

RETENTION POND IMPROVEMENTS- COMBINED CYCLE (rev. 3/20/09)
GWF, Hanford, CA

The existing retention pond in the north-western corner of the existing site will be widened to the west to increase the volume to include runoff for the new development, and to keep the water elevation in the event of the 100 year storm to 0.5 foot lower than the lowest catch basin grate in phase 2.

Stormwater retention basin volume needed for the total permanently disturbed area.

Source: City of Hanford, CA Public Works Construction Standards Manual - Storm Drainage Design Criteria Section

Volume of Runoff to be Contained (pg 3 of 7): $V_{req} \text{ (ft}^3\text{)} = C A R$

Industrial Areas (Power plants)

C = Runoff Coef. (pg 6 of 7)	0.80
A = Drainage Area (ft ²)	317,201
R = Runoff (ft) for 100 yr, 10 day storm	0.473
V _{req(prop)}	120,113 ft ³

Retention Basin

C = Runoff Coef. (pg 6 of 7)	1.00
A = Drainage Area (ft ²)	29,285
R = Runoff (ft) for 100 yr, 10 day storm	0.473
V _{req(prop)}	13,862 ft ³

Permanent Laydown Area (dirt field with no surfacing)

C = Runoff Coef. (pg 6 of 7) ¹	0.30
A = Drainage Area (ft ²)	68,697
R = Runoff (ft) for 100 yr, 10 day storm	0.473
V _{req(prop)}	9,755 ft ³

Total Drainage Area	415,183 ft ²
Total Retention Volume Required	143,729.87 ft³

Notes

- 1) Runoff Coefficient for dirt area is estimated at 0.3 by Jim Hansen of Zumwalt and Hansen, a local surveying and civil engineering firm
- 2) Basin will contain runoff from entire site within permanent fence.