

क्रमांक 373/22/42/11
कार्यालय प्रमुख अभियन्ता,
जल संसाधन विभाग, जल संसाधन भवन,
तुलसी नगर, भोपाल - 3

भोपाल, दिनांक 26 नवम्बर 2012


प्रति,

मुख्य अभियन्ता,
..... परियोजना / कछार,
जल संसाधन विभाग,
भोपाल ।

विषय : विभाग के तकनीकी कार्यों के उपयोग हेतु Technical Tip एवं Conversion Table.

विषयान्तर्गत विभाग के तकनीकी कार्यों में उपयोग के लिए Technical Tip एवं Conversion Table से संबंधित जानकारी संलग्न प्रेषित है । कृपया अधिनस्थ अधिकारियों को तत्संबंध में अवगत कराने का कष्ट करें ।

संलग्न : उपरोक्तानुसार दो पृष्ठ



(एम.जी. चौबे)
प्रमुख अभियन्ता,
जल संसाधन विभाग, भोपाल

पृ. क्रमांक 373/22/42/11

भोपाल, दिनांक 26 नवम्बर 2012

✓ प्रतिलिपि : उपसंचालक, डाटा सेन्टर, जल संसाधन विभाग, भोपाल की ओर विभाग के वेबसाईट में प्रकाशित करने हेतु प्रेषित ।

संलग्न : उपरोक्तानुसार दो पृष्ठ


(एम.जी. चौबे)
प्रमुख अभियन्ता,
जल संसाधन विभाग, भोपाल

TECHNICAL TIPS

1 Cusec per day	One day in MCM	One month in MCM	One year in MCM
	1/408.73	0.073	0.893
1 Cumec per day	0.0864	2.59	31.54 Mcum

- For 1 cusec per day round the year 1 sq. mile catchment required.
- For 1 cumec per day round the year 35 sq. mile catchment required.
- One Sq. Mile catchment storage scheme - Irrigation about 200 ha. kharif or 170 ha. Rabi or 131 ha. perennial crop is generally irrigated.
- Velocity in ft / sec is approximately equal to - Velocity in km/hr.
- One square mile catchment gives about 1 Mcum yield.
- One Square mile catchment may provide drinking water to 20000 (0.20 Lakhs) persons for whole year.
- Live storage in MCM = $K/200 + R/170 + P/131$ where K = Kharif, R = Rabi, P = Perennial area in hectares. (For storage tanks)
- 1 Mgd = 1/222.233 Mcum. per day or 0.135 Mcum per month or 1.62 Mcum per year / 36000 persons.
- 1 Mld = 1/1000 Mcum per day or 0.03 Mcum per month or 0.365 Mcum per year / 8000 persons.
- 1 Mgd = 1/19.2 Cumec per day or 1.84 Cusec per day
- For 1 mgd requirement 1.84 sq.mile catchment is required.
- For 1 mld requirement 0.41 sq.mile catchment is required.
- 1 mld can provide water to 8000 population.
- 1 mgd can provide water to 36000 population.
- 1 Mcum storage can provide drinking water to 20000 population.
- Plan yearly target assuming 150 working days.
- Irrigation from STOP DAM $A_D = HFL(M)^{0.75} / (10)^5$ where A = Maximum permissible designed irrigation in hectare; H = Average water depth in Metres at the upstream face of the Stop Dam; F = Back water length; L = Effective length of Stopdam (water surface length); M = Catchment area in Sq.Km (Value of M should not be taken more than 100)

