjusted) lb/ac (8)**
Manure									**(lb/ton)**	**(lb/ton)**			**(tons/ac)**	
LMU 5	Wheat Forage	6T	240	37	79	112	161	Stockpile	19.4	43.7	1	0	**8.3**	363
	(budgets for some alternative crops/combinations below)													
LMU 5	Wheat Forage / Corn grain	6T/180bu	450	105	79	112	371	Stockpile	19.4	43.7	1	0	19.1	836
LMU 5	Small Grain (SG) Silage	12T	160	67	79	112	81	Stockpile	19.4	43.7	1	0	4.2	182
LMU 5	Corn Silage	25T	350	96	79	112	271	Stockpile	19.4	43.7	1	0	14.0	610
LMU 5	Corn Grain	180 bu	210	68	79	112	131	Stockpile	19.4	43.7	1	0	6.8	295
LMU 5	Sorghum Forage/Silage	20T	280	74	79	112	201	Stockpile	19.4	43.7	1	0	10.4	453
LMU 5	Wheat Forage	6T	240	37	79	112	161	Stockpile	19.4	43.7	1	0	8.3	363
LMU 5	Forage - other Small Grains	6T	240	37	79	112	161	Stockpile	19.4	43.7	1	0	8.3	363
LMU 5	Forage - cool season grass blend	4T	240	43	79	112	161	Stockpile	19.4	43.7	1	0	8.3	363
LMU 5	Forage - warm season grass blend	6T	200	35	79	112	121	Stockpile	19.4	43.7	1	0	6.2	273
LMU 5	Small Grain (SG) Silage	4T	55	25	79	112	-24	Stockpile	19.4	43.7	1	0	0.0	0
LMU 5	Corn Silage	8T	85	38	79	112	6	Stockpile	19.4	43.7	1	0	0.3	14
LMU 5	Corn Grain	50 bu	70	25	79	112	-9	Stockpile	19.4	43.7	1	0	0.0	0
LMU 5	Sorghum Forage/Silage	8T	145	40	79	112	66	Stockpile	19.4	43.7	1	0	3.4	149
LMU 5	Wheat Forage	3T	60	12	79	112	-19	Stockpile	19.4	43.7	1	0	0.0	0
LMU 5	Forage - other Small Grains	3T	60	12	79	112	-19	Stockpile	19.4	43.7	1	0	0.0	0
LMU 5	Forage - cool season grass blend	1.5T	85	20	79	112	6	Stockpile	19.4	43.7	1	0	0.3	14
LMU 5	Forage - warm season grass blend	2T	120	17	79	112	41	Stockpile	19.4	43.7	1	0	2.1	92
Effluent									**(lb/ac-in)**	**(lb/ac-in)**			**(in/ac)**	

Notes:

(1) Crop Nitrogen Requirement (nutrient needs), lbs/ac and based on Crop Requirement tables utilized by the Texas 590-633 Nutrient Managment - Nutrient Utilization Worksheets. New Mexico specific information is non existant and cropping systems/climates are simlar for west Texas and eastern NM.

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(4) Site specific effluent analysis dated 11/29/2010. Total-N = 91 ppm, Org-N = 42 ppm, NH3-N = 49 ppm, P2O5 = 180 ppm. Manure analysis (11/29/2010) Total N = 37.8#/ton, Org N = 31.4#/ton, NH3-N = 6.1#/ton, P2O5 = 48.6 #/ton

(5) Availability of N is estimated utilizing the USDA Ag Waste Management Handbook, Chapter 11. Plant Available N = (Organic * 52%) + (Ammonia * 35%); Manure Available N = (Organic * 52%) + (Ammonia * 50%); Effluent and Manure P2O5 Available = 90% Total P2O5.

(6) Calculated using the New Mexico Phosphorus Index Worksheet (1=Very Low, Low, Medium (Max rate = N rate), 2=High (Max rate = 1.5 P removal), 3=Very High (Max rate = P removal), 4=Excessive (no application))

(7) The amount of each nutrient source (inches/ac for effluent and tons/ac for manure) to apply based on analysis of Potential Crop N Applicaton Needed and PI rating/limits. For P Loss Risk = 1, Column E / Column F = Amount to Apply. For P Loss Risk = 2, Column B * 1.5 / Column G = Amount to Apply if Column E > 0, For P Loss Risk = 3, Column B / Column G = Amount to Apply, if Column E > 0.

