

**Ecology Action** PO Box 1188 Santa Cruz, CA 95061 831.426.5925 livestockandland@ecoact.org www.ecoact.org

San Benito RCD 2337 Technology Parkway, Suite C Hollister, CA 95023 831.637.4360 x101 livestockandland@rcdsanbenito.org www.rcdsanbenito.org

www.livestockandland.org

Healthy Management of Land and Livestock

# Water Quality Site Evaluation & Plan for Horse and Livestock Facilities Self-Assessment Worksheet

Originally developed by the Alameda County Resource Conservation District Edited for the Livestock and Land Program by Ecology Action

### GENERAL PROPERTY DESCRIPTION

Watershed:		
Nearest Creek (nam	e):	
Distance from prop	erty line:	
Name/Ranch:	Date:	
Street Address:		
City:	_ State: Zip Code:	
Total number of acres:	Livest	
	-7 F	10041
Number of years at property:		
Number of years at property:  Number of years livestock present		

Does the property allow for additional livestock? (circle one)	Yes	No
Has the property historically housed livestock? (circle one)	Yes	No
If yes, describe:		
Do you have a site map? (circle one)  (If No, please draw or print a site map)	Yes	No
Describe your property:		
A. What best describes the general/overall slope of your pro-	roperty	?
Flat or nearly flat land (slope less than 3%)		
Slightly sloping (slope 3% - 5%)		
Moderately sloping (slope 6% - 10%)		
Steep slope (above 10%)		
B. Soil Type(s):		
☐ Fine Sand ☐ Very Fine Sand ☐ Loamy S		
☐ Sandy Loam ☐ Very Fine Sandy Loam ☐ Silt Lo ☐ Clay Loam ☐ Silty Clay Loam ☐ Silty C		
☐ Cray Loam ☐ Silty Cray Loam ☐ Silty C	лау	
C. Waterways (streams, ponds, storm drains, drainage ditche or adjacent to your property - Please note if they have year round flow and distances from property line:		
D. Are the above identified on your site map? (circle one) (If No, please include on your site map) Useful Tip: Include known or estimated distances on map	Yes	No

E. I	Number	of	and	Size	/Dimensions	of:
------	--------	----	-----	------	-------------	-----

Total #

				(if applicable)	(if applicab	le)	
	a. Pastures						
	b. Corrals / Turnouts						
	c. Paddocks						
	d. Stalls						
	e. Arenas						
	f. Wash areas						
F.	Are the above i (If No, please Useful Tip: Ou	include or	n your site m	nap.)	ne) Y	es	No
G.	Do you have an	identifie	d manure stor	rage area? (cir	ccle one) Y	es	No
	a. Is it iden (If No, pl		your site ma de on your s	=	Y	es	No
н.	Do you have a m		_		Y	es	No
I.	Do you have a d	ust manago	ement strateg	y? (circle one)	Y	es	No
	Please describe	: •					

Dimension

Dimension

Dimension

Technical	Assistance	Dogumenta	/Pafarancac
Tecimitcat	ASSIStance	DOCUMENTS	References

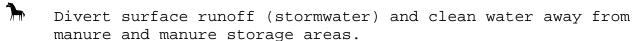
- http://www.livestockandland.org/Publications\_and\_Links/index.html
- · Conservation Measures to Reduce Non-Point Source Pollution at Horse Facilities
- · Conservation Practices for Horse Owners
- · Horse Paddocks: Designed and Managed to Protect Water Quality
- · Fall in Place: A Checklist for Preparing Your Horse Property for Winter
- 20 Things Every New Horse Owner Should Know

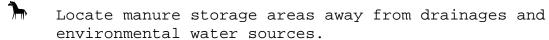
Identified items to be addressed/corrected:
Landowner management goals for property and natural resources:
Short term goals
Long term goals

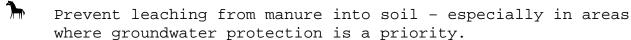
### **MANURE**

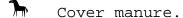
OBJECTIVE 1: Manage stockpiled, accumulated, spread or stored manure to reduce/eliminate potential pollutants to local watersheds, surface water or groundwater.

