Exercises

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International Atomic Energy Agency

Overview

- Four separate scenarios
  - Splitting into four groups
  - 2 exploration
  - 2 mining
- Each scenario you are given details of an application for either mining or exploration

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The Exercise

- Review the application documentation & list all the possible radiation sources and pathways
- Based on these pathways come up with the types of radiation controls you would like to see in place
- Detail the type of monitoring program you would like to see
- Produce a table of contents for a Radiation Protection Program
- Make a list of any additional information you would like to request from the operator

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Scenario 1

- A new uranium explorer has been granted a tenement in your country and wants to commenced a Air Core drilling program
- The program consists of 42 holes at 200m centres to a maximum depth of 200m
- The program is planned to run for 3 months
- The operator plans to set up a small camp in the region
- The camp will include sample storage
- Each sample will be spilt in a location near the camp
- Half the sample will be transported to a laboratory for analysis
- The other half will be stored and at the completion of the campaign be transported to a more permanent storage at the operations head office

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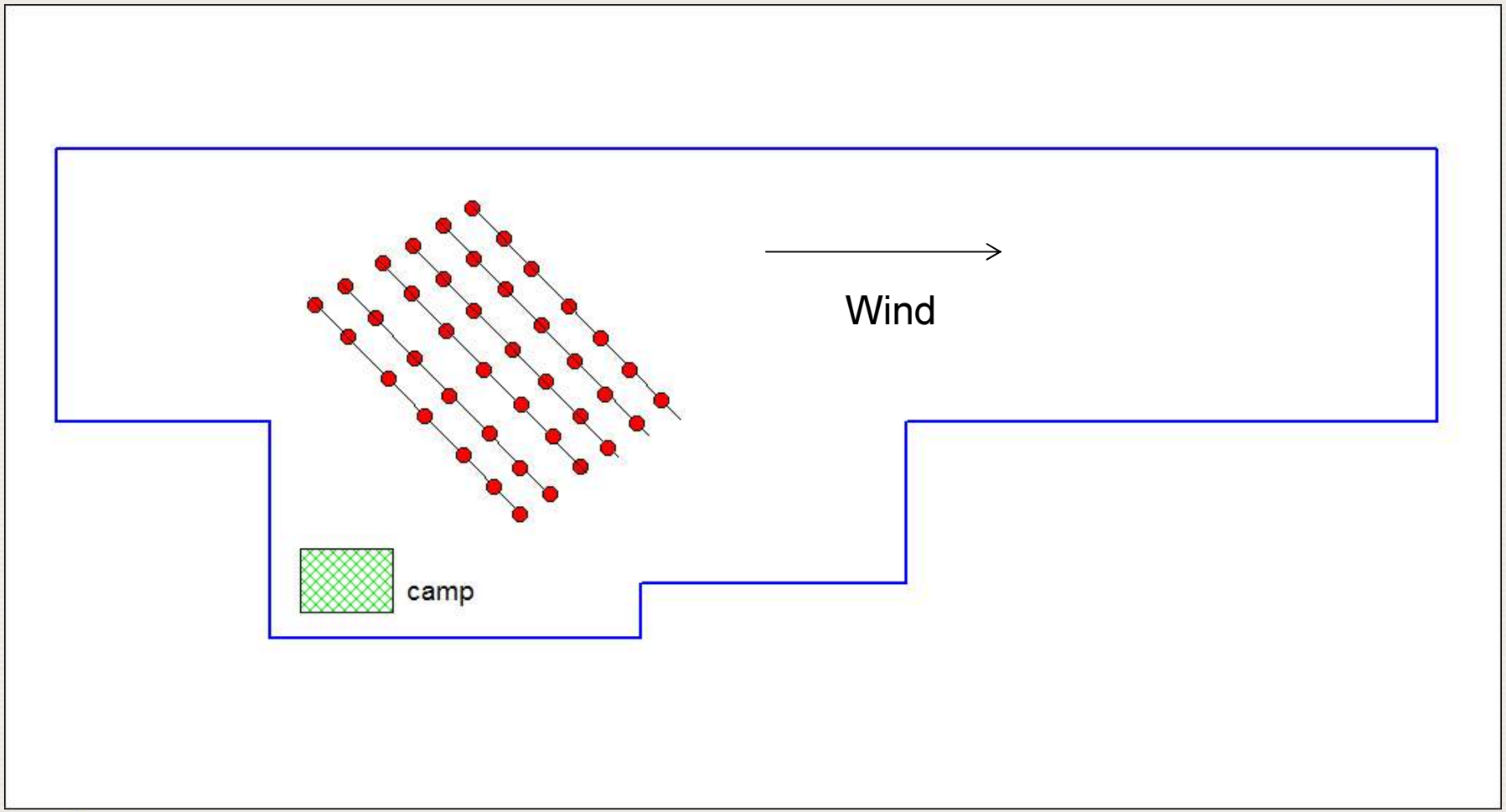
Scenario 1



