

U.S.NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment



Revisions to DG-4014

J. C. Shepherd

DWMEP

FSME

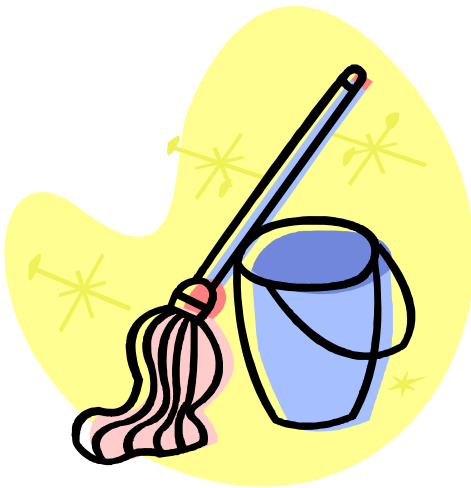


Decommissioning Planning Rule

- Limit Environmental Contamination
- Monitor Site, Including Subsurface
- Keep Results In Decommissioning Records
- Update Financial Assurance



Limit Environmental Contamination



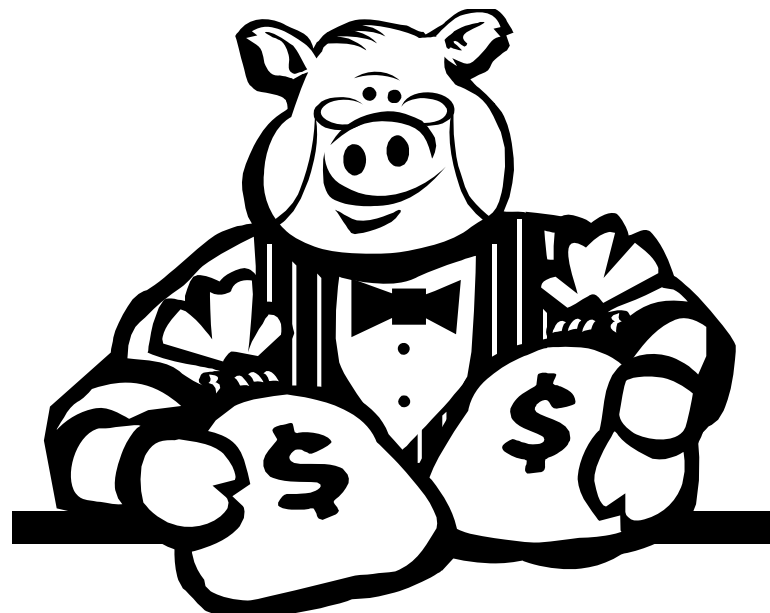
Limit Contamination (Con'd)



Do Reasonable Surveys



Keep Records and Money





Comments And Responses

- Large Number Received -- > 100
- Divided Into Clusters
 - Not Individual Answers
 - Not Level of Detail Some Wanted
 - Q: How Many Samples Must I take?
 - A: It Depends



Comments 1 -- Easy

- We Are Perfect So NRC Should Exempt Us

— NO

- \$\$\$ Happens, even to the best
- Write your own letter to file explaining your perfection
- Keep on good terms with your banker



Easy con'd

- Guide Should Address Restricted Release
 - NO -- not an operational consideration
 - §20.1403(a): **demonstrate** that **further reductions** in residual radioactivity ... would result in net public or environmental harm
 - §20.1403(b): **made provisions** for legally enforceable institutional controls
 - §20.1403(d): The licensee **has submitted** a decommissioning plan or License Termination Plan to the Commission



Relation to NEI-07-07

- Old

~~— Staff has reviewed NEI's ... GPI and compared it to the DPR requirements. Based on this review, staff concludes that Objective(s) ... meet DPR objectives. Therefore, nuclear power plant licensees that have implemented NEI's GPI ... have an adequate subsurface monitoring program as part of meeting the requirements of 10 CFR 20.1501(a), and a recordkeeping system in accordance with 10 CFR 20.1501(b).~~



NEI-07-07 (Con'd)

- New
 - NEI's voluntary Industry Groundwater Protection Initiative (GPI) in NEI 07-07, provides an approach acceptable to the staff to meet the requirements of the DPR.
(which is to have enough money to clean it all up)



How Much Do I Have To Do

- Function of Potential Releases

- Volume

- On Site At A Time
 - Process Throughput

- Concentration(s)

- “As Received”
 - In Product

- Form

- Gaseous – Particulate
 - Liquid
 - Solid

It Depends !