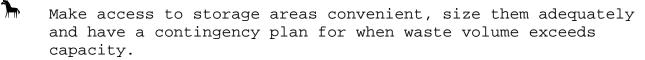
Things to remember:











#### Manure Storage Areas

1. What is the calculated **volume of manure** in pounds  $\underline{AND}$  cubic yards produced on site on a monthly basis?

# of Horses x 45 x 30 = Lbs of manure/month

# of Horses x 0.75 x 30  $\div$  27 = Cubic yards of manure/month

C. Actual (if known):

Note: The average 1000 lb horse produces approximately 45 lbs of manure/day. Spatially that equates to approximately 0.75 cubic feet/day.

weekly or monthly basis?**
Calculated: A. Cubic Yards: x 30 days/month ÷ 27 ft/yrd³ = yrd³/month  # of horses  ANSWER #2
# of Horses $\times$ 30 ÷ 27 = Cubic yards of bedding/month
B. Actual (if known):
Cubic Yards: yrd³/month
Note: The average bedding usage is 1 cubic foot/day/horse.
3. What is the calculated <b>total volume of waste</b> generated Manure (Answer #1) and Bedding (Answer #2) on a monthly basis?
<pre>Calculated: A yrd³/month Manure + yrd³/month Bedding = yrd³/month ANSWER#1 ANSWER#2</pre>
Total volume Manure(Answer 1) + Total Volume Bedding (Answer 2) =  Total volume of waste/month
B. Actual (if known):
Cubic Yards: yrd³/month
4. How often are the following areas cleaned:
Stalls:
2x Daily Daily Weekly Other:
Paddocks, corrals and/or turnouts:
Daily
5. What is the capacity of your manure storage area(s)in cubic feet? ft <sup>3</sup>
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)?

2. What is the calculated volume of bedding produced on site on a daily,

<pre>drop boxes to store yo off site?</pre>	ur manure and s	spent shaving	s until they	are hauled
☐ No - Skip to q	uestion 9	Yes -	Please answer	2 A - E
A. Type of containers:				
B. Container capacity:				
C. Frequency of removal	l:			
Weekly 2x T	Weekly Mont	hly Other	:	
D. Name of Hauler/Serv	ice Provider: _			
E. Is there all-weather		Yes No		
If yes, describe aco If no, describe you		lan for loss	of aggoss due	o to
weather, or to other				: 20
9. Is manure and spent be	dding stockpile	ed?		
No - Skip to qu	uestion 10	Yes - I	lease answer	A - S
C. Stockpile Area Spec	ifications:			
Area 1		Area 2 (if a	pplicable)	,
Length:ft Height	:ft	Length:	_ft Height:	ft
Width:ft Capaci	ty: yrd³	Width:f	ct Capacity:_	yrd³
D. Is the storage area	covered by a r	roof? Yes(ar	nswer below)	NO(skip to D)
E. Does the roof drain i.e. Roof run-off doe			l l	e No

8. Do you or will you use dumpsters or other waste hauler containers or

G. Is the storage area located on an impermeable surface (i.e. concrete, engineered lined surface)?
Yes - Skip to question J No - Please answer F - I
H. How deep is the water table under or near the pile?
I. Is groundwater protection a concern in the area?
J. What is the soil type and depth under or near the pile ?
Soil Type:
Soil Depth:ft
K. How will you ensure that pollutants will not leach downward into the soil and groundwater?
L. Is runoff near storage area diverted around or drained away from the area in a non-erosive manner? Describe
M. Where and what does this water drain into? How does it get there?  (drainage ditches, pipes etc)  ———————————————————————————————————
N. What best describes the area 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%)

0.	Is your manure storage area located near a drainage way, spring, pond, creek or other waterbody?
	☐ No - Skip to Q ☐ Yes - Please answer N - Q
Р.	How far is the nearest natural water source?
Q.	Is there a vegetated filter strip between the storage area and the water?  Yes No
R.	Describe different slope, soil and vegetation conditions between the storage area and the water.
S.	What, When, Where and How of managing storage area:
	Frequency of removal:
	Weekly Monthly Every Months Other:
	When:  Full Compost Completed Hauler Scheduled  Other:
	Material removed from area via:
	Is necessary Equipment Available? Yes No
Т.	Where is manure/bedding taken when the storage area is emptied?
U.	Describe contingency plan(s) for storage area if you exceed capacity.