Scenario 2

- A uranium explorer wants to further characterise a calcrete style surface deposit to see if it is economical to proceed
- The program involves the digging of a small test pit (trench)
- It also involves some on site test work on uranium extraction methods
- The program is planned to run for 6 months
- The operator plans to set up a small camp in the region
- The camp will include sample storage and laboratory setup
- The location of the camp is down wind of the test pit
- At the completion of the campaign some samples will be transported to off site but the majority of the material will be buried back in the trench and the area rehabilitated to the natural state

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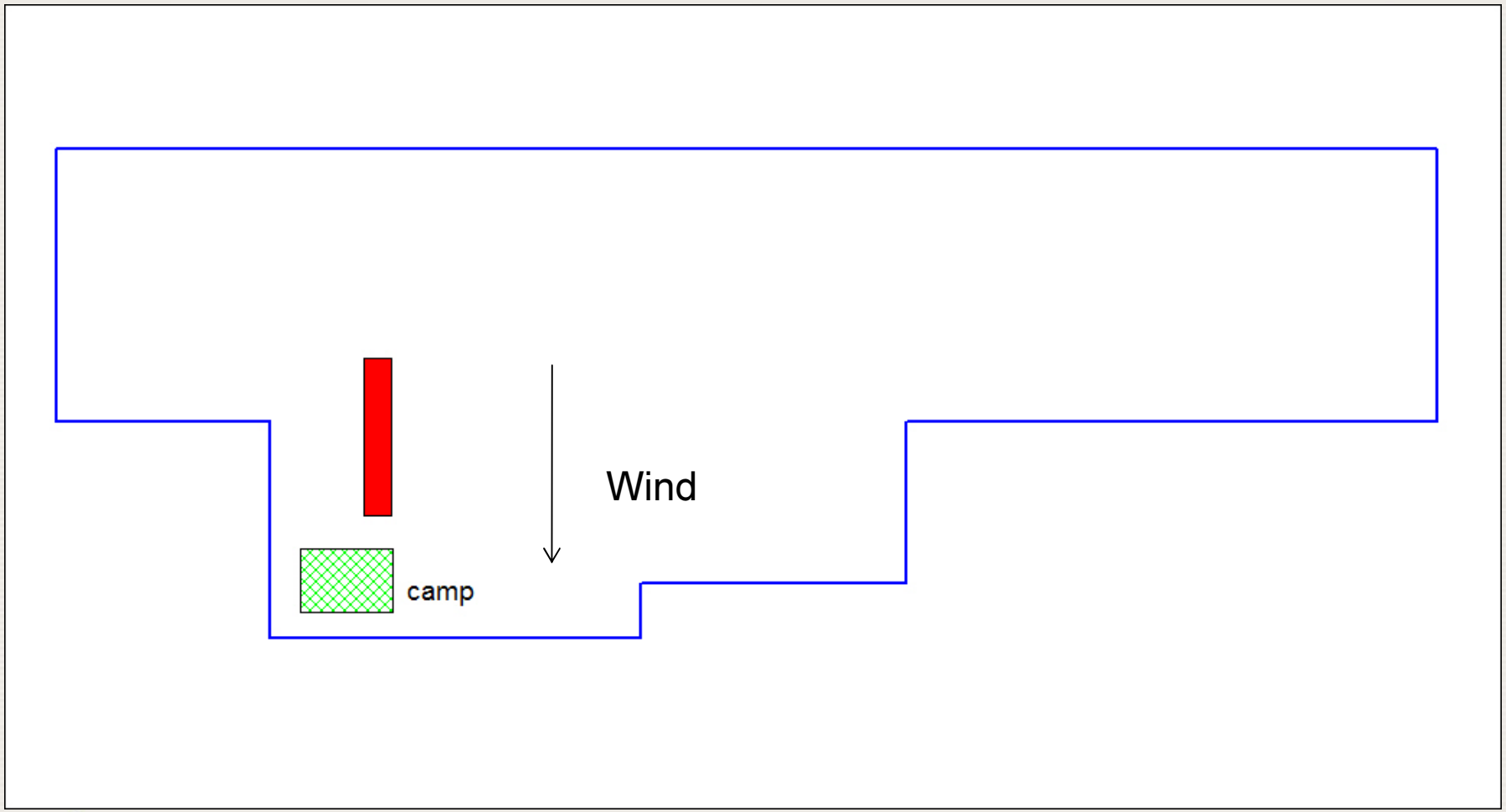
Scenario 2



