SPRINKLER INTAKE/APPLICATION RATE TEST

Owner _____ District _____ County _____

Legal description _____ Date _____ By _____

Soil series – Mapped _____ Actual _____ Land slope _____ (Abney)

Field condition (circle): Pulverized Fine clods (marbles) Medium clods (egg) Large clods (baseball)

Surface crusting – Yes ____ No ____ Tillage plan – Yes ____ No ____ Depth _____

Other restrictive layers: Kind _____ Depth _____

Subsoiled: Date _____ Depth _____ Spacing _____ Direction _____

Tillage implement	Date	Implement	Date	Implement	Date

Pitter or dam master (spacing) _____ Other (describe) _____

Previous crop history:

year	crop	yield	year	crop	yield

Field residue (circle): None 0–199 Low 200–499 Medium 500–799 High 800+

Present crop _____ Cropping direction (circle): Contour Cross slope Up & down slope

Cover crop: Annual _____ (type) % Perennial _____ (type) %

Green manure incorporated: Date _____ Tillage _____

Crop canopy (circle): 0 to 10% 11 to 25% 26 to 50% 51 to 75% 76 to 100%

Average sheet and rill erosion (circle): None 0–2 Slight 2–5 Moderate 5–10 Severe 10–20 Very severe 20+

Concentrated flow erosion (circle): Wheel tracks Draws (slight, moderate, severe)

Irrigation system (circle): Center pivot Wheel line Hand line Big gun Solid set Other _____

Can No.	Time			Volume of water caught (c.c.)	Depth of water caught (c.c.)	Intake rate (in/hr)
	Begin test	End test	Elapsed time (hrs)			
Average						

Comments: _____

INSTRUCTIONS FOR PERFORMING INTAKE/APPLICATION RATE TEST

A. Select a field being irrigated in the normal manner by the farmer.

B After irrigation has progressed long enough so that the soil has reached its basic intake rate, usually toward the end of the irrigation period, locate areas in the field where the water is absorbed in the same length of time as it takes for the sprinkler head to revolve and again spray the area. There should be no movement of water over the surface, and more than the slightest ponding is generally unsatifactory.

C. Motion Equipment (Center pivots, Walking laterals, etc.)

1. Parallel to the nozzles place five one-quart cans, with the tops removed, at the selected locations. On soils with little cover, dig the cans slightly into the ground to prevent overturning. Where heavy cover is present, mount the cans with heavy rubber bands or stakes so that they are just above the top of the cover.

2. Record the time, in hours and minutes, at which can is placed in position.

3. Not less than one hour later (a longer period is preferable) remove the cans and record the pertinent time for each can, in hours and minutes.

4. Measure, and record, the volume caught in cubic centimeters by each can. An inexpensive graduate for this purpose is an ordinary glass or plastic baby bottle calibrated in cubic centimeters.

5. Compute and record, the elapsed time for each can in hours to the nearest 0.01 hour. For example: 1 hour 45 minutes = 1.75 hours.

D. Motion Equipment (Center pivots, Walking laterals, etc.)

1. Place five catch cans (spaced about ten feet apart) in a line perpendicular to the sprinkler line. One can should be directly under the nozzle when timing is started. Place two cans forward and two cans behind the first can. Cover the cans with plastic lids, small sheets of cardboard, wood, or plastic bags.

2. Remove covers (as quickly as possible) from all cans and start timing when nozzle is directly over center can.

3. After five or ten minutes operation, cover cans (as quickly as possible).

4. Measure quantity caught. The can with the largest quantity will represent the maximum application rate.

E. Convert the volumes caught in cubic centimeters to depths caught in inches and record. An ordinary one quart oil can holds approximately 200 c.c. per inch of depth so to make the conversion merely divide the volume caught in c.c. by 200.

F. The intake rate of the soil is computed by dividing the depth of water caught in inches by the elapsed time in hours.

G. Record comments.