Ranch #1

Pond details:

- Licensed water right (1963)
- 25.9 acre-feet collection to storage
- 1 outlet, 1 use: livestock watering

Regulatory requirements:

DIVERSION (to storage)	
Measurement	Monthly
Reporting	Annual (April) w/ monthly numbers Jan-Dec
Method	+/- 15% accuracy Equipment installed by "individual experienced with measurement & reporting"
USAGE	
Measurement	Monthly
Reporting	Annual (April) w/ monthly numbers Jan-Dec
Method	Reasonable means

Solution:

- ***Diversion*** recorded monthly in datebook, taken from staff gauge
  - ***Alternatives:***
    1. Use pressure transducer, download data via bluetooth or direct to laptop on regular basis (+$)
    2. Set up mount for laser level, take measurement with yardstick/staff every month (+$)

- ***Usage*** recorded monthly in datebook based on head of cattle watered per month

  Pregnant, non-lactating cow @ 70-degrees drinks 10 gal/day = 300 gal/month/head
  Lactating cow+calf pair @ 70-degrees drinks 17 gal/day = 510 gal/month/pair
  (from: Fundamentals of Beef Management, UCANR, 2006)

  See other figures for water consumption by weight/temp: http://extensionpublications.unl.edu/assets/pdf/g2060.pdf

  - ***Alternatives:***
    1. Record monthly drops in water level on staff gauge, record as gallons used (=$)
    2. Use pressure transducer, download data via bluetooth or direct to laptop on regular basis (+$)
    3. Track total hours pump operates each month, multiply by pump's rate (gallons/minute) (=$)

Devices	**Source**	**Price**
AdirPro stream gauge – 12 feet/3 sections: Feet, 10ths, 100ths	tigersupplies.com	$175
Monthly calendar		$15
Miscellaneous materials: 2" galvanized pipe, u-bolts, hardware	hardware stores (various)	$175
	TOTAL:	**$365**

Installation (staff gauge):

1. Acquire Depth Capacity Curve (DCC) from State Water Board
   - *Call or email the State Division of Water Rights: 916-341-5300, DWR@waterboards.ca.gov*
   - *Ask for the "Field File" for your water right. They will copy up to 30 pages for free*
2. Establish depth from spill to lowest typical drawdown – DCC can be helpful with this
3. Pound galvanized pipe at a point past lowest typical drawdown – assemble in sections to achieve above-spill height
4. Mark spill height on pipe
5. Attach staff gauge to pipe, aligning gauge with "0" at bottom of pond
6. Note exact number at spill height. Record number and keep for use during reporting