Scenario 3

- A company has applied for an open pit operation license in your country
- The process will be
  - Open pit Mining with shovels and trucks
  - Crushing circuit with conveyors and screens
  - Milling and carbonate leaching
  - Production of Uranyl Peroxide (UO4) and low temperature drying
  - Tailings will be stored in a surface tailings dam
  - Drums of product packed and trucked across country to port for shipping
  - There is a local community near to the mine
  - Offices will be set up
  - workers will be on a shift basis and stay at a camp when on shift

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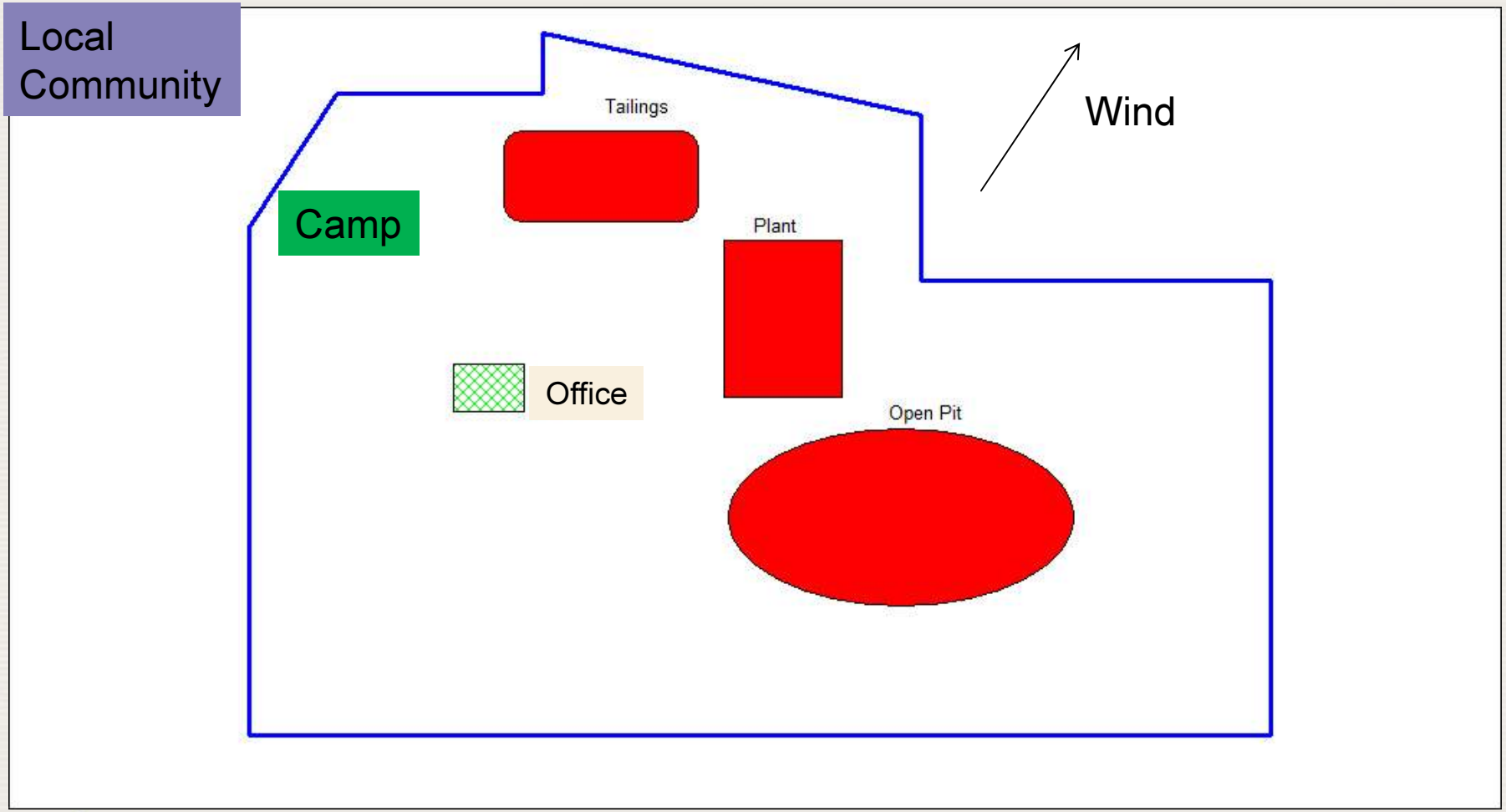
