Sources / Wells

- Sanitary Seal
- Well casing vent (if)
  - Down turned & screened #14
- Well Casing - 18” above the ground, 12” above floor
- Means to measure draw down
Pitless Adapter
Well casing air vent

Water table measurement

Good sanitary seal

12” above floor
Good sanitary seal

12” above floor
Means to measure drawdown.
Sanitary Seal?
Well Casing Air Vent?
Height?
Protected from flooding?
Sanitary seal not in tact
What is wrong here
Sources / Wells

- Discharge equipment
  - 5 components
    - Shut off valve, Check valve, Sampling tap
    - Pressure gauge, Meter
  - Correct lubricants
    - Food grade oil/lube
The Five Components

- Sample Tap
- Check valve
- Pressure Gauge
- Meter
- Shut Off valve
Food grade Mineral Oil
The Five Components?
Sources/Wells

- Air vac/relief valves or pump to tank
- Down turned & screened #14
Air & Vacuum Relief Valves
Sources / Wells

- Drainage of building
- Building secured – locked
Drainage
Air Gaps
2 x Pipe Dia.
Security

Building Secure
Building Secure
Open Screen door

Open door

Secure buildings
Pump to Waste Lines

- Discharge through an approved air gap
- Equipped with a #4 non-corrodible mesh screen
- Does it discharge to a sanitary /Storm line without proper local authorization
Pump to Waste
What is wrong here?
Security
Security
Sources/Springs
SUGGESTED DETAILS FOR SPRING DEVELOPMENT IN ALLUVIAL FORMATIONS

UNDEVELOPED SPRING

WATER BEARING FORMATION

IMPERVIOUS FORMATION

SPRING

DEVELOPED SPRING

WATER BEARING FORMATION

IMPERVIOUS FORMATION

JUNCTION BOX

OVERFLOW LINE

#4 MESH SCREEN

12" MI NI MUM

SHUT OFF VALVE

PERMANENT FLOW METER

COLLECTION TILE

SUPPLY PIPE

GRAVEL

COLLECTION TILE

OVERFLOW LINE

#4 MESH SCREEN

12" MI NI MUM

SHUT OFF VALVE

PERMANENT FLOW METER

COLLECTION TILE

SUPPLY PIPE

GRAVEL

SUGGESTED DETAILS FOR SPRING DEVELOPMENT IN ALLUVIAL FORMATIONS

DIAGRAM 6-4
50

4" RISE ON ACCESS ENTRY

LOCKED

HINGED SHOE BOX TYPE LID WITH GASKET

TURNED DOWN AIR VENT W/#14 MESH SCREEN

OVERFLOW PIPE W/#4 MESH SCREEN

12" OF FREEFALL

OTHER REQUIREMENTS:
1. NO STANDING WATER OVER COLLECTION AREA.
2. NO DEEP ROOTED VEGETATION IN SPRING COLLECTION AREA.
3. NO ROOTS GROWING IN COLLECTION PIPING.
4. STOCK TIGHT FENCE AROUND COLLECTION AREA.
5. DIVERSION CHANNEL AROUND COLLECTION AREA.
6. NEEDS A PERMANENT FLOW MEASURING DEVICE.

ADDITIONAL INFORMATION:
1. DOES SPRING HAVE SOURCE PROTECTION PLAN.
2. TYPE OF COLLECTION PIPE.
3. CONFINED AQUIFER.
4. DISTANCE TO SURFACE WATER.
5. CURRENT FLOW RATE.

MINIMUM 2 FEET OF IMPERVIOUS SOIL COVER WITH LINER

MINIMUM 10 FEET OF IMPERVIOUS SOIL COVER WITHOUT LINER

ACCEPTABLE LINER
Sources Springs

- Air vents
  - Down turned & screened #14
    - #4 support screen (4in plus)
- Access manhole
  - Shoe box lid, Gasketed & locked
  - 4” above cement, 18” above ground
Shoe Box Lid
- Good gasket
- & Locked

18" Above Ground

Air Vents
- Down turned & Screened

4"
- Above Cement
No Air Vents?
Check for gasket being sucked in.
Sources Springs

- Water ponding
- Impervious soil cover or liner
- Fencing of collection area
10 feet of cover.
Impervious Soil Cover?
10 feet of Impervious soil? Liner?

Everything is wrong on this spring!
Rubbermaid
Spring Box
Impervious Soil cover?
Or Liner
What are the regulations on liners?
Stock Proof Fencing
Stock Proof Fencing?
Sources Springs

- Deep rooted vegetation
- Roots in collection pipes
Spring – Overflow & Drain

• Overflow and drain outlet
  • Screened #4 mesh
  • Adequate free fall
    • Minimum 12 inches
Sources Spring

- Condition of collection box (50 point item)
- Diversion channel
Condition of Box

- Lockable
- 4” above cement
- 18” above ground
- Shoe box lid
Unsealed Openings

Condition of Box
Why a Diversion Channel?
Sources/Springs

- Meter
  - Weirs inside spring boxes w/ depth
  - Calculated/recorded in office?
Weir/Spring Box depth