

Double T Ranch 8325

LCA Architects

HORSE MANURE MANAGEMENT PLAN

Purpose of this Guide

Good manure management helps to minimize environmental impact from horses. Furthermore, the plan helps protect water quality, reduce odors and insects.

Horse manure production

Total of horses:

48 Horses

Quantity:

The average horse passes manure anywhere from 4 to 12+ times a day.

The average horse (1,000-pound horse) produces 35 to 50 pounds of wet manure (feces plus urine) per day. Over the course of a year, horse can generate 8-10 tons of manure a year, accumulating at the rate of approximately 0.75 cubic feet per day. This equates to roughly 12-15 cubic yards of manure annually.

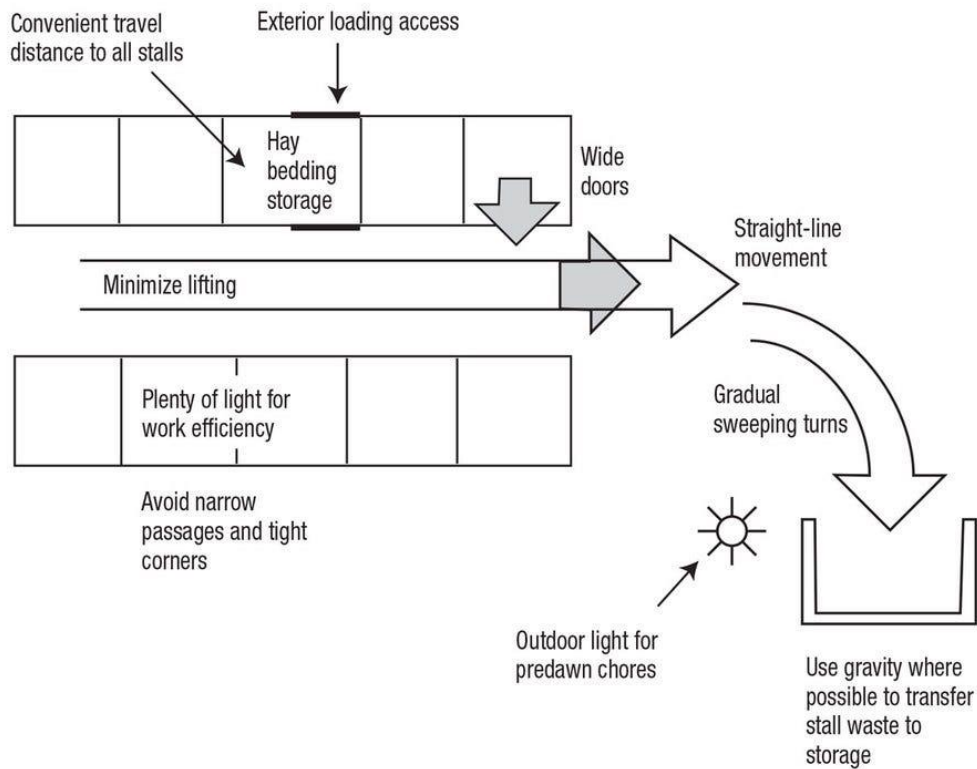
48 Horses: Over 400 tons of manure per year.

Manure management plan

The manure management plan involves manure handling, temporary storage, and off-side disposal.

1. Manure handling

To increase worker efficiency, provide plenty of stall light, minimize lifting, and make the temporary manure stockpile area easily accessible from all areas of the stable.



Stalls are cleaned daily, and manure temporarily stockpiled in an accessible area near the barn. Workers will temporarily stockpile manure in a manure dumpster. Once the temporary storage is filled, the stockpile will be removed from the stable site.

2. Temporary Storage of Manure

Horse manure stockpiles should be kept compact and moist to prevent excessive nutrient losses. Besides, the manure does not have to be treated if it is mixed with the pine shavings.

Table 2 Average amount of storage required for manure *

NO. OF HORSES	MANURE*		MANURE W/BEDDING*	
	250 DAYS	YEAR	250 DAYS	YEAR
	CUBIC YARDS			
1	7	10	12-14	17-20
5	35	50	60-70	85-100
15	105	150	180-210	255-300
25	175	250	300-350	425-500
40	280	400	480-560	680-800

*Assumes 0.75 cu.ft. of manure/day and 0.50 to 0.75 cu.ft. bedding/day (a cube 3-ft. x 3-ft. x 3-ft. is 27 cu.ft. and is equal to 1-cubic yard).