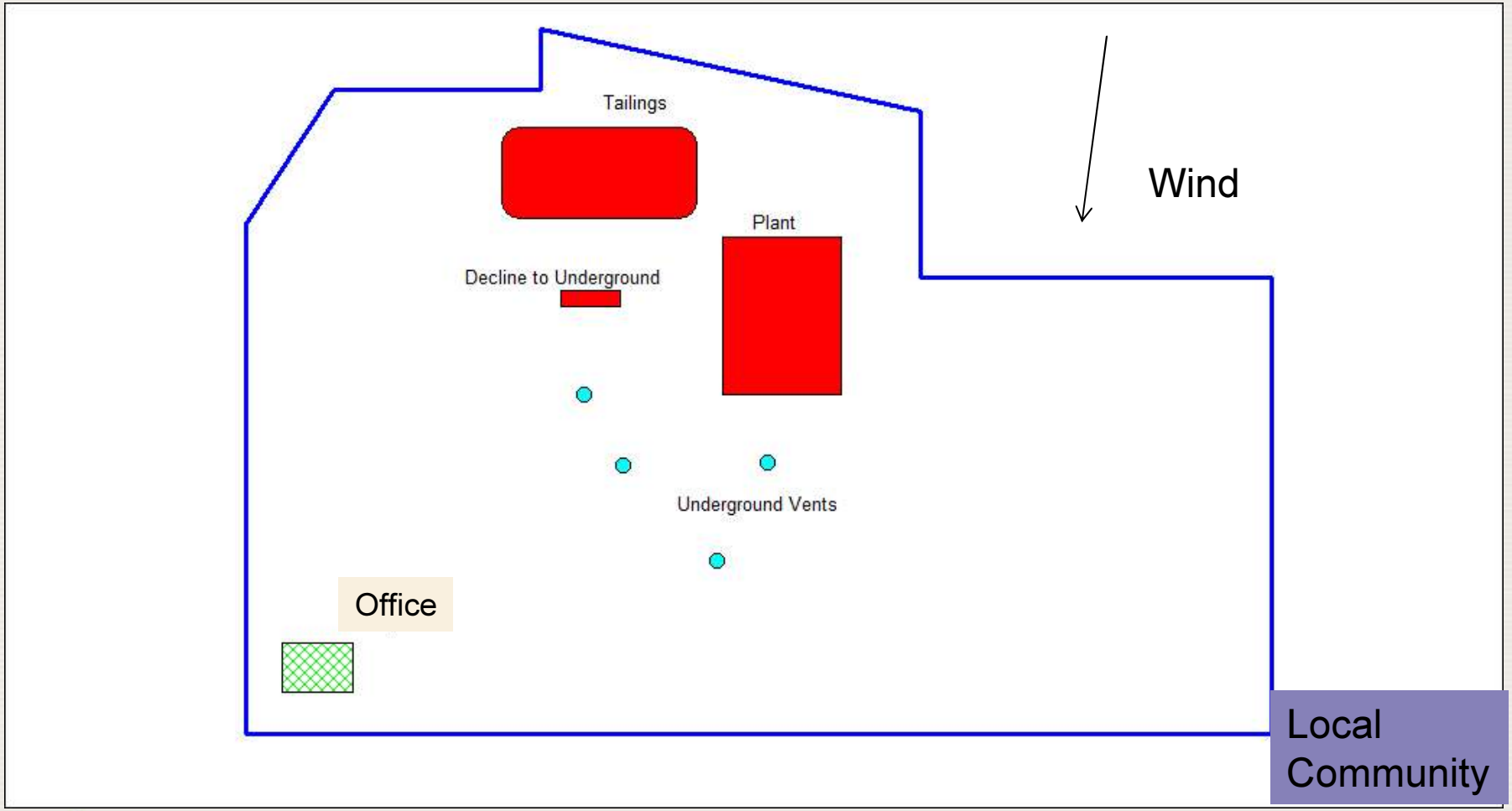
Scenario 3



Scenario 4

- A new underground uranium mine has applied for a license in your county
- The process will be
  - Mining and crushing underground
  - Transport to surface using shafts and conveyors
  - Milling and acid leaching above ground
  - Production of Ammonia Di-urinate and product high temperature roasted
  - Tailings will be stored in a surface tailings dam
  - Drums of product packed and trucked across country to port for shipping
  - There is a local community near to the mine
  - Offices will be set up and workers will be bussed in and out

Scenario 4


Tailings
Wind
Plant
Decline to Underground
Underground Vents
Office
Local Community