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**Site Planning Worksheet for Livestock Facilities**  
*Originally developed by the Alameda County Resource Conservation District  
Edited for the Livestock and Land Program*



**General Property Description**

Location (Address): \_\_\_\_\_

Watershed: \_\_\_\_\_

Number of acres: \_\_\_\_\_

Number and type of livestock: \_\_\_\_\_

\_\_\_\_\_

Plans for future livestock: \_\_\_\_\_

\_\_\_\_\_

How long have you lived on the property? \_\_\_\_\_

How long have you had livestock on the property? \_\_\_\_\_

Has the property historically housed livestock? Explain. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Do you have a site plan map? \_\_\_\_\_

Describe your property: \_\_\_\_\_

A. Slope: \_\_\_\_\_

\_\_\_\_\_

B. Soil Type(s): \_\_\_\_\_

C. Waterways (streams, ponds, creeks, drainage ditches etc.) on or adjacent to your property – Please note if they have seasonal or year round flow:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

D. Are the above identified on your site plan map? \_\_\_\_\_

E. Number of and Size/Dimensions of:

a. Pastures \_\_\_\_\_

b. Pens \_\_\_\_\_

c. Paddocks \_\_\_\_\_

d. Stalls \_\_\_\_\_

e. Arenas \_\_\_\_\_

f. Wash areas \_\_\_\_\_

F. Are the above identified on your site plan map? \_\_\_\_\_

G. Do you have an identified manure storage area? \_\_\_\_\_

H. Is it identified on your site plan map? \_\_\_\_\_

I. Do you have a manure management plan? (If so, attach a copy to this document.)

\_\_\_\_\_

J. Do you have a dust management strategy? Please describe. \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

K. Do you have a mud management strategy? Please describe. \_\_\_\_\_

\_\_\_\_\_

L. Is all the water leaving your property clean? If no, explain. \_\_\_\_\_

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**OBJECTIVE 1: Manage stockpiled, accumulated, spread or stored manure in a manner that protects water quality of local waterways, bodies of water or groundwater.**

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*Things to remember:*



Keep surface runoff (stormwater) away from manure storage areas; divert clean water away from manured areas.



Keep manure storage areas away from drainages and water bodies.



Keep drainage from manure from percolating down into soil – especially in areas where groundwater protection is a priority.



Cover manure.



Make access to storage areas convenient, size them adequately and have a contingency plan for when waste volume exceeds capacity.

### Manure Storage Areas

1. What is the volume of manure produced on site on a daily, weekly or monthly basis?\*

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\*If you are unsure, perhaps this formula will be of assistance. The average 1000 lb horse produces 45 lbs of manure/day. Spatially that equates to approximately .75 cubic feet/day. To arrive at a monthly total multiply the number of horses you have by 45 then multiply your result by 30 days. This will give you total pounds of manure for one month. Finally multiply the number of horses you have by .75 cubic feet/day then multiply that result by 30 to get total cubic feet/month. To get total cubic yards you would divide that number by 27. For example: If you have 3 horses,  $3 \times 45 \times 30 = 4050$  lbs/month/3 horses.  $3 \times .75 \times 30 = 67.5$  cubic feet/month.  $67.5 \div 27 = 2.5$  cubic yards/month/3 horses.

$$\# \text{ of Horses} \times 45 \times 30 = \text{Lbs of manure/month}$$

$$\# \text{ of Horses} \times .75 \times 30 \div 27 = \text{Cubic yards of manure/month}$$

2. What is the volume of bedding produced on site on a daily, weekly or monthly basis?\*\*\*

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\*\*\* If you are unsure, perhaps this formula will be of assistance. The average bedding usage is 1 cubic foot/day/horse. To calculate your bedding usage of one month multiply the number of horses you have by 30 days. This will give you cubic feet of bedding/month/# of horses. Divide that number by 27 to get cubic yards. For example: If you have 3 horses,  $3 \times 1 \times 30 = 90$  cubic feet/month/3 horses.  $90 \div 27 = 3.33$  cubic yards/month/3 horses.

$$\# \text{ of Horses} \times 30 \div 27 = \text{Cubic yards of bedding/month}$$

3. What is the total volume of waste generated (Manure + Bedding) on a daily, weekly or monthly basis? \*\*\*

\_\_\_\_\_

\*\*\* In the scenario above the total waste generated for 3 horses is 2.5 cubic yards/month of manure + 3.3 cubic yards/month of bedding = 5.8 cubic yards/month of waste/3 horses.