CONVERSION TABLE

One Inch	is equal to	2.54 cm
One foot	is equal to	0.3048 metre
One mile	is equal to	1.609344 Kilometres
One cm.	is equal to	0.393701 inch
One metre	is equal to	3.28084 Feet
One kilometer	is equal to	0.621371 Mile
One square inch	is equal to	0.4516 sq. cm
One square feet	is equal to	0.0929030 sq.cm.
One square mile	is equal to	2.58999 sq.km.
One Acre	is equal to	0.404686 Hectare
One Acre	is equal to	43560 sq.feet
One Sq.cm.	is equal to	0.155 sq.inch
One sq.mile	is equal to	640 Acres
One sq. metre	is equal to	10.7639 sq.feet
One sq. km	is equal to	0.386102 sq.miles
One hectare	is equal to	2.47105 Acres
One cft.	is equal to	0.0283168 cum
One cft	is equal to	6.2347 gallpns
One cft	is equal to	28.31 Litres
One imperial gallon	is equal to	4.54069 Litres
One imperial gallon	is equal to	0.1604 cft
One cum.	is equal to	35.3147 cft
One cum.	is equal to	220.23 gallon
One litre	is equal to	0.219969 gallon
One litre	is equal to	0.035 cft.
One litre	is equal to	0.0453592 kg.
One ton	is equal to	1.01605 Tonne
One kg.	is equal to	2.20462 Pound
One Tonne	is equal to	0.984207 ton
Pressure		
One pound per sq. ft.	is equal to	4.88243 kg. per sqm.
One pound per sq. in.	is equal to	0.0703070 kg. per sq. cm.
One ton per sq. ft.	is equal to	10.9366 tonne per sq. m.
One Newton per sq. m.	is equal to	9.80665 X 10 ⁴ kg. per sq. m.
One kg. per sq. m.	is equal to	0.204816 pound per sq. ft.
One kg. per sq. m.	is equal to	14.2233 pounds per sq. inch
One kg. per sq. m.	is equal to	1.0197 X 10 ⁵ Newton per sq. m.

Miscellaneous

One T.M.C. (Thousand Million Cubic Feet)	is equal to	22960 Acre ft.
One T.M.C	is equal to	2831 Hectare metre
One Acre ft.	is equal to	0.123348 Hectare metre
One Hectare Metre	is equal to	8.1071 Acre ft.
One Hectare Metre	is equal to	0.00035 T.M.C.
One cusec day	means	One cusec discharge for 24 hours.
One cusec day	is equal to	1.98 Acre-Ft. per day.
One cusec day	is equal to	86400 cft. per day
One Acre-ft / day	is equal to	0.5042 cusec/day
One Million cft./day	is equal to	11.51 cusec per day
One Cumec	is equal to	86400 cum. per day
One cumec	is equal to	11.57 cumec per day
One cumec	is equal to	70.06 Acre ft.
One cumec	is equal to	3.05 Mcft.
One litre per sec.	is equal to	0.035 cusec
One cusec	is equal to	28.31 litres per sec.
One litre per second	is equal to	791.91 Gallons / hour
One gallon per hour	is equal to	0.0012 litre / sec.
One mgd. (Million gallons per day)	is equal to	1.86 cusecs per day
One mgd.	is equal to	0.16 Mcft. per day
One mgd.	is equal to	3.69 Acre-ft. per day
One mgd.	is equal to	4540.69 cum per day
One mgd.	is equal to	0.0526 cumec per day
One cusec per day	is equal to	0.5376 mgd.
One Mcft per day	is equal to	6.236 mgd.
One Acre-ft. per day	is equal to	0.271 mgd.
One Mcum per day	is equal to	220.23 mgd.
One cumec per day	is equal to	19.0117 mgd.

Standard scales for different maps -

(1) F.P.S. Topo sheets	1 inch =	1 mile
(2) M.K.S. Topo sheets	1 cm. =	500 metres
(3) District Map	1 inch =	4 Miles
(4) Tahsil Map (Mazmuli)	1 inch =	2 Miles
(5) Forest Topo sheets	4 inch =	1 Mile
(6) Village map (Cadastral map)	1 inch =	330 Ft. (16 inch = 1 Mile)
(7) Canal 'L' section & Plan	V 1 cm. = 1 metre	[As per CDO/Bodhi Format No.3]
	H 1 cm. = 30 metre	
	Contour interval	- 0.5 M.