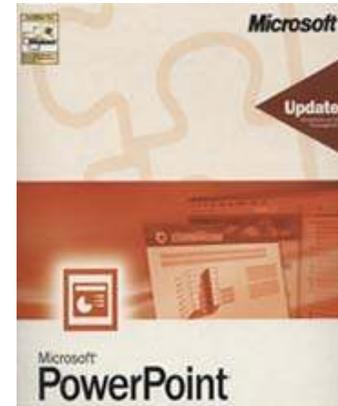
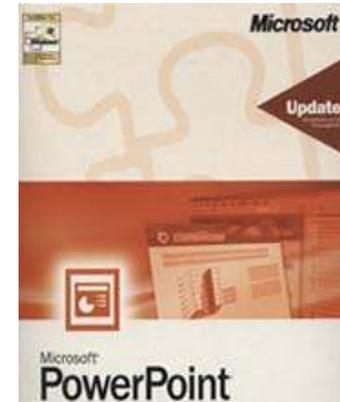

Underground Milling of High-Grade Uranium Ore

Chuck Edwards
Director, Metallurgy
AMEC Americas Ltd.



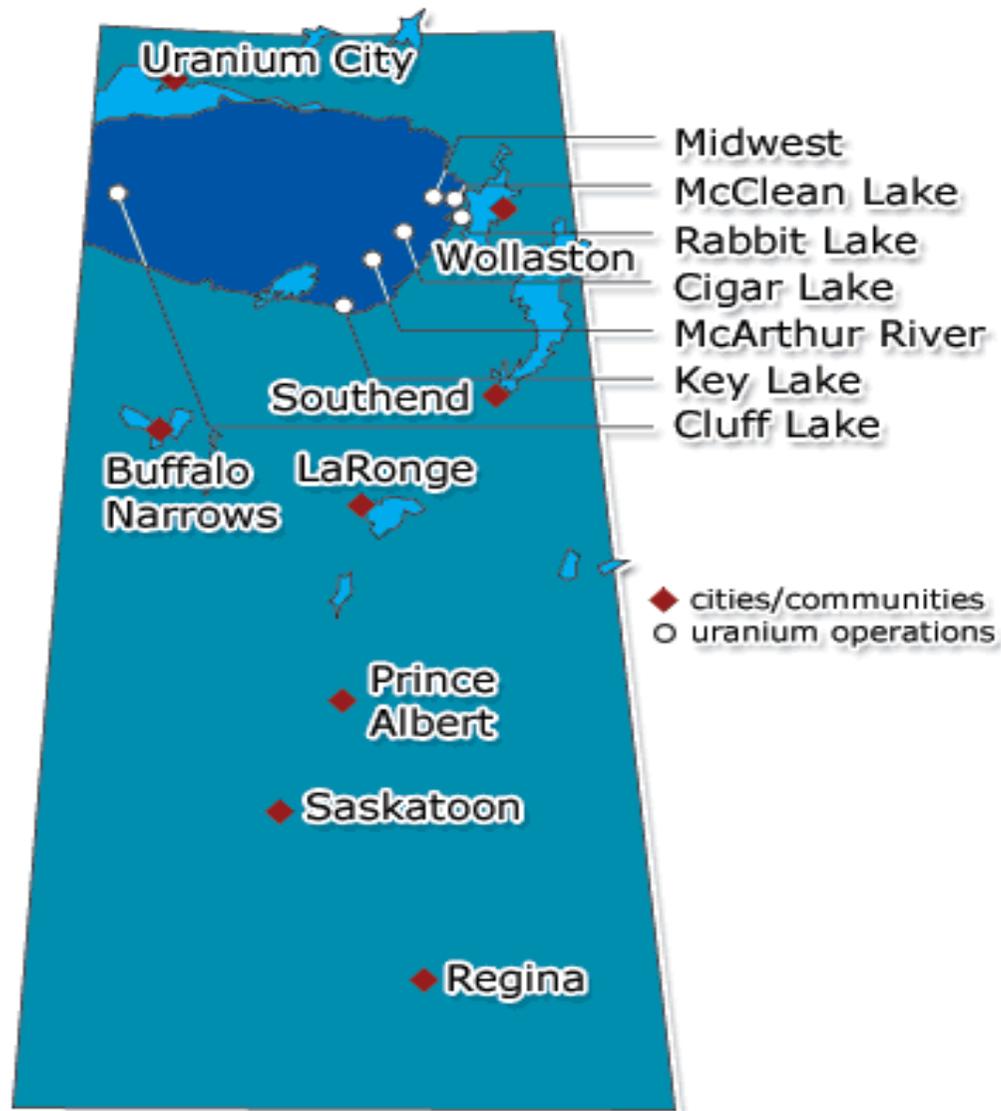
Microsoft PowerPoint

Warning:



Side effects include drowsiness, nausea, light-headedness, and, in rare instances, a diminished will to live.









Underground Milling of High-Grade Uranium Ore

?





Serene





L'audace. L'audace. Toujours l'audace.

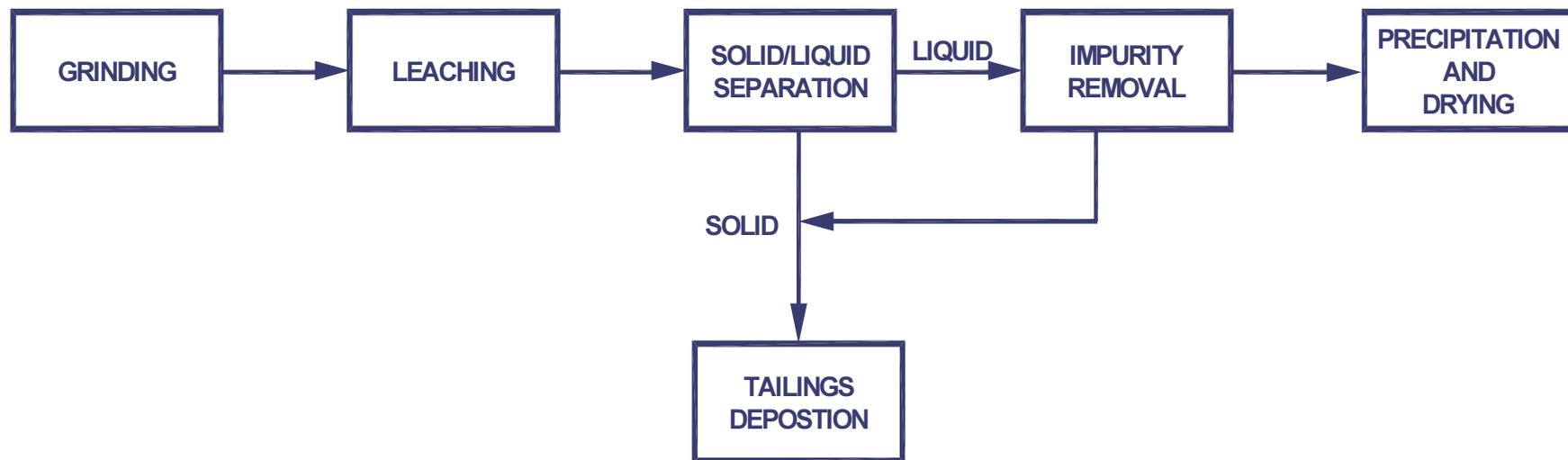


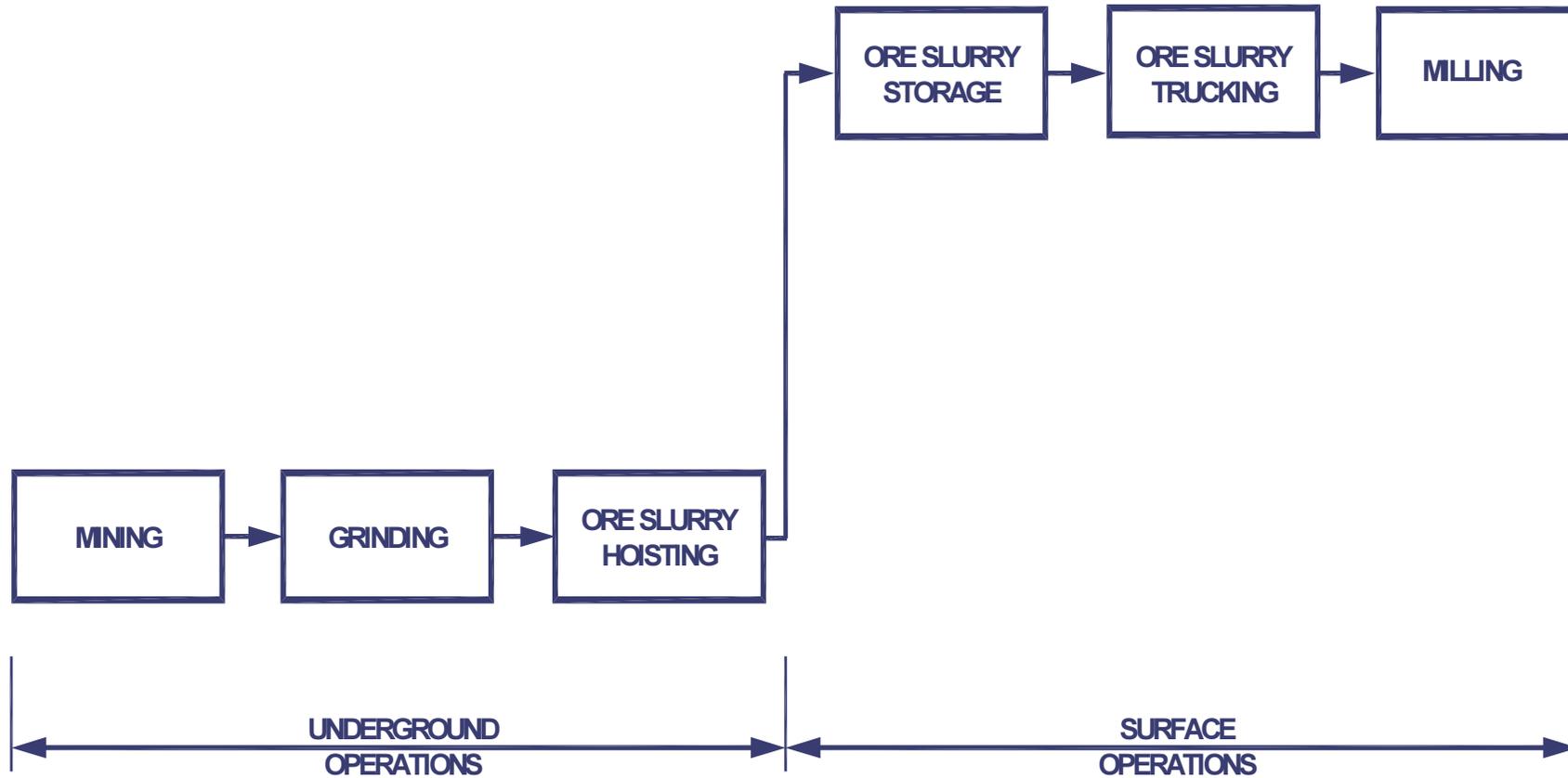
Let's put the whole \$%# mill underground!

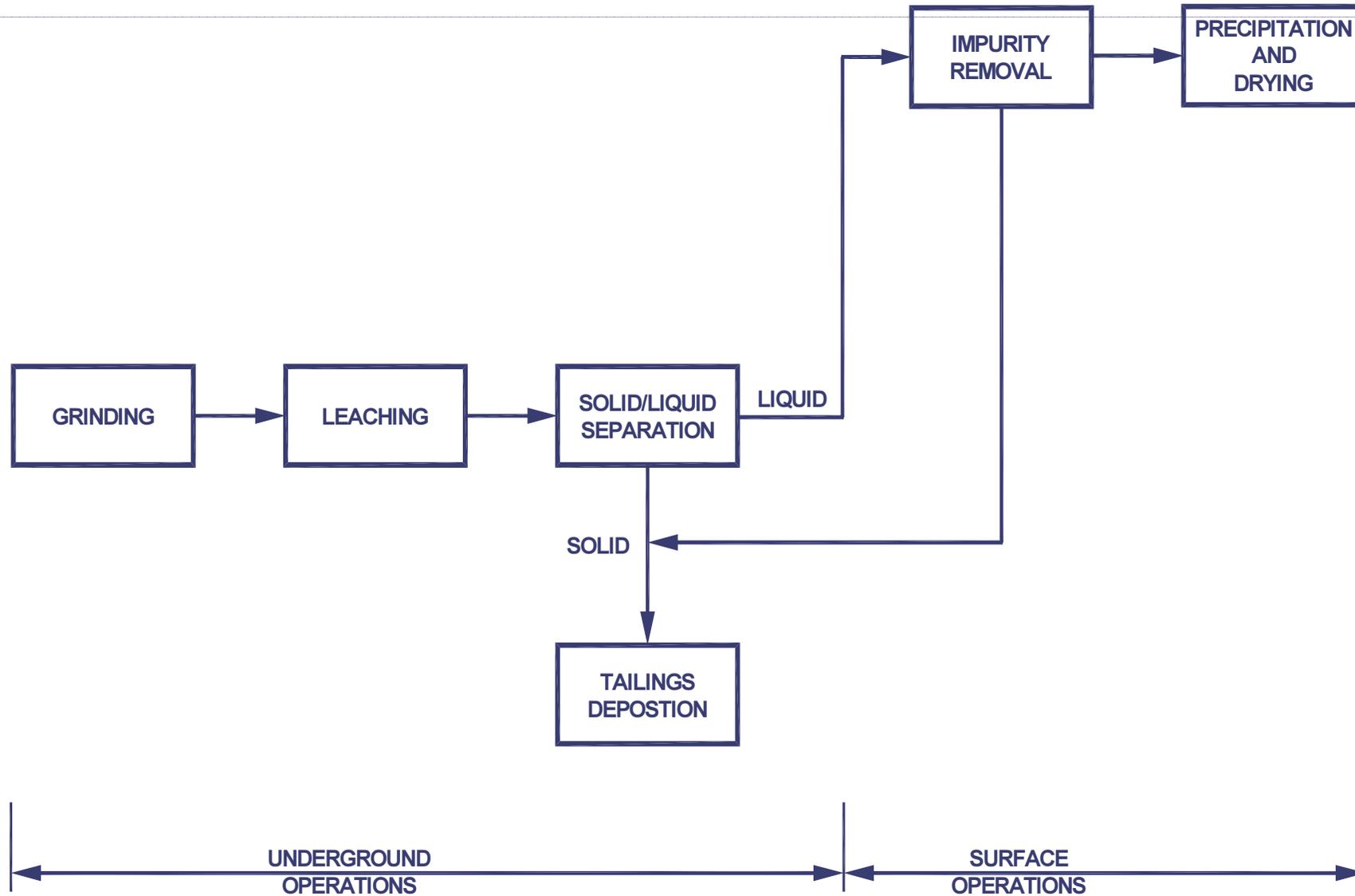