IO. Lis	t other manure stockpiling/storage plans not identified above:
1 Do 11	ou plan to spread manure on site?
т. во у	No - Skip to question 12 Yes - Please answer A - L
	NO - Skip to question 12
A. How	will it be spread? Raw Aged Composted Other:
B. Spr	eading:
	Location(s):
	Frequency:
	Daily Weekly Monthly Other:
	Method:
C. Man	ure spread as: Fertilizer Soil Conditioner Both
D. Wil	l it be disked in? Yes No
Е. Тур	e of vegetation present where manure is to be spread:
F. Num	ber of years manure has been spread in same location:
	cribe contingency plan if your storage capacity is exceeded before ure can be spread.
	manure spreading areas identified on site map? (circle one) Yes No No, please include on your site map)
(	No, preade include on your sice map,

s	_	fer strip or grass filter strip bege ways, wells or water bodies to	
	No - Needs to be add	ressed Yes - Please answer	J - L
Ј. Н	Now wide is/are the strip	(s)?	
	are they identified on th If No, please include on		No
L. F	'ilter Strip Condition:		
	Slope:%		
	Soil Type:		
	Vegetation Condition	in Filter Strip:	
tu	rnouts, corrals, pipe per  No - Skip to questio	ns, arenas etc.? n 13 Yes - Please answer	A - J
А. Н	low often are paddocks, c	orrals, arenas etc. cleaned?	
А. Н		orrals, arenas etc. cleaned?  Weekly Other:	
		Weekly Other:	
	2x Daily Daily	Weekly Other:	
в. н -	2x Daily Daily	Weekly Other:at equipment do you use?	
B. H - - C. A	2x Daily Daily  Now are they cleaned? Wh	Weekly Other:at equipment do you use?	No No
B. H — — C. A D. I	2x Daily Daily  Now are they cleaned? Wh	Weekly Other:at equipment do you use?	No
B. H — — C. A D. I	2x Daily Daily  Now are they cleaned? Wh  Approximate slope of confirs there surfacing materi	Weekly Other:at equipment do you use?	No
B. H — — C. A D. I	2x Daily Daily  Now are they cleaned? When the supproximate slope of confinence surfacing material what kind in each area?	Weekly Other:	No
B. H — — C. A D. I	2x Daily Daily  Now are they cleaned? When the supproximate slope of confinence surfacing material what kind in each area?	Weekly Other:	No
B. H — — C. A D. I	2x Daily Daily  Now are they cleaned? When the supproximate slope of confinence surfacing material what kind in each area?	Weekly Other:	No

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					
F. Does water run through or into confinement areas from adjacent hillsides, adjacent roofs or other adjacent water sources?					
No Yes - Identify the sources					
G. Can this excess water be diverted away from the confinement areas?					
No Yes - Describe how					
H. Describe measures implemented to prevent puddling or ponding of water in confinement areas.					
I. Does water run off the confinement areas? Yes No					
J. Does water drain to a drainage way, seasonal waterway or year round waterway?					
☐ No - Skip to question 13 ☐ Yes - Please answer K - P					
K. How far is the confinement area from the drainage way, creek, stream, pond or other waterbody?					
L. Is there a grass filter strip between the confinement area and drainage way to trap manure and soil particles?					