(8) Potential total P2O5 (lb/ac) to be applied by total in Column J. If P Loss Risk (Column H) is 1 then application rate is at the N rate. If P Loss Risk is greater than 1 then Column J is adjusted to meet PI Rating Class as described in footnote (6) above.

PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	**Clayton Cattle Feeders, I**	**Field(s):**	**1**	**Date:**	**9/2/2011**
Planner:	**Shad McDaniel**	**Location:**	**Union Co, NM**	**Crop:**	**wheat/corn**
Soil Permeablity (in/hr):	**0.06**	**Slope (%):**	**3%**	**Planned/Exist.:**	**Planned**

Site Characteristic	**Place an X in the approprate 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		4
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		4
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			3
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			3
Runoff Class (Runoff Class Table 2)	Very Low or Negligible	Low	Medium	High	Very High	
			X			3
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			1
Vegetative Buffer	> 100 ft wide	>65-100 ft wide	20-65 feet wide	< 20 feet wide	No Buffer	
	X					0

P Hazard Class:	**Medium**	**Total Index Points:**	**26.0**
Phosphorus Application Classification:		**N Based**	

Notes:

This evaluation has a Medium P hazard class and the nutrient application can be based on N.

Comments:

Maintain 200 ft buffer from dry stream bed (no application) or limit application to 1.5 X P removal rates.

PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	**Clayton Cattle Feeders, I**	**Field(s):**	**2**	**Date:**	**9/2/2011**
Planner:	**Shad McDaniel**	**Location:**	**Union Co, NM**	**Crop:**	**For. Sorgh**
Soil Permeablity (in/hr):	**0.06**	**Slope (%):**	**3%**	**Planned/Exist.:**	**Planned**

Site Characteristic	**Place an X in the approprate 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		4
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		4
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			3
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			3
Runoff Class (Runoff Class Table 2)	Very Low or Negligible	Low	Medium	High	Very High	
			X			3
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			1
Vegetative Buffer	> 100 ft wide	>65-100 ft wide	20-65 feet wide	< 20 feet wide	No Buffer	
	X					0

P Hazard Class:	**Medium**	**Total Index Points:**	**26.0**
Phosphorus Application Classification:		**N Based**	

Notes:

This evaluation has a Medium P hazard class and the nutrient application can be based on N.

Comments:

Maintain 200 ft buffer from dry stream bed (no application) or limit application to 1.5 X P removal rates.

PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	**Clayton Cattle Feeders, I**	**Field(s):**	**3**	**Date:**	**9/3/2011**
Planner:	**Shad McDaniel**	**Location:**	**Union Co, NM**	**Crop:**	**For. Sorgh**
Soil Permeablity (in/hr):	**0.6**	**Slope (%):**	**3%**	**Planned/Exist.:**	**Planned**

Site Characteristic	**Place an X in the approprate 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		4
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		4
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			3
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			3
Runoff Class (Runoff Class Table 2)	Very Low or Negligible	Low	Medium	High	Very High	
	X					0
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	4
Vegetative Buffer	> 100 ft wide	>65-100 ft wide	20-65 feet wide	< 20 feet wide	No Buffer	
	X					0

P Hazard Class:	**Medium**	**Total Index Points:**	**26.0**
Phosphorus Application Classification:		**N Based**	

Notes:

This evaluation has a Medium P hazard class and the nutrient application can be based on N.

Comments:

Maintain 200 ft buffer from dry stream bed (no application) or limit application to 1.5 X P removal rates.

PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	**Clayton Cattle Feeders, I**	**Field(s):**	**4**	**Date:**	**9/3/2011**
Planner:	**Shad McDaniel**	**Location:**	**Union Co, NM**	**Crop:**	**For. Sorgh**
Soil Permeablity (in/hr):	**0.6**	**Slope (%):**	**3%**	**Planned/Exist.:**	**Planned**

Site Characteristic	**Place an X in the approprate 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		4
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		4
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			3
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			3
Runoff Class (Runoff Class Table 2)	Very Low or Negligible	Low	Medium	High	Very High	
	X					0
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	4
Vegetative Buffer	> 100 ft wide	>65-100 ft wide	20-65 feet wide	< 20 feet wide	No Buffer	
	X					0

P Hazard Class: **Medium** **Total Index Points:** **26.0**

Phosphorus Application Classification: **N Based**

Notes:

This evaluation has a Medium P hazard class and the nutrient application can be based on N.