Answer 1 + Answer 2 = Total volume of waste/month

4. How often are the following areas cleaned:

Stalls \_\_\_\_\_

Paddocks, corrals and/or turnouts \_\_\_\_\_

5. What is the storage capacity of your manure storage area(s) (in cubic feet or yards)?

\_\_\_\_\_

6. How many days, weeks or months worth of manure can the storage area contain?

\_\_\_\_\_

7. How frequently will you need to empty out the storage area(s)?

\_\_\_\_\_

8. Do you or will you use sealed containers (dumpsters or steel container/drop box) to store your manure and spent shavings until they are hauled off site?

No – Skip to question 9

Yes - Please answer A – E below

A. What type of containers? \_\_\_\_\_

B. What is the capacity? \_\_\_\_\_

C. How frequently are they emptied? \_\_\_\_\_

D. Who is the hauler/service provider? \_\_\_\_\_

E. Is there all-weather access?

Yes

No - Describe your contingency plan for

loss of access due to weather, or to other causes (hauler unavailable)

\_\_\_\_\_

\_\_\_\_\_

9. Do you or will you stockpile manure and spent bedding in a constructed storage area (manure bunker) or in open piles on the ground?

No – Skip to question 10

Yes – Please answer A – T below

A. Describe the size (length, width and height) and the capacity (in cubic yards) \_\_\_\_\_

\_\_\_\_\_

B. Are the bunkers or piles area covered by a roof? If so what are the dimensions? \_\_\_\_\_

\_\_\_\_\_

C. Does the roof drain water away from the storage area? \_\_\_\_\_

D. If not roof, is a temporary cover (tarp) available for use when the pile is saturated? \_\_\_\_\_

\_\_\_\_\_

E. Is the storage area located on an impervious (water can't drain through it) surface?

Yes – Skip to question J

No – Please answer F – T

F. How deep is the water table under or near the pile? \_\_\_\_\_

G. Is groundwater protection a concern in the area? \_\_\_\_\_

\_\_\_\_\_

H. What is the soil type and depth under or near the pile? \_\_\_\_\_

\_\_\_\_\_

I. Measures to manage manure runoff so it will not leach downward into the soil and groundwater?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

J. Is surface runoff or runoff from slopes above storage area diverted around or drained away from the storage area in a non-erosive manner? Describe \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

K. Where does this water drain? How does it get there? (drainage ditches, pipes etc)

\_\_\_\_\_

\_\_\_\_\_

L. What best describes the topography where your manure is stored?

Flat or nearly flat land (slope less than 3%)

Slightly sloping (slope 3% - 5%)

Moderately sloping (slope 6% - 10%)

Steep slope (above 10%)

M. Is there year round (all weather) access to the storage area?

Yes – Describe \_\_\_\_\_

No – Describe your contingency plan for periods without access? (Where else can you store it? Do you have a backup hauling plan? \_\_\_\_\_

N. Is your manure storage area located near or connected to a drainage way, spring, pond, creek or other waterbody?

No – Skip to R       Yes – Please answer O – T

O. How far is the nearest waterway/waterbody? \_\_\_\_\_

P. Is there a grass or vegetated filter strip between the storage area and the water? \_\_\_\_\_

Q. Describe different slope, soil and vegetation conditions between the storage area and the water.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

R. How often, when and how will you empty the storage area? Do you have the necessary equipment?

\_\_\_\_\_  
\_\_\_\_\_

S. Where do you take the manure/bedding when the storage area is emptied? \_\_\_\_\_

\_\_\_\_\_

T. Describe contingency plan for the storage area if for any reason you exceed its capacity.

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10. Please list other manure stockpiling/storage plans not identified above.

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11. Do you plan to spread manure on site?

No – Skip to question 12

Yes – Please answer A – M below

A. Will it be spread raw or will it be aged/composted? \_\_\_\_\_

B. Describe the location, frequency and method of spreading. \_\_\_\_\_

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C. Is the manure being spread as fertilizer or soil conditioner or both? \_\_\_\_\_

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D. Will it be disked in? \_\_\_\_\_

E. What equipment is available to do this work? \_\_\_\_\_

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F. What type of vegetation is present where manure is to be spread? \_\_\_\_\_

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G. How many years have you been spreading manure in the same location? \_\_\_\_\_

\_\_\_\_\_

H. Describe your contingency plan if your storage capacity is exceeded before manure can be spread.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

I. Is the area where you spread manure identified on your site map? \_\_\_\_\_

J. Is there a vegetative buffer strip or grass filter strip between spreading area and drainage ways, wells or water bodies to trap pollutants?

No – Needs to be addressed

Yes – Please answer K – M below

K. How wide is/are the strip(s)? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

L. Is/Are they identified on the site map? \_\_\_\_\_

M. What is the slope, soil and vegetation condition in the filter strip? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

12. Are horses maintained in open air (unroofed/uncovered) areas such as stalls, paddocks, turnouts, corrals, pipe pens, arenas etc.?

No – Skip to Objective 2

Yes – Please answer A – P below

A. How often are paddocks, corrals, arenas etc. cleaned? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

B. How are they cleaned? What equipment do you use? \_\_\_\_\_

\_\_\_\_\_



C. What is the approximate slope of confinement areas? \_\_\_\_\_

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D. Is there surfacing material applied to these areas? What kind in each area? \_\_\_\_\_

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E. Is there adequate drainage in these confinement areas, or does water puddle or pond during and after storms?

Yes – Drainage is adequate (No ponding or puddling)

No – Drainage is inadequate (Have ponding or puddling)

F. Does water run through or into confinement areas from adjacent hillsides, adjacent roofs or other adjacent water sources?

No

Yes – Identify the sources

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G. Can this excess water be diverted away fro the confinement areas?

No

Yes – Describe how

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H. Describe measures to prevent puddling or ponding of water in confinement areas.

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I. Does water run off the confinement areas?

No

Yes

J. Does water drain to a drainage way, seasonal waterway or year round waterway?

No – Skip to Objective 2

Yes – Please answer following questions

K. How far is the confinement area from the drainage way, creek, stream, pond or other waterbody?

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L. Is there a grass filter strip between the confinement area and drainage way to trap manure and soil particles?

No – Skip to P

Yes

M. How wide is the filter strip?

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N. Is it shown on your site plan map?

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O. What is the slope, soil and vegetation condition in the filter strip?

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P. Describe measures to prevent manure and soil particles from confinement areas from draining into waterways.

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**OBJECTIVE 2: Keep waste waters from horse facilities out of drainage ways, storm drains, other bodies of water and ground water.**

Things to remember:



Keep clean water clean. Do not mix with waste water.



Minimize the volume of wastewater produced.



Drain waste water into septic systems, sewer systems or vegetated filter strips for treatment.

Do not discharge waste water directly into storm drains, drainages, creeks, ponds etc.

### Horse Wash Areas

1. Do you have designated horse wash areas at your facility?

No – Skip to Stall Cleaning

Yes – Please answer A – G below

A. Is the horse wash facility at your site located near a drainage way, creek or pond?

No

Yes – How close? \_\_\_\_\_

B. Does the wash area have a hard surface with a drain?

No

Yes

C. Where does the wash water drain? \_\_\_\_\_

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D. Is the wash water “treated” (discharged into a filter strip, settling pond etc.) on site?

No

Yes – How? \_\_\_\_\_

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E. Is the wash water discharged to a grass filter strip?