M. How wide is the filter strip?		
N. Is it shown on your site map? (circle one) (If No, please include on your site map)	Yes	No
O. Filter Strip Condition:		
Slope:%		
Soil Type:		
Vegetation Condition in Filter Strip:		
P. Describe measures implemented to prevent confinemen soil particles from draining into waterways.	t area manur	e and
13. Which best describes your overall current manure man	agement:	
☐ Infrequent Removal, No cover on pervious surface ☐ Removed 2 times/week, Tarp cover on a pervious sur ☐ Removed 2 times/week, No cover on impervious sur ☐ Removed every other day, Tarp cover on impervious ☐ Removed 1 time/day, Permanent roof on a pervious ☐ Removed more than 1 time/day, Permanent roof on : ☐ Other, describe below:	face s surface surface	urface

### Technical Assistance Documents/References:

- https://www.livestockandland.org/resources/
- Composting Horse Manure
- 5 Easy Steps to Compost
- Horse Manure Management
- Using Manure in the Garden
- 5 Great Ways to Conquer Mount Manure

Identified items to be addressed/corrected:
Site improvement/development goals:
Identified changes/recommendations to management practices:

# DRAINAGE

_	waste water from horse facilities out of drainage areas, drains, surface water and ground water.
Things to remember	:
<ul><li>Minimize</li><li>Drain wa</li><li>and desi</li><li>Do not d</li></ul>	an water clean. Do not mix with waste water.  the volume of waste water generated.  ste water into septic systems, sewer systems or designed gnated vegetated filter strips for treatment.  ischarge waste water directly into storm drains, s, creeks, ponds etc.
Horse Wash Areas	
	gnated horse wash areas at your facility?  p to next section
creek or pond  No  B. Does the wash  No  C. Where does th  D. Is the wash w	wash facility at your site located near a drainage way, ?  Yes - Approximate distance:  area have a hard surface with a drain?  Yes  e wash water drain into?  ater "treated" (discharged into a grass filter strip, etc.) on site?  Yes - How?

	F.	Are the wash area, drainage and filter strips identified on your site map? (circle one) (If No, please include on your site map)	Yes	No
St	all	Cleaning		
1.		you have indoor stalls with impermeable solid flooring her permeable surface materials)?	ງ (not soi]	l or
		No - Skip to next section Yes - Please as	nswer A -	D
	Α.	Do you wash out your stalls with water containing soap chemicals?	or other	
		Yes No		
	в.	Where does the wash water drain?		
	C.	Is there a plan for treating the dirty water? Yes  If so, please describe:	No	
		II bo, preabe deberrae		
	D.	List the frequency of and reason for stall washing:		
		Frequency of cleaning:		
		Daily Weekly Monthly Other:		
		Reason(s) for stall washing:		
Ro	of	Drainage		
*	imp	te: There is approximately 7.5 gallons of water in a cubic foot. Therefore 100 square feet bervious area, such as a roof, will capture/yield approximately 62.5 gallons of rainwater wis statistic may prove helpful in evaluating your current runoff management from barn and	th each inch of r	
1.		you have gutters and down spouts on <u>all</u> rn, stall and paddock roofs?	Yes	No

2.	Do the down spouts tie into a drainage system that keeps the clean water away from potential contaminants such as manure, urine or bare ground?  Yes No
3.	Where do the gutters outlet?
4.	If you do not have gutters, how is clean water kept out of potential contaminated areas (areas with manure, urine or bare ground)?
5.	Stable/Covered stalls or roofed areas:
	Area:ft $^2$
Pr	operty Drainage
1.	Do you have drainage systems installed on your property? Yes No
2.	Do you have a backup plan in case of a system failure? Explain.
3.	Is entire drainage system identified on your site map? (circle one)  (If No, please include on your site map)
4.	Does the drainage that carries effluent water outlet into a filter area?  Yes No
	Explain:

5.	Do you combine your clean and dirty/soiled water into the same outlet area?	Yes	No
	Explain:		
Pá	addock / Hardened Turnout Areas and Pens		
1.	. Area:ft²		
2.	. Soil type		
	☐ Fine Sand ☐ Very Fine Sand ☐ Very Fine Sand ☐ Very Fine Sandy Loam ☐ Clay Loam ☐ Silty Clay Loam ☐ Compacted Base	☐ Silt Loam	
3.	Organic Matter		
	□ <0.5% □ 2% □ 4%		
4.	. Slope:%		
5.	Type of cover:		
	□ None □ Native Vegetation □ G	raccec	

m1 '		7	D = ==================================	/D - £
recnnı	caı <i>ı</i>	ASSISTANCE	Documents	/References:

- https://www.livestockandland.org/resources/
- · Conservation Practices for Horse Owners
- · Conservation Measures to Reduce Non-Point Source Pollution at Horse Facilities
- ${}^{\raisebox{3.5pt}{\text{\circle*{1.5}}}}$  Stormwater Runoff Management at High Use Areas

Identified items to be addressed/corrected:
Site improvement/development goals:
Identified changes/recommendations to management practices:

## **PASTURES**

OBJECTIVE	3: Prevent grazing livestock from overgrazing pastures, eroding creek banks and damaging riparian (streamside) vegetation.					
Things to remember:						
	Maintain a minimum height of four (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 out livestock from 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.					
forage for "Pac	* 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. Area: _	ft²					
2. Soil ty	<i>yp</i> e					
☐ Sandy	☐ Fine Sand ☐ Very Fine Sand ☐ Loamy Sand ☐ Sandy Loam ☐ Very Fine Sandy Loam ☐ Silt Loam ☐ Clay Loam ☐ Silty Clay Loam ☐ Silty Clay ☐ Compacted Base					
3. Organio	3. Organic Matter					
☐ <0.5 <sup>9</sup>	3 28 48					
4. Slope:						
5. Type of	f cover:					
□ None	$\square$ Native Vegetation $\square$ Grasses					
6. Do live	. Do livestock graze in pastures located on your property? No Yes					

	o you board livestock kept in pastures full time that do not have ccess to stalls or a paddock?
	No - Skip to question 3 Yes - Please answer A - B
A	. How many?
В	. What is the size of the pastures?
	oes the livestock have direct, unlimited ccess to drainage ways, stream channels or ponds? No Yes
I	f no, please explain:
_	
9. D	o you have more than one pasture?
	A. Do you practice rotational grazing?
	B. Do you irrigate any of your pastures?
10.	Are livestock moved away from pastures, when necessary, to protect pastures from erosion and damage to the grass? (i.e. when the soil is saturated or when they have grazed it to four (4) inches or lower)  No  Yes
11.	Do you confine livestock to paddocks or turnout areas in order to protect the pastures from excessive trampling or compaction? No Yes
12.	Which best describes current condition of exclusionary fencing:  \[ \begin{align*} \text{No fencing} \\ \text{Exclusion w/fenced stock crossing in water} \\ \text{Fenced buffer to water way: 10' or less} \\ \text{Fenced buffer to water way: >30' buffer} \\ \text{Exclusion w/fenced stock crossing over culvert} \\ \text{No access to water: >50' setback / buffer} \\ \text{Other, describe below:} \end{align*}

13.	Please list any additional measures or practices you employ to protect your pastures from overgrazing and/or erosion?	
-		_
-		-
14.	Do you manage your pastures to limit or control weeds? No Yes	s
-	If yes, please explain:	
-		
_		
15.	Which best describes current conditions of pastures:	
	$\square$ No vegetation and no drainage controls	
	$\square$ Drainage controls with no vegetation	
	☐ Patchy/Sparse vegetation with no drainage controls	
	☐ Vegetation with no drainage controls	
	☐ Patchy/Sparse vegetation with proper drainage controls	
	$\square$ Significant vegetation year round and proper drainage controls $\square$ Other, describe:	

Technical	Assistance	Documents	References:
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- https://www.livestockandland.org/resources/
- Dryland Pasture for Horses
- Pasture Management
- Five Keys to Better Pastures
- · Creating and Using a Sacrifice Area for Horses
- Natural Solutions for Fertilizers, Weed Control and Pest Control

Identified items to be addressed/corrected:
Site improvement/development goals:
Identified changes/recommendations to management practices: