

SO YOU ARE GOING TO
GET A PERMIT !!



Operating Permits Authority

- ✓ March 18 2008
- ✓ Governor Huntsman signed HB 222
- ✓ Water Quality Board Amendments
- ✓ ... issue construction or operating permits for the installation or modification of treatment works or any parts of *the treatment works...*

Operating Permits Background

- ✓ Most wastewater systems are permitted by one of four programs:
- ✓ Ground Water Quality Protection
- ✓ Underground Injection Control (UIC)
- ✓ Utah Pollutant Discharge Elimination System (UPDES)
- ✓ Permits for a Water Reuse Project
- ✓ This program is for everyone else !!!

Operating Permits Implementation

- ✓ 5 year permit "General Permits"
- ✓ "Individual Permits for land disposal facilities"
- ✓ Multi-year phase in to program
- ✓ Required to apply for a permit by 1/1/10

Operating Permits Implementation

- ✓ Site visits by DEQ
- ✓ Talking to governing boards
- ✓ 1st round of permitting will focus on information gathering

Operating Permit Reporting

- ✓ FLOW !!
- ✓ Pond Depth

✓ COD

✓ pH

✓ DO

- ✓ E-coli

- ✓ Nitrogen

Everyone

Land Disposal

Flow Measurement



Flow Measurement Reporting

Need to measure

Daily Average

Discharged during a 24-hour period

30-Day Average

Arithmetic average of daily averages

Report flow rate in (Gallons per Day) GPD !

Pond Depth Indicator



Pond Depth Indicator



Pond Depth Indicator





Pond Depth Indicator

Why ?

Flow, Pond Depth

Lagoon Liner Basics

- ✓ Liner - Barrier to groundwater
- ✓ Composed of soils - clays, bentonite
- ✓ Composed of synthetics - HDPE, PVC
- ✓ ALL LINERS LEAK !

Lagoon Liner Basics

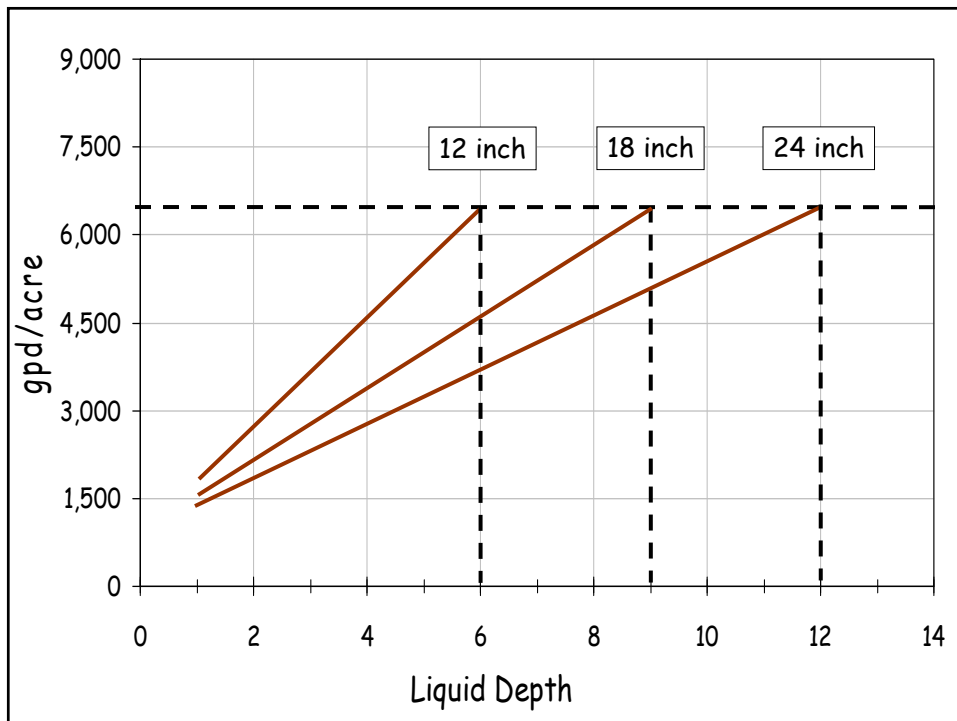
- ✓ Seepage is a function of liner thickness
- ✓ Thicker liner gives lower seepage
- ✓ Seepage is a function of liquid depth
- ✓ Deeper depth gives higher seepage

Utah Liner Requirements

- ✓ It shall not exceed 6,500 gallons per acre per day.
- ✓ Hydraulic conductivity shall not exceed 1.0×10^{-6} centimeters per second.