Decommissioning Groups

Group	Brief Description	Examples
1	Licensed material not released to environment, did not cause activation, did not contaminate areas.	used only sealed sources
2	residual radioactivity on building surfaces, soils. site <u>meets the screening criteria</u>	loose radioactive material routinely cleaned up (R&D)
3	<u>meets the screening criteria</u> , but needs amendment or added procedures to remediate	occasional released within NRC limits (broad scope)



More Groups

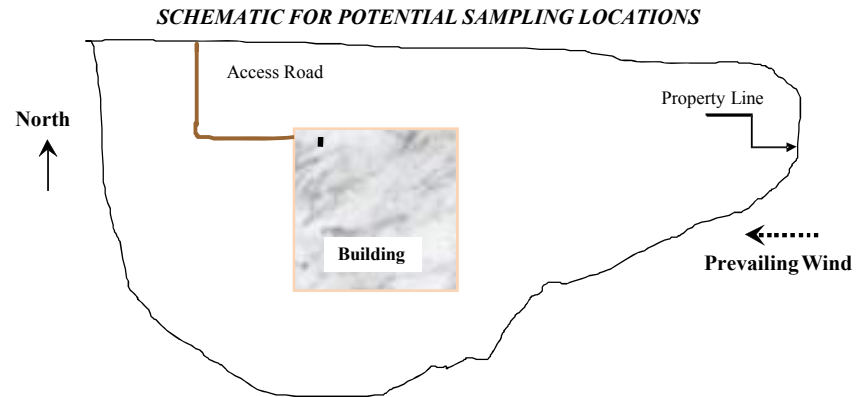
Group	Brief Description	Examples
4	residual radiological contamination of building surfaces or soils, but not ground water. Site meets unrestricted use levels by site-specific dose models	sites released radioactive material within NRC limits; some releases above NRC limits (e.g., waste processors)
5	Group 4 <u>plus</u> ground water	large amounts of loose or dissolved radioactive material on site (e.g., fuel cycle facilities)



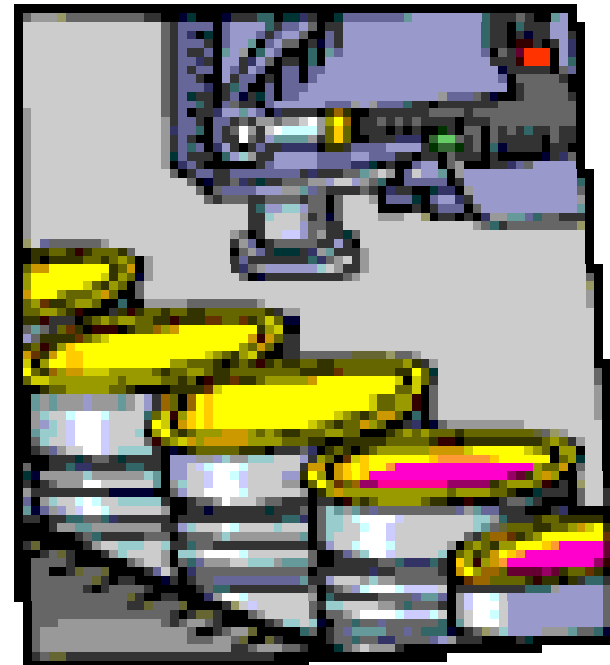
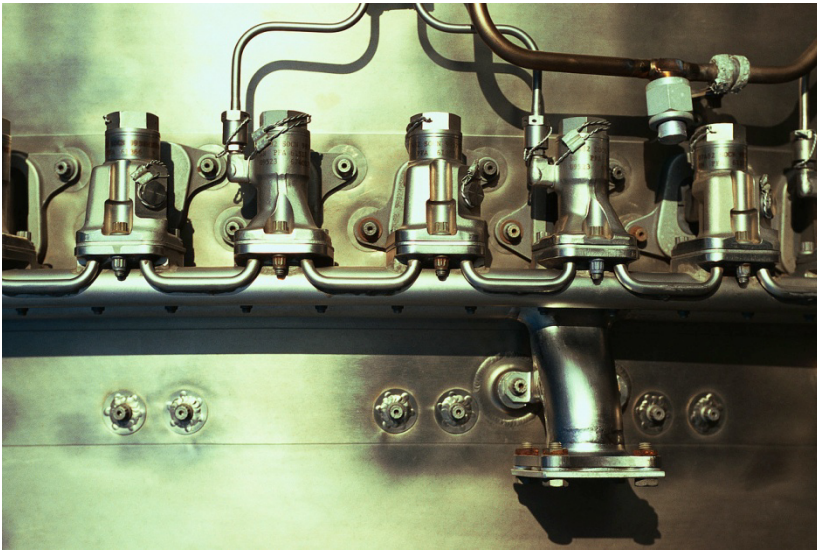
How Much Do I Have to Do

Section \ Group	3	4	5
Previous Decommissioning Activities/ spills	1	1	2
Contaminated Structures, Systems, Equipment	2	2	2
Surface Soil, Subsurface Soil Contamination	1	1	3
Surface Water, Ground Water	1	1	3
Decommissioning Cost Estimate	1	2	2

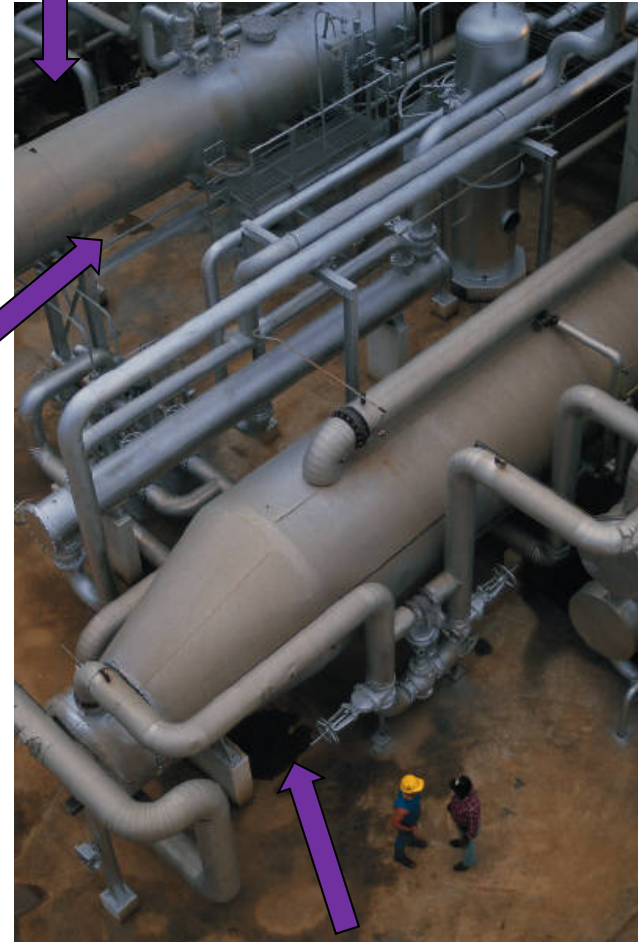
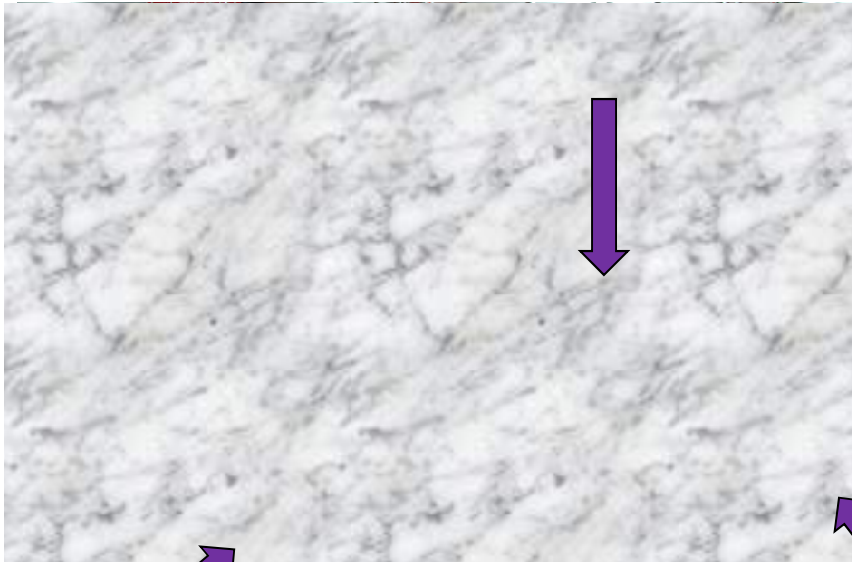
Determining Where To Sample



Potential Sources



Inside Locations



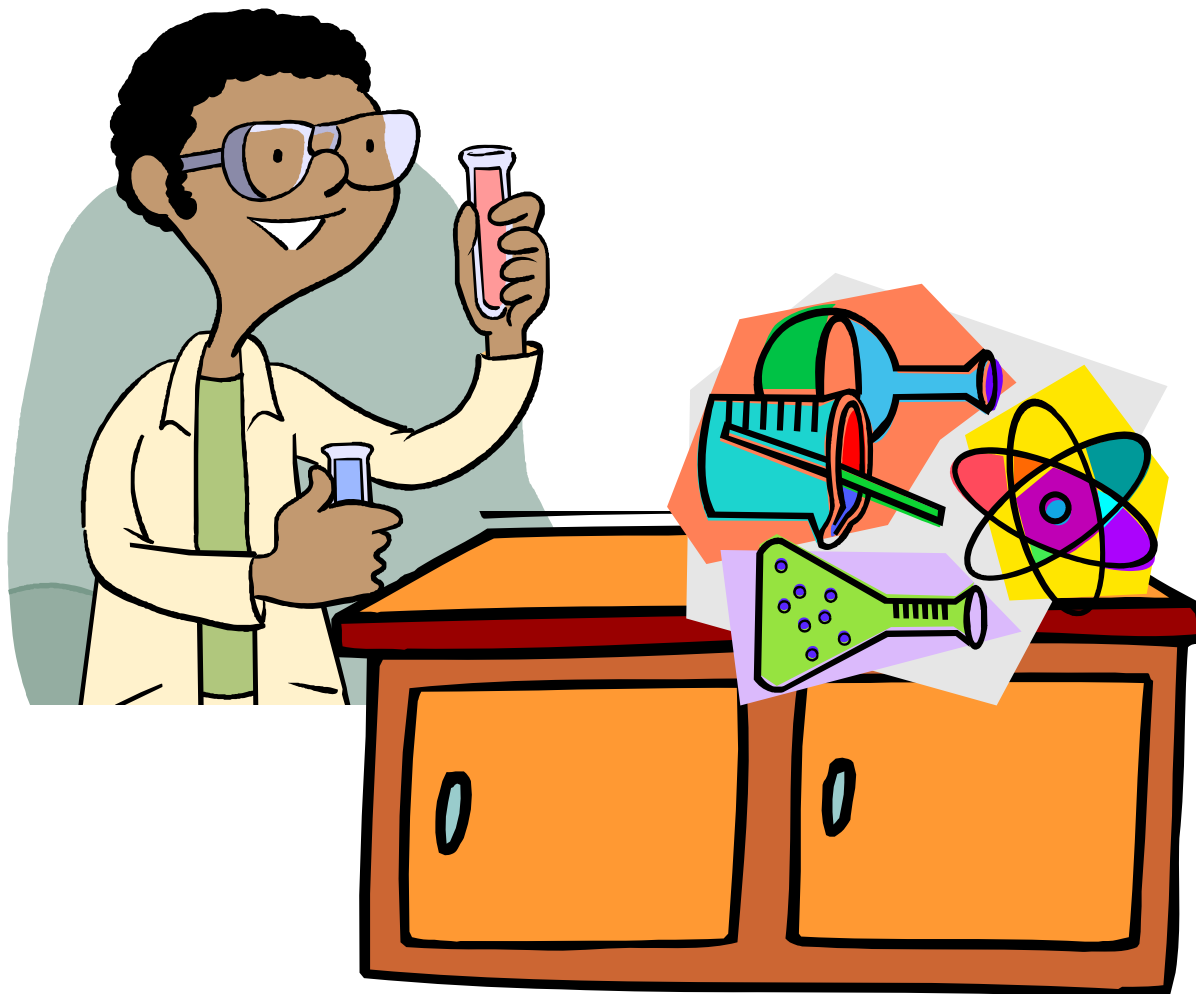


The Ideal Laboratory





The Real Laboratory





Outdoor Surveys

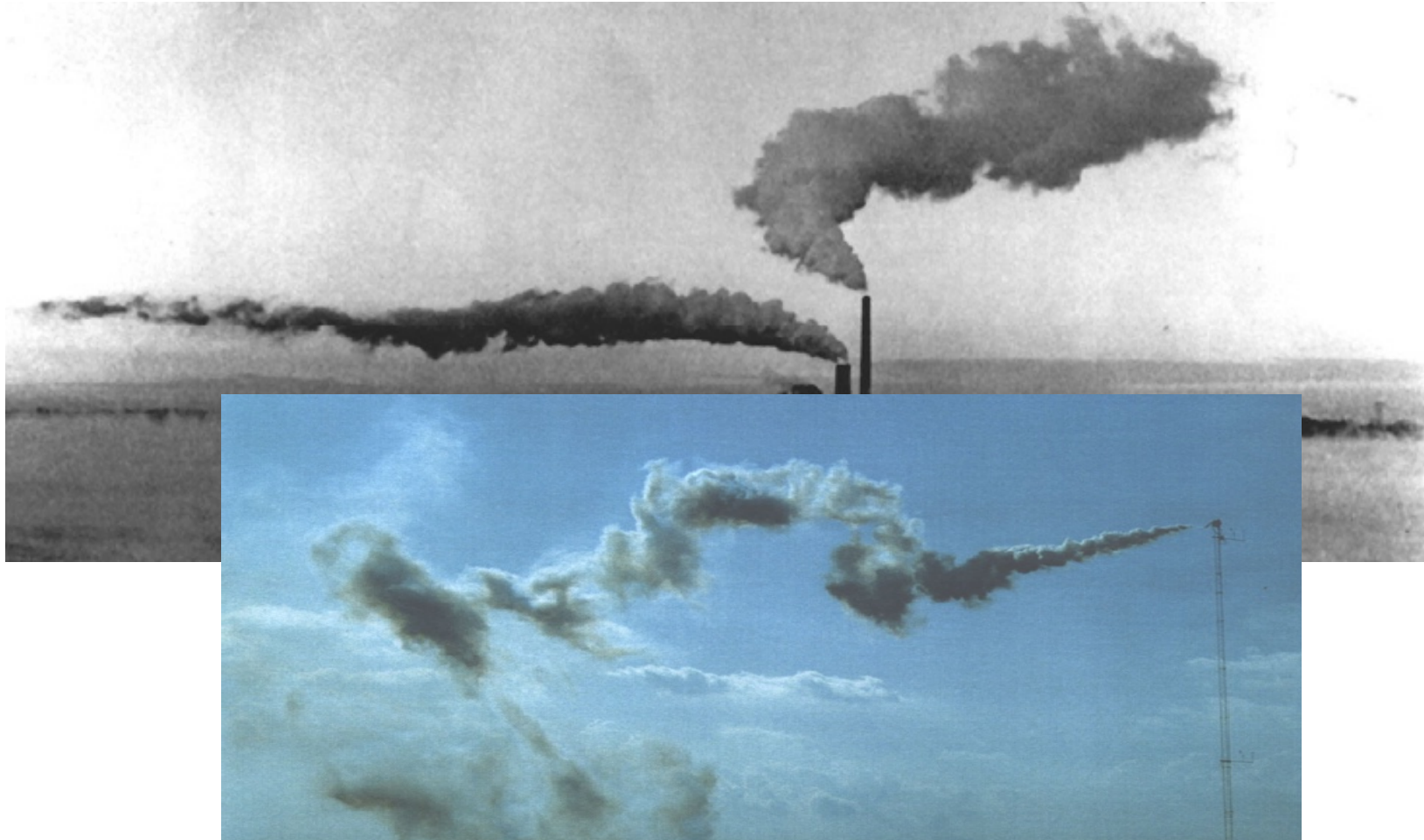


Sampling -- Stack Release Examples



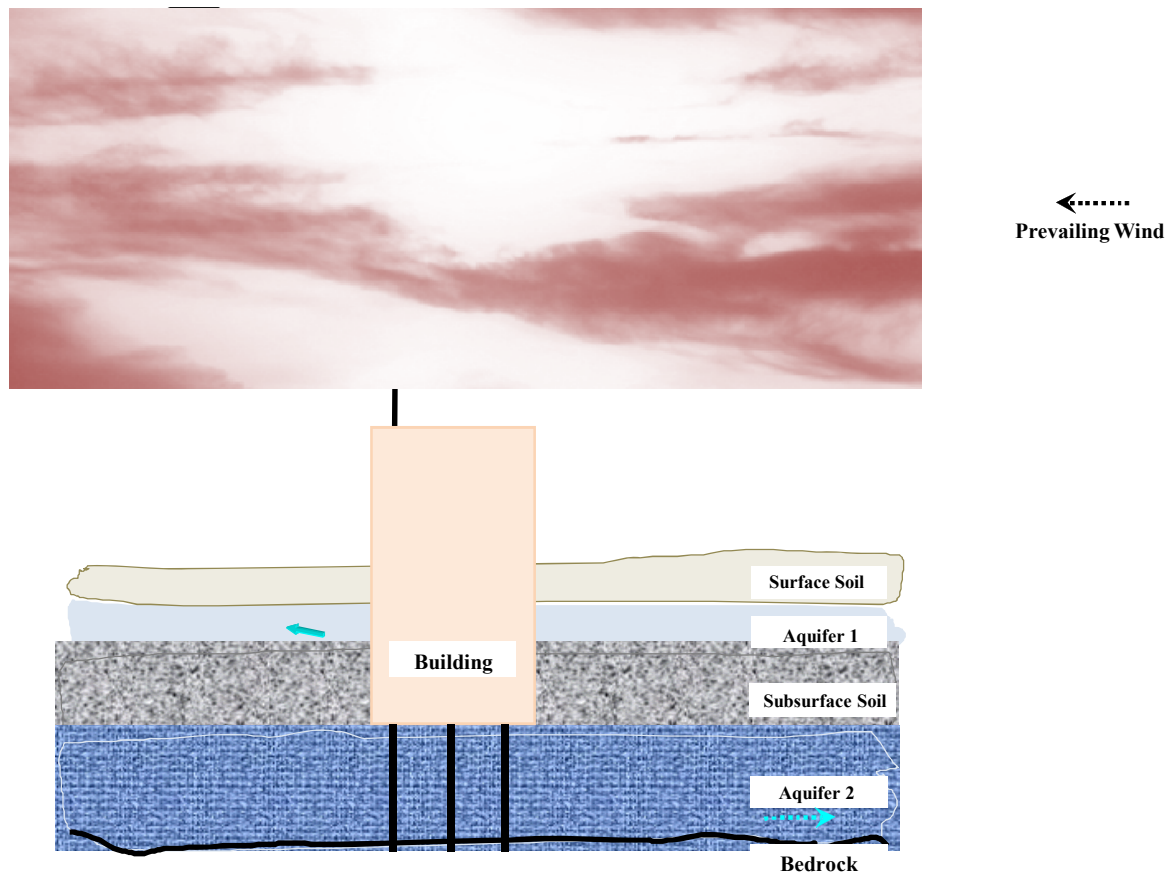


More Stack Releases



Outside Ground Sampling

SCHEMATIC FOR POTENTIAL SAMPLING LOCATIONS

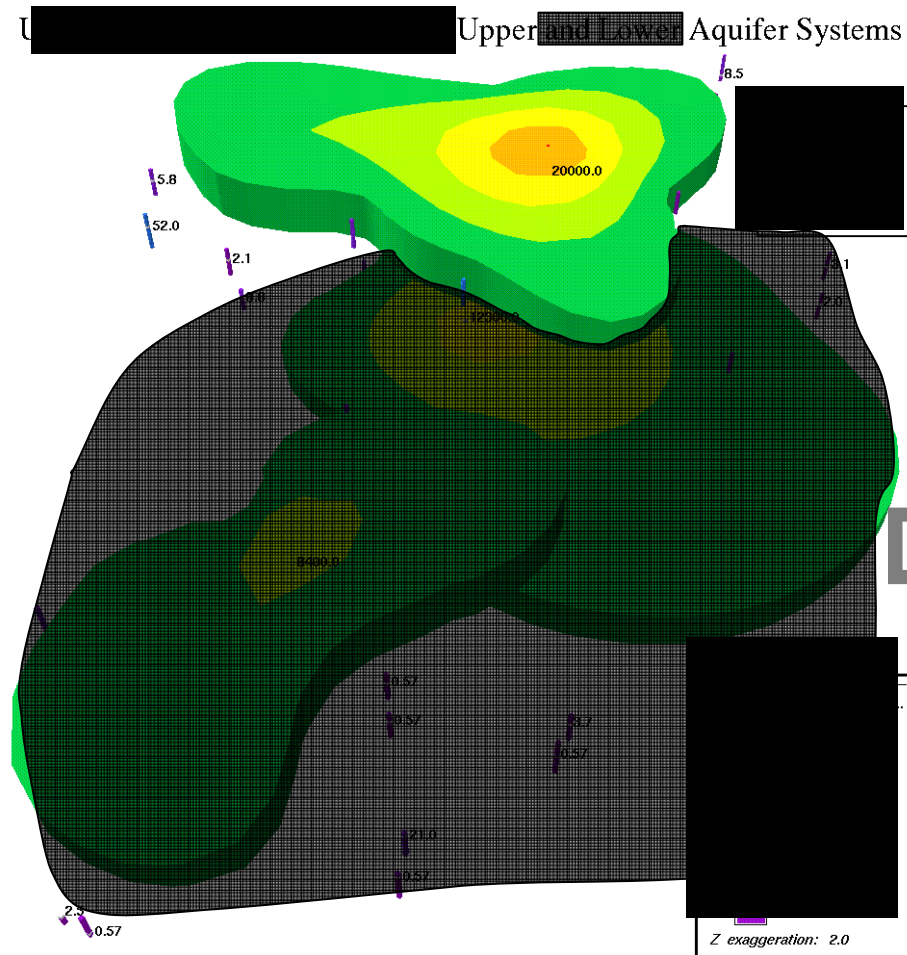




Outdoor Surveys



Subsurface



It
Depends
!



Off-Site

- NRC Has Statutory Authority To Protect Public Health And Safety In The AEA
- No Specific Regulations Requiring Licensees To Remediate Off-site
- Decisions On Site-specific Basis



QUESTIONS



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Dripping Water Wears Through Rock

NOT

THE END