Storage area and characteristics

Storage facilities will be covered dumpsters that will be collected weekly or bi-monthly.

The area will be convenient for loading and unloading.

The covered dumpster should be placed on a concrete pad or other impervious surface that allows for the collection of any liquids that leach out.



Control Drainage

The dumpsters will be covered in raining days.

In stalls sloped the floor toward the front stall door where a shallow, narrow gutter (about 1 inch deep by 4 to 12 inches wide) is positioned along the front stall wall in the aisle floor.

Minimize Runoff

Encourage stormwater infiltration into the ground on the property to reduce runoff, and thus the potential transport of nutrients and pathogens from manure to water bodies.

Setbacks and Buffer strips

A minimum buffer width of 50 feet is recommended in most cases, but 100 feet may be needed along reservoirs and public water supply tributaries.

The manure will be stored to prevent exposure to precipitation and runoff, the location of the storage will be based on the following minimum distances:



Distances between manure storage/composting areas and other activities	
Sensitive Area	Minimum separation distance (feet)
Property line	300
Residence or place of business	200
Private well or other potable water source	100
Wetlands or water surfaces (streams, pond, lakes)	100
Subsurface drainage pipe	None, 25 Recommended
Water table (seasonal high)	2-5
Bedrock	2-5

Reduce flies and odors

Flies. Barn daily cleanout of manure and soiled bedding, leading to a steady stream of waste to handle. Keep manure as dry as possible, below 50 percent moisture. Mixed manure with pine shavings.

Odors. Place the area downwind of the stable facility and residential areas to minimize odor problems. Summer breezes are the main concern if winter and summer prevailing wind directions are not the same. Transport manure off property weekly or bi-monthly.



3. Off-Site Disposal and Recycling

Collection service will be contracted. These companies drop off the dumpsters and pick them up weekly or bi-monthly. They will process the horse manure into compost and used by farmers in their orchards.



Bay Area Equestrian – Manure Management options:

Option 1. Member of the Bay Area Equestrian Network



MEMBER
WEB SITE

East Bay Dumpster

We provide dumpsters for debris and manure removal. We are happy to service you one time, or we can set up weekly, bi-monthly or what fits your needs. We are serving ranches and horse stables with manure removal, clean up and various projects within a 50 mile radius from Brentwood California 94513.

Dan Braudrick

925-783-1269

Brentwood, California 94513

Bus. ID: 9523 [Send E-mail](#) [View Map](#)

Email: eastbaydumpster@gmail.com

Option 2.

Raz Hauling Services, Inc.

Ziv Yerovam

415-786-7293

ziv@razsf.com

Option 3.

Simplify Hauling

Frisly Rivera

415-685-9041

nojobtosmallmo@gmail.com

Conclusion

The manual will help us to have a proper manure management, protect the environment and develop the efficiency of the ranch. Ownership fully understands the importance of a strong manure management plan to be in place for a successful stable.

References:

<https://www.horsehealthproducts.com/horsemans-report/equine-health/5-things-to-look-for-in-your-horses->

[manure#:~:text=The%20average%20horse%20passes%20manure,because%20of%20their%20liquid%20diet.](https://www.horsehealthproducts.com/horsemans-report/equine-health/5-things-to-look-for-in-your-horses-manure#:~:text=The%20average%20horse%20passes%20manure,because%20of%20their%20liquid%20diet.)

<https://opensanctuary.org/horses-whats-the-fecal-matter/>

<https://horseandrider.com/how-to/scoop-horse-poop/>

<https://solanocounty.com/civicax/filebank/blobdload.aspx?blobid=4700>

<https://www.solanocounty.com/civicax/filebank/blobdload.aspx?BlobID=31158>

https://www.bayequest.com/Business/showBusi_79.htm

<https://www.marincounty.org/-/media/files/departments/pw/mcstoppp/residents/horse-manure-mangement.PDF>

https://esc.rutgers.edu/fact_sheet/horses-and-manure/

https://www.bayequest.com/MemberProfile_79.htm

<https://www.missionrcd.org/manure-management>

[Bay Area Equestrian Network - Home | Facebook](https://www.facebook.com/BayAreaEquestrianNetwork/)

<https://extension.psu.edu/horse-stable-manure-management>

<https://horses.extension.org/horse-manure-management/>

<https://njaes.rutgers.edu/fs1192/#:~:text=The%20storage%20must%20be%20located,offsite%20to%20streams%20or%20lakes>