Clay Liners

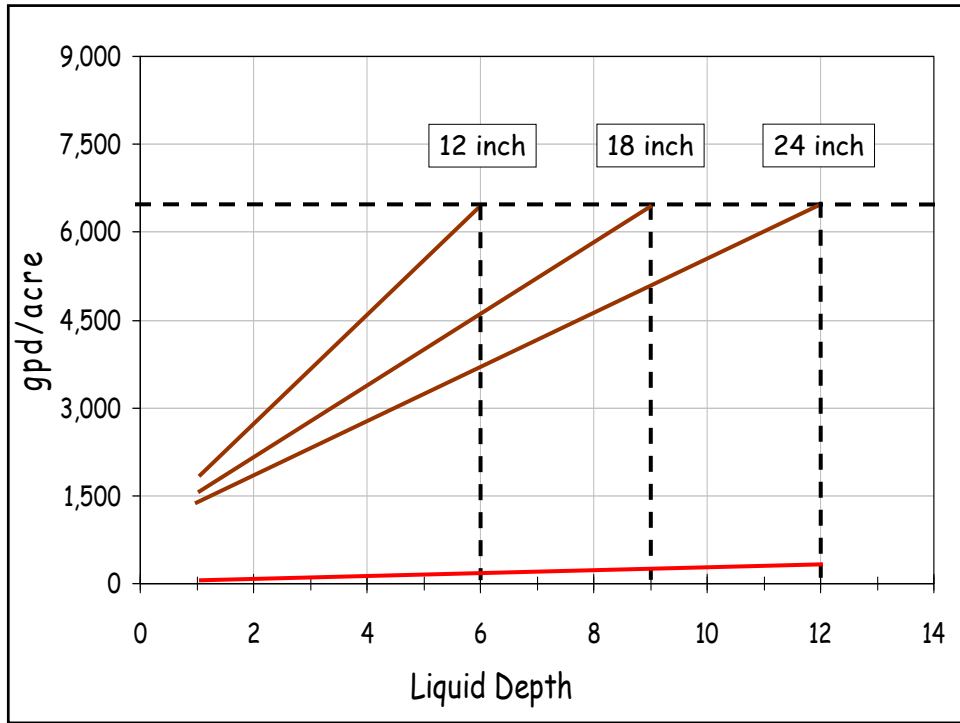
Assume hydraulic conductivity at 1.0×10^{-6} centimeters per second.