No

Yes

F. Describe the soil, slope and vegetation in the filter strip. \_\_\_\_\_

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G. Are the wash area, drainage and filter strips shown on your site plan map?

No – Needs to be addressed

Yes

## Stall Cleaning

1. Do you have indoor stalls with solid flooring, not soil or other permeable surface material?

No – Skip to Roof Drainage

Yes – Please answer A – D

A. Do you wash out your stalls with water containing soap or other chemicals?

No

Yes

B. Where does the wash water drain? \_\_\_\_\_

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C. What is the plan for treating the dirty water? \_\_\_\_\_

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D. How often and for what reasons is stall washing done? \_\_\_\_\_

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## Roof Drainage

\* Note: There is approximately 7.5 gallons of water in a cubic foot. Therefore 100 square feet (10 foot x 10 foot) of impervious area, such as a roof, will capture/yield approximately 62.5 gallons of rainwater with each inch of rainfall. This statistic may prove helpful in evaluating your current runoff management from barn and stall roofs.

1. Do you have gutters and downspouts on your barns, stalls and paddock roofs?

No

All

Some

2. Do the downspouts tie into a drainage system that keeps the clean water away from manure, urine or bare ground?

No

All

Some

3. Where do the gutters outlet? \_\_\_\_\_

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4. If you do not have gutters, how is the clean water kept out of the areas with manure, urine or bare ground?

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### Property Drainage

1. Do you have drainage systems installed on your property (other than roof drains)?

No

Yes

2. Do you have a backup plan in case of a system failure? Explain. \_\_\_\_\_

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3. Is your entire drainage system identified on your site plan map?

No

Yes

4. Do all of the drainageways that carry contaminated water outlet into a filter area? Explain

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5. Do you combine your 'clean' and dirty water into the same outlet area? Explain

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**OBJECTIVE 3: Keep grazing livestock from overgrazing (denuding) pastures, eroding creek banks and damaging riparian (streamside) vegetation.**

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Things to remember:

-  Maintain a minimum height of 4 inches of grass on pastures (can be dry grass at the end of the season) to protect soil from erosion and to maintain plant vigor.
-  Fence livestock out of creeks and ponds when possible; provide other sources of drinking water.
-  Practice rotational grazing; divide up pastures and move livestock from one to another to allow pastures to rest and recover.
-  Confine livestock in paddocks when pastures are wet or when forage is no longer available in pastures. Keep livestock out of the pastures during wet months.
-  Develop water sources to attract livestock to remote portions of pastures.
-  Manage weeds.

\* Note: In this worksheet “Pastures” are considered to be areas where grass is grown for forage for livestock and maintained to prevent erosion; pastures are distinguishable from “Paddocks” in that paddocks are smaller in size and are considered confinement areas with little to no vegetative cover.

1. Does livestock graze in pastures located on your property?

No       Yes

2. Do you have livestock that are kept in pastures full time that do not have access to stalls or a paddock?

**No – Skip to question 3**       Yes – Please answer A – B below

A. How many? \_\_\_\_\_

B. What is the size of the pastures? \_\_\_\_\_

\_\_\_\_\_

3. Does the livestock have direct, unlimited access to drainage ways, stream channels or ponds?

Yes       No – Please explain \_\_\_\_\_

\_\_\_\_\_

4. Do you have more than one pasture?

No       Yes

A. Do you practice rotational grazing?

No       Yes

B. Do you irrigate any of your pastures?

No

Yes

5. Is the livestock moved from the pastures when necessary to protect the pastures from erosion and damage to the grass? (i.e. when the soil is saturated or when they have grazed it to 4 inches or lower).

No

Yes

6. Do you confine our livestock to paddocks or turnout areas in order to protect the pastures from excessive trampling or compaction?

No

Yes

7. Please list any additional measures or practices you employ to protect your pastures from overgrazing and/or erosion?

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8. Do you manage your pastures to limit or control weeds?

No

Yes – Please Explain

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