Comments:

Maintain 200 ft buffer from dry stream bed (no application) or limit application to 1.5 X P removal rates.

PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	**Clayton Cattle Feeders, I**	**Field(s):**	**5**	**Date:**	**9/3/2011**
Planner:	**Shad McDaniel**	**Location:**	**Union Co, NM**	**Crop:**	**wheat**
Soil Permeablity (in/hr):	**0.6**	**Slope (%):**	**3**	**Planned/Exist.:**	**Planned**

Site Characteristic	**Place an X in the approprate 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		4
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					0
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			3
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		2
Vegetative Buffer	> 100 ft wide	>65-100 ft wide	20-65 feet wide	< 20 feet wide	No Buffer	
	X					0

P Hazard Class:	**Medium**	**Total Index Points:**	**26.5**
Phosphorus Application Classification:		**N Based**	

Notes:

This evaluation has a Medium P hazard class and the nutrient application can be based on N.

Comments:

Crop	Crop N requirement	Crop P2O5 requirement	lbs DM or air dried produced per year	Data Reference (source)	Crop N Removal Rate	Crop P_2O_5 Removal Rate
Corn 50 - 70 bu H	70	80	3920		63	25
Corn 50 - 70 bu M	70	80	3920		63	25
Corn 50 - 70 bu VH	70	80	3920		63	25
Corn 50 - 70 bu VL - L	70	80	3920	in harvested material	63	25
Corn 71 - 90 bu H	90	80	5040		81	32
Corn 71 - 90 bu M	90	80	5040		81	32
Corn 71 - 90 bu VH	90	80	5040		81	32
Corn 71 - 90 bu VL - L	90	80	5040		81	32
Corn 91 - 110 bu H	120	105	6160		99	39
Corn 91 - 110 bu M	120	105	6160		99	39
Corn 91 - 110 bu VH	120	105	6160		99	39
Corn 91 - 110 bu VL - L	120	105	6160		99	39
Corn 111 - 130 bu H	144	105	7280		117	47
Corn 111 - 130 bu M	144	105	7280		117	47
Corn 111 - 130 bu VH	144	105	7280		117	47
Corn 111 - 130 bu VL - L	144	105	7280		117	47
Corn 131 - 150 bu H	164	105	8400		135	54
Corn 131 - 150 bu M	164	105	8400		135	54
Corn 131 - 150 bu VH	164	105	8400		135	54
Corn 131 - 150 bu VL - L	164	105	8400		135	54
Corn 151 - 170 bu H	180	130	9520		153	61
Corn 151 - 170 bu M	180	130	9520		153	61
Corn 151 - 170 bu VH	180	130	9520		153	61
Corn 151 - 170 bu VL - L	180	130	9520		153	61
Corn 171 - 190 bu H	210	130	10604		171	68
Corn 171 - 190 bu M	210	130	10604		171	68
Corn 171 - 190 bu VH	210	130	10604		171	68
Corn 171 - 190 bu VL - L	210	130	10604		171	68
Corn 191 - 210 bu H	250	130	11760		189	75
Corn 191 - 210 bu M	250	130	11760		189	75
Corn 191 - 210 bu VH	250	130	11760		189	75
Corn 191 - 210 bu VL - L	250	130	11760		189	75
Corn 211 - 230 bu H	280	130	12880		207	83
Corn 211 - 230 bu M	280	130	12880		207	83
Corn 211 - 230 bu VH	280	130	12880		207	83
Corn 211 - 230 bu VL - L	280	130	12880		207	83
Corn 231 - 250 bu H	300	130	14000		225	90
Corn 231 - 250 bu M	300	130	14000		225	90
Corn 231 - 250 bu VH	300	130	14000		225	90
Corn 231 - 250 bu VL - L	300	130	14000		225	90
Corn 250 - 275 bu H	325	130	15120		243	97
Corn 250 - 275 bu M	325	130	15120		243	97
Corn 250 - 275 bu VH	325	130	15120		243	97
Corn 250 - 275 bu VL - L	325	130	15120		243	97
Corn 276 - 300 bu H	350	130	16240		261	104
Corn 276 - 300 bu M	350	130	16240		261	104
Corn 276 - 300 bu VH	350	130	16240		261	104
Corn 276 - 300 bu VL - L	350	130	16240		261	104
Corn 301 - 350 bu H	375	130	17360		279	111
Corn 301 - 350 bu M	375	130	17360		279	111
Corn 301 - 350 bu VH	375	130	17360		279	111
Corn 301 - 350 bu VL - L	375	130	17360		279	111
Midland Bermuda 4000 # H	120	80	4000	used coastal	75	17
Midland Bermuda 4000 # M	120	80	4000		75	17
Midland Bermuda 4000 # VH	120	80	4000		75	17
Midland Bermuda 4000 # VL - L	120	80	4000		75	17
Midland Bermuda 6000 # H	150	105	6000		113	26
Midland Bermuda 6000 # M	150	105	6000		113	26
Midland Bermuda 6000 # VH	150	105	6000		113	26
Midland Bermuda 6000 # VL - L	150	105	6000		113	26
Midland Bermuda 8000 # H	200	105	8000		150	35
Midland Bermuda 8000 # M	200	105	8000		150	35
Midland Bermuda 8000 # VH	200	105	8000		150	35
Midland Bermuda 8000 # VL - L	200	105	8000		150	35
Rye Forage 5000 # H	140	55	5000	Used ryegrass	84	31
Rye Forage 5000 # M	140	55	5000		84	31
Rye Forage 5000 # VH	140	55	5000		84	31
Rye Forage 5000 # VL - L	140	55	5000		84	31
Rye Forage 7000 # H	240	80	7000		117	43
Rye Forage 7000 # M	240	80	7000		117	43