Synthetics Liners

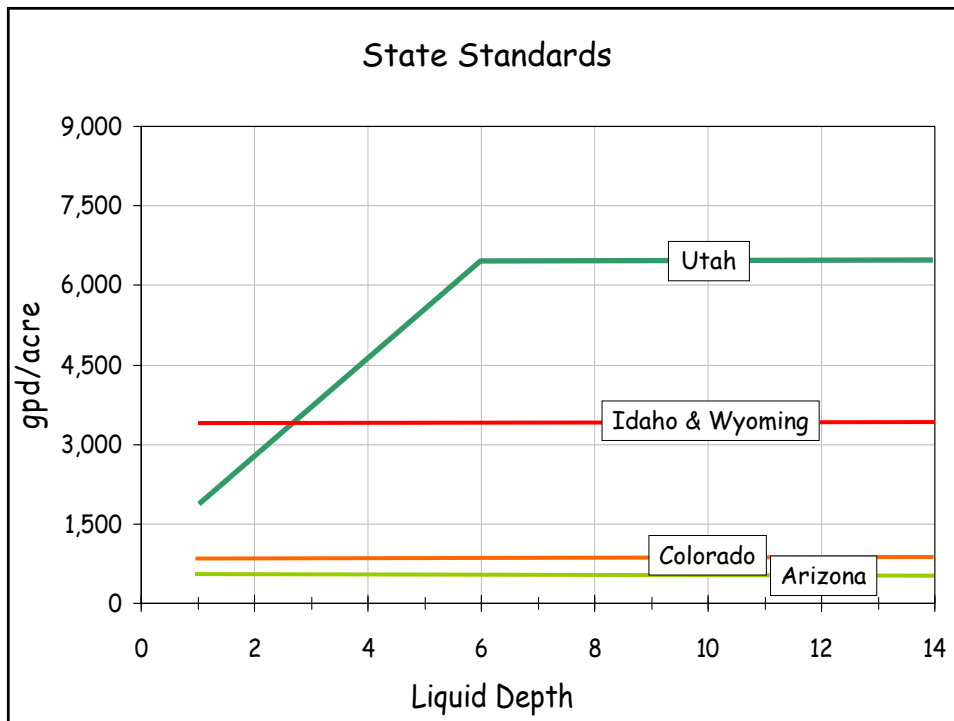
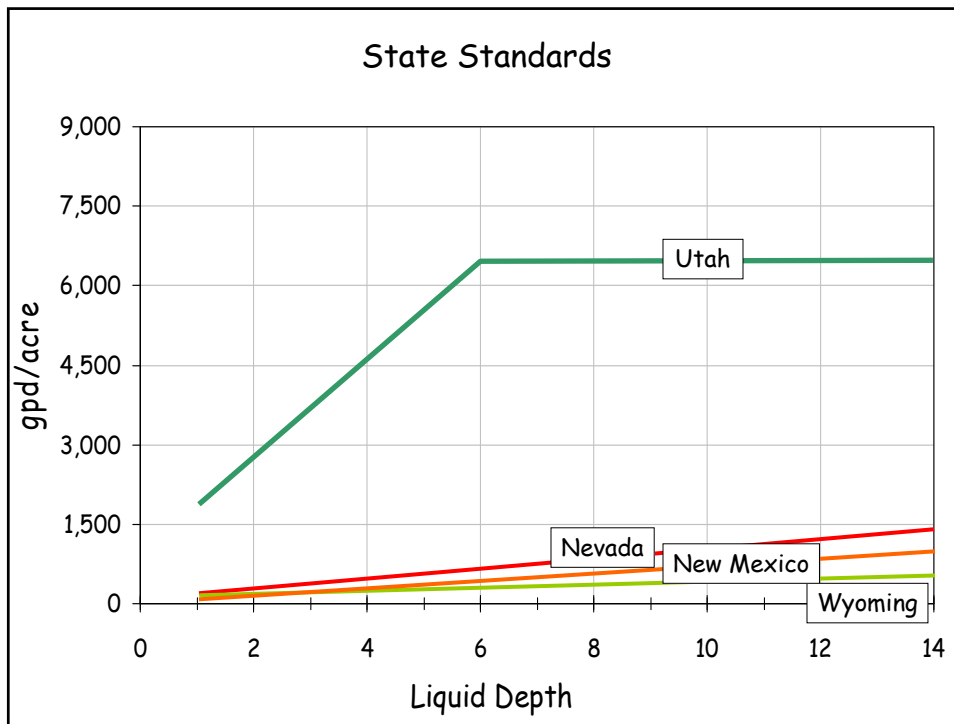
Assume hydraulic conductivity at 1.0×10^{-9} centimeters per second.





Neighboring States

Lagoon Liner Requirements





Why ?

E-Coli, Nitrogen

Bacterial Standards

Bacteria Indicators

- ✓ **Total coliforms** are ubiquitous in the environment
- ✓ **Fecal coliforms** are a subset of "total"
- ✓ **E. coli** is a subset of "fecal"
- ✓ **E. coli** is a more host specific indicator (mammalian)

Utah Surface Water Quality

The Board as required by Section 19-5-110, shall group the waters of the state into classes so as to protect against controllable pollution the beneficial uses designated within each class as set forth below.

Class 2A -- Protected for primary contact recreation such as swimming

E. coli bacteria shall not exceed a 30-day geometric mean of 126 organisms per 100 milliliters, and a maximum of 576 organisms per 100 milliliters



Nitrogen

Nutrient Management Plan (NMP)

- ✓ A NMP provides a plan to economically and efficiently manage wastes and produce crops while minimizing contamination of natural resources.

What are the elements of a NMP ?

- ✓ Background and site information
- ✓ Wastewater handling and storage
- ✓ Land treatment practices
- ✓ Soil erosion and nitrogen and phosphorus risks
- ✓ Nutrient management
- ✓ Recordkeeping

Nitrite - Nitrate

Con → 10 mg/L drinking water



Your Permit Responsibilities

- ✓ Apply for coverage under "general permit" by Dec 31.
- ✓ Record flow and pond depths on MOR.
- ✓ Submit MOR monthly to pkrauth@utah.gov.