Practice: 466 - Land Smoothing

Scenario: #1 - Continuous Surface Land Smoothing

Scenario Description:

This is scenario will smooth a typical 40 acres of irrigated crop land surface to enhance uniform flow of surface water to improve irrigation efficiency using dirtpans/carry-all/pan-scraper equipment. The typical volume of earth moved is 100 to 350 cubic yards per acre.

Resource Concern: Excess/Insufficient - Inefficient Use of Irrigation Water

Associated Conservation Practices: 433 - Irrigation System, Surface and Subsurface; 607 - Surface Drain, Field Ditch; 388 - Irrigation Field Ditch; 449 - Irrigation Water Management; or 587 - Structure for Water Control.

Before Situation:

Irregular field surface reduces uniformity of surface application and thus irrigation efficiency by localized ponding and/or excess runoff/runon.

After Situation:

A vaiable row slope and cross row slope is used to optain the optimum design of the surface so that minimum movement of soil is needed. Water can then move along the natural flow of the ground without causing ponding with in the row.

Scenario Feature Measure: Yards of earth moved

Scenario Unit: Cubic Yard

Scenario Typical Size: 9,000

Scenario Cost: $10,026.50 **Scenario Cost/Unit:** $1.11

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation						
Scraper, pull, 15 CY	1207	Pull type earthmoving scraper with 15 CY capacity. Does not include pulling equipment or labor. Add Tractor or Dozer, 260 HP typically required for single scraper.	Hour	$19.95	54.5	$1,087.28
Tractor, agricultural, 360 HP	1205	Agricultural tractor with horsepower range of 340 to 390. Equipment and power unit costs. Labor not included.	Hour	$133.74	54.5	$7,288.83
Labor						
Equipment Operators, Heavy	233	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	$22.13	54.5	$1,206.09
Mobilization						
Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	$444.31	1	$444.31