Rye Forage 7000 # VH	240	80	7000		117	43
Rye Forage 7000 # VL - L	240	80	7000		117	43
SG Silage(35% DM) 5 to 7 tons H	70	30	4900	Stephenville published values 1997-98	64	34
SG Silage(35% DM) 5 to 7 tons M	70	30	4900	Stephenville published values 1997-98	64	34
SG Silage(35% DM) 5 to 7 tons VH	70	30	4900	Stephenville published values 1997-98	64	34
SG Silage(35% DM) 5 to 7 tons VL - L	70	30	4900	Stephenville published values 1997-98	64	34
SG Silage(35% DM) 8 to 9 tons H	95	40	6300	Stephenville published values 1997-98	83	43
SG Silage(35% DM) 8 to 9 tons M	95	40	6300	Stephenville published values 1997-98	83	43
SG Silage(35% DM) 8 to 9 tons VH	95	40	6300	Stephenville published values 1997-98	83	43
SG Silage(35% DM) 8 to 9 tons VL - L	95	40	6300	Stephenville published values 1997-98	83	43
SG Silage(35% DM) 10 to 11 tons H	120	70	7700	Stephenville published values 1997-98	101	53
SG Silage(35% DM) 10 to 11 tons M	120	70	7700	Stephenville published values 1997-98	101	53
SG Silage(35% DM) 10 to 11 tons VH	120	70	7700	Stephenville published values 1997-98	101	53
SG Silage(35% DM) 10 to 11 tons VL - L	120	70	7700	Stephenville published values 1997-98	101	53
SG Silage(35% DM) 12 to 14 tons H	160	90	9800	Stephenville published values 1997-98	128	67
SG Silage(35% DM) 12 to 14 tons M	160	90	9800	Stephenville published values 1997-98	128	67
SG Silage(35% DM) 12 to 14 tons VH	160	90	9800	Stephenville published values 1997-98	128	67
SG Silage(35% DM) 12 to 14 tons VL - L	160	90	9800	Stephenville published values 1997-98	128	67
Silage - Corn(35% DM) 7 - 10 Ton H	85	60	7000	Stephenville published values 1997-98	79	38
Silage - Corn(35% DM) 7 - 10 Ton M	85	60	7000	Stephenville published values 1997-98	79	38
Silage - Corn(35% DM) 7 - 10 Ton VH	85	60	7000	Stephenville published values 1997-98	79	38
Silage - Corn(35% DM) 7 - 10 Ton VL - L	85	60	7000	Stephenville published values 1997-98	79	38
Silage - Corn(35% DM) 11 - 15 Ton H	140	80	10500	Stephenville published values 1997-98	119	58
Silage - Corn(35% DM) 11 - 15 Ton M	140	80	10500	Stephenville published values 1997-98	119	58
Silage - Corn(35% DM) 11 - 15 Ton VH	140	80	10500	Stephenville published values 1997-98	119	58
Silage - Corn(35% DM) 11 - 15 Ton VL - L	140	80	10500	Stephenville published values 1997-98	119	58
Silage - Corn(35% DM) 16 - 20 Ton H	240	100	14000	Stephenville published values 1997-98	183	77
Silage - Corn(35% DM) 16 - 20 Ton M	240	100	14000	Stephenville published values 1997-98	183	77
Silage - Corn(35% DM) 16 - 20 Ton VH	240	100	14000	Stephenville published values 1997-98	183	77
Silage - Corn(35% DM) 16 - 20 Ton VL - L	240	100	14000	Stephenville published values 1997-98	183	77
Silage - Corn(35% DM) 21 - 25 Ton H	350	105	17500	Stephenville published values 1997-98	263	96
Silage - Corn(35% DM) 21 - 25 Ton M	350	105	17500	Stephenville published values 1997-98	263	96
Silage - Corn(35% DM) 21 - 25 Ton VH	350	105	17500	Stephenville published values 1997-98	263	96
Silage - Corn(35% DM) 21 - 25 Ton VL - L	350	105	17500	Stephenville published values 1997-98	263	96
Silage - Corn(35% DM) 26 - 30 Ton H	420	135	21000	Stephenville published values 1997-98	315	115
Silage - Corn(35% DM) 26 - 30 Ton M	420	135	21000	Stephenville published values 1997-98	315	115
Silage - Corn(35% DM) 26 - 30 Ton VH	420	135	21000	Stephenville published values 1997-98	315	115
Silage - Corn(35% DM) 26 - 30 Ton VL - L	420	135	21000	Stephenville published values 1997-98	315	115
Silage - Sorg(35% DM) 11 - 15 Ton H	200	75	10500	2003 Bushland values	179	55
Silage - Sorg(35% DM) 11 - 15 Ton M	200	75	10500	2003 Bushland values	179	55
Silage - Sorg(35% DM) 11 - 15 Ton VH	200	75	10500	2003 Bushland values	179	55
Silage - Sorg(35% DM) 11 - 15 Ton VL - L	200	75	10500	2003 Bushland values	179	55
Silage - Sorg(35% DM) 16 - 20 Ton H	280	95	14000	2003 Bushland values	238	74
Silage - Sorg(35% DM) 16 - 20 Ton M	280	95	14000	2003 Bushland values	238	74
Silage - Sorg(35% DM) 16 - 20 Ton VH	280	95	14000	2003 Bushland values	238	74

Silage - Sorg(35% DM) 16 - 20 Ton VL - L	280	95	14000	2003 Bushland values	238	74
Silage - Sorg(35% DM) 21 - 25 Ton H	360	115	17500	2003 Bushland values	298	92
Silage - Sorg(35% DM) 21 - 25 Ton M	360	115	17500	2003 Bushland values	298	92
Silage - Sorg(35% DM) 21 - 25 Ton VH	360	115	17500	2003 Bushland values	298	92
Silage - Sorg(35% DM) 21 - 25 Ton VL - L	360	115	17500	2003 Bushland values	298	92
Silage - Sorg(35% DM) 26 - 30 Ton H	380	130	21000	2003 Bushland values	315	111
Silage - Sorg(35% DM) 26 - 30 Ton M	380	130	21000	2003 Bushland values	315	111
Silage - Sorg(35% DM) 26 - 30 Ton VH	380	130	21000	2003 Bushland values	315	111
Silage - Sorg(35% DM) 26 - 30 Ton VL - L	380	130	21000	2003 Bushland values	315	111
Wheat Forage 2000 # H	60	80	2000	Used ryegrass	33	12
Wheat Forage 2000 # M	60	80	2000		33	12
Wheat Forage 2000 # VH	60	80	2000		33	12
Wheat Forage 2000 # VL - L	60	80	2000		33	12
Wheat Forage 4000 # H	160	105	4000		67	25
Wheat Forage 4000 # M	160	105	4000		67	25
Wheat Forage 4000 # VH	160	105	4000		67	25
Wheat Forage 4000 # VL - L	160	105	4000		67	25
Wheat Forage 6000 # H	240	105	6000		100	37
Wheat Forage 6000 # M	240	105	6000		100	37
Wheat Forage 6000 # VH	240	105	6000		100	37
Wheat Forage 6000 # VL - L	240	105	6000		100	37