

Sprinkler Irrigation Design Summary Worksheet

Project Owner's Name & Address:

Project Location		
Field No:	Legal Description:	Block: _____ Unit: _____
_____, Section _____, T _____, R _____; _____ County, WA		
Project Designer		
Design Prepared By:	Representing: (name of agency, company, etc.)	Date:

Basic Soil Data											
Soil Series	% of Irrigated Area	Average Slope, (%)	Available Water Holding Capacity, AWC (in/ft depth)					Sprinkler Intake Rate, (in/hr)	Depth in feet to		EC _{e(ave)} (mmhos/cm)
			0 - 1	1 - 2	2 - 3	3 - 4	4 - 5		Inhibiting Layer	Water Table	

EC_{e(ave)} = Average Soil Extract Electrical Conductivity, (mmhos/cm)

Basic Crop Data								
Crop to be Irrigated	Acres	Root Zone Depth (ft)	Total AWC (in)	MAD (%)	Peak Daily ET _c (in/day)	Peak Irrigation Requirement (in / month)		EC _{e(ct)} (mmhos/cm)

MAD =Management Allowed Depletion

EC_{e(ct)}, is the threshold salinity, maximum mean root zone soil salinity at which yield reductions will not occur.

Irrigation Water Data						
Source	Average			Water Quality		
	Flow Rate (gpm)	Pressure (psi)	pH	TDS (mg/l)	EC _w (mmho/cm)	SAR

Sprinkler Design Summary Worksheet, cont.

Project Owner's Name: _____

Irrigation System Planning Data

Type of System: _____

Total Area Irrigated, **A**, (acres): _____

Crop Evapotranspiration, **ET_c**, (inches per day) _____ *(Use peak ET_c for the critical design period)*

Actual Operating Time, **T**, (hours/day): _____ *(T is not to exceed 22 hours/day)*

Assumed Application Efficiency, **E_a**, (%): _____

Minimum System Capacity, **Q_u**, (gpm/acre): _____

$$Q_u = \left[\frac{453 \cdot ET_c}{T \cdot (E_a / 100)} \right]$$

Design Flow Rate, **Q = Q_u x A**, (gpm): _____ Available Flow Rate, (gpm): _____

Sprinkler Line Data

Pipe Description: _____ Inside Diameter, ID, (in): _____

SDR _____ Number of Outlets: _____ Inlet Pressure, (psi) _____

Elev. Head, (ft)
Up (-) Down (+) _____ ÷ 2.31 = _____ + Friction Loss, (psi) _____ = Actual Pressure Loss, (psi): _____

Is Allowable Pressure Loss ≤ 20% of sprinkler design operating pressure, (psi)? _____

Sprinkler Head Data

Make: _____ Model: _____ Nozzle Size, (inches): _____

Riser Height, (in): _____ Pressure, (psi): _____ Pressure Regulators? **Y** **N** Discharge, (gpm): _____

Lateral Spacing, (ft): _____ Mainline Spacing, (ft): _____ Wetted Diameter, (ft): _____

Application Time, (hrs): _____ Application Rate, (in/hr): _____

Net Application Depth = Application Time x Application Rate x Efficiency, (inches) = _____

(field evaluation) Coefficient of Uniformity, CU, as determined from: (model simulation- e.g: CPED, Overlap) (design assumption) _____

Sprinkler Design Summary Worksheet, cont.

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Other System Components

Item	Location	Description
Flow Measuring Device		
Surge Control (valve, chamber)		
Air-Vacuum Valves		
Pressure Relief Valves		
Waterline Check Valve		
Injection Line Check Valve		
Drain Facilities		
Thrust Blocks		
Other		

Attach Supporting Documentation that includes: *(Check all that apply)*

- On -site Survey and Soil Investigation Field Notes, as required**
- Well/Pump Performance Test Results & Water Quality Analysis Report (< 1 year old)**
- Filter Selection & Design Computations if required**
- Hydraulic Design Computations & vendor's nozzle package design printout**
- Simulation Model(s) Data**
- Construction Drawings, Specifications, Material List and Itemized Cost Estimate**

Attach plan view(s), aerial photo(s), map(s), etc. as needed to identify and locate:

- Area Irrigated with Sprinklers**
Include field boundaries, utilities, system layout & direction of move, & prevailing wind direction
- Site Specific Elevation Grid or Contours**
Include map scale, legend, north arrow & critical elevations, note high & low points on sprinkler line
- Irrigation Well(s) or other Water Source**
Indicate design capacity (gpm) and operating pressure (psi)
- Delivery Pipeline (from source to sprinkler line)**
Indicate sizes, lengths, locations, material type, pressure ratings
- Sprinkler Line(s), Control Station & Filter Station(s) & Valves**

Design Certification

To the best of my professional knowledge, judgment and belief, these plans meet applicable NRCS standards. Signed _____ Date _____

Installation Certification

To the best of my professional knowledge, judgment, and belief this practice is installed in accordance with the plans and specifications and meets NRCS standards.

Signed _____ Date _____