IRRIGATION EFFICIENCY & PUMPING REDUCTION CHALLENGES

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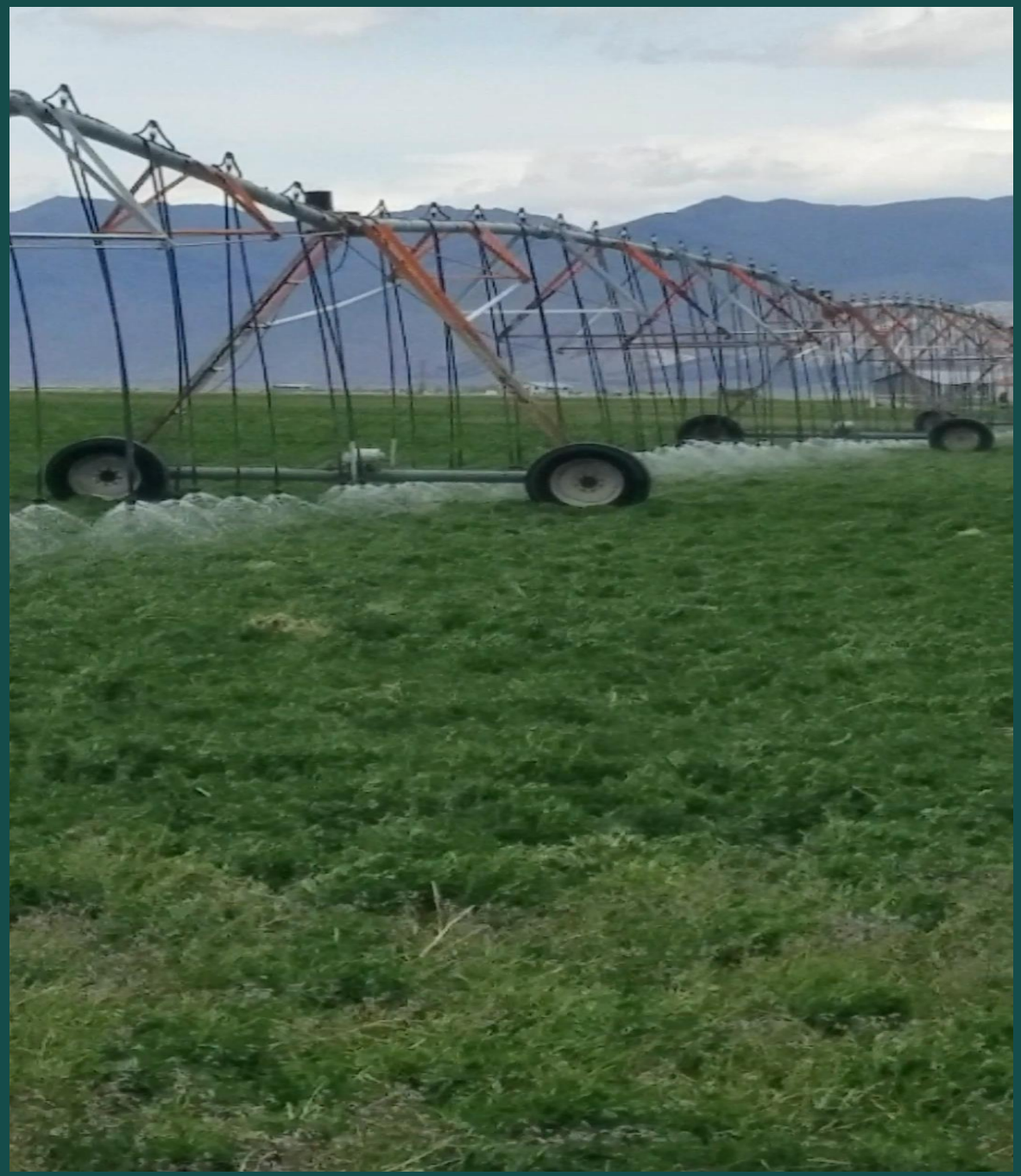
Introduction

Water Conservation Implementation

- Aquifer – over appropriated, deepening wells
- Declining 2 feet per year
- Evaporation and Drift Loss challenges
- Advances in new Sprinkler Designs
- Flood Irrigating with pivot
- 20% Estimated loss to drift and evaporation



Efficiency Up-Grades “make every drop count”

- Get sprinklers close to the ground and in crop canopy
- Double the number of outlets to maintain uniform distribution in crop canopy, overlap maintained
- Lower system pressure
- Return on Investment recovered thru lower energy use and better yield due to increased uniformity.

System Design

- Lower system operating pressure
- 6 gallons per acre vs 8 gallons per acre
- Not watering below root zone
- Variable rate of pivot to match soil types

Historically:
5 ton alfalfa yield used 3.5 acre feet of water for 3 cuttings (42”)

With Upgrades:
5 ton alfalfa yield used 2.5 acre feet of water for 3 cuttings (30”)-w/o yield drop

GROUND WATER MANAGEMENT PLAN

- Reducing pumping 30% in the next 10 years
- Eliminate Inefficient Irrigation
- Better water management practices
- Meet pumping reduction without yield loss

Future Goals “Crop per Drop”

- Soil moisture monitoring
- Variable rate Irrigation
- Soil organic matter
- Soil water holding capacity
- Building healthier soil

Summary / Closing

- Change is the only constant
- Technology improvements will continue
- We can’t afford not to invest in latest efficiency methods
- Biggest water users have biggest responsibility to be sustainable

QUESTIONS