



CDQAP – RB2 Conditional Waiver Reference Binder
 Tab 7.3 March, 2016
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Estimating wet season runoff

This worksheet and its lookup charts are provided for those producers estimating volume of process wastewater collected from the Production Area during the wet season to complete calculations needed for the San Francisco Bay Regional Water Quality Control Board’s Waste Management Plan (WMP) associated with the Conditional Waiver of Waste Discharge Requirements for Existing Cow Dairies (http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/agriculture/CAF/Resolution%20R2-2015-0031.pdf).

If you have farm specific data, use them. If you have certified previously in the California Dairy Quality Assurance Program Environmental Stewardship Module, and still have your pond storage calculations, those numbers may be useful. Review the input information for various surface areas receiving rainfall to be sure any new surfaces are accounted for. If the values remain valid, you may insert them at the appropriate line as indicated here by “JAVA Step #”. Otherwise, complete the tables on the following page and use that information in this worksheet.

Coefficients for runoff are from NRCS annual contour maps CN90 and CN97.

- 1 Daily milkhouse and parlor water generated from document 7.2 (gallons)
 Divide gallons by 27,154 to calculate acre-inches (daily x 365)

RUNOFF VOLUME (estimated by estimating total concrete and non-diverted roof surfaces plus earthen surfaces)

- 2 Annual rainfall (inches) x 1.5 _____
- 3 Total production area from Table 3 (acres) OR _____
 3a Concrete area and non-diverted roofs _____
 JAVA Step 10
- 3b Non-concrete area _____
 JAVA Step 10
- 4 Total roofed area diverted from storage from Table 4 (acres) _____
- 5 Total production area draining to storage (acres) _____
 Line 3 – Line 4
- 6 Total drainage into storage (acre-inches)
 Line 2 x Line 5 x 0.4 OR
- 6a Concrete area draining into storage
 Line 2 x Line 3a x 0.5, PLUS
- 6b Non-concrete area
 Line 2 x Line 3b x 0.25
- 7 Total manure storage surface area from Table 5 (acres) _____
 JAVA Step 7 total (sq ft) / 43,560
- 8 Direct rainfall into manure storage structures (acre-inches)
 JAVA Step 11 (cu ft) x 0.000276

Total volume of process water, drainage, and rainfall (acre-inches)

Line 1 + Line 6 + Line 8 OR
 Line 1 + Line 6a + Line 6b + Line 8

Surface area calculations

Table 3 – Production area surface area

Description	Length (ft)	Width (ft)	Area (ft ²) concrete & non- diverted roof	Area (ft ²) other surfaces
Total (ft ²)				
Total (acres) – transfer to lines 3a and 3b on page 1				

Divide ft² by 43,560 to calculate acres

Table 4 – Roofed areas in the production area with gutters diverting rainfall away from the storage structure.

Description	Length (ft)	Width (ft)	Area (ft ²)
Total (ft ²)			
Total (acres) – transfer to line 4 on page 1			

Divide ft² by 43,560 to calculate acres

Table 5 – Manure storage structure surface area

Description	Length (ft)	Width (ft)	Area (ft ²)
Total (ft ²)			
Total (acres) – transfer to line 4 on page 1			

Divide ft² by 43,560 to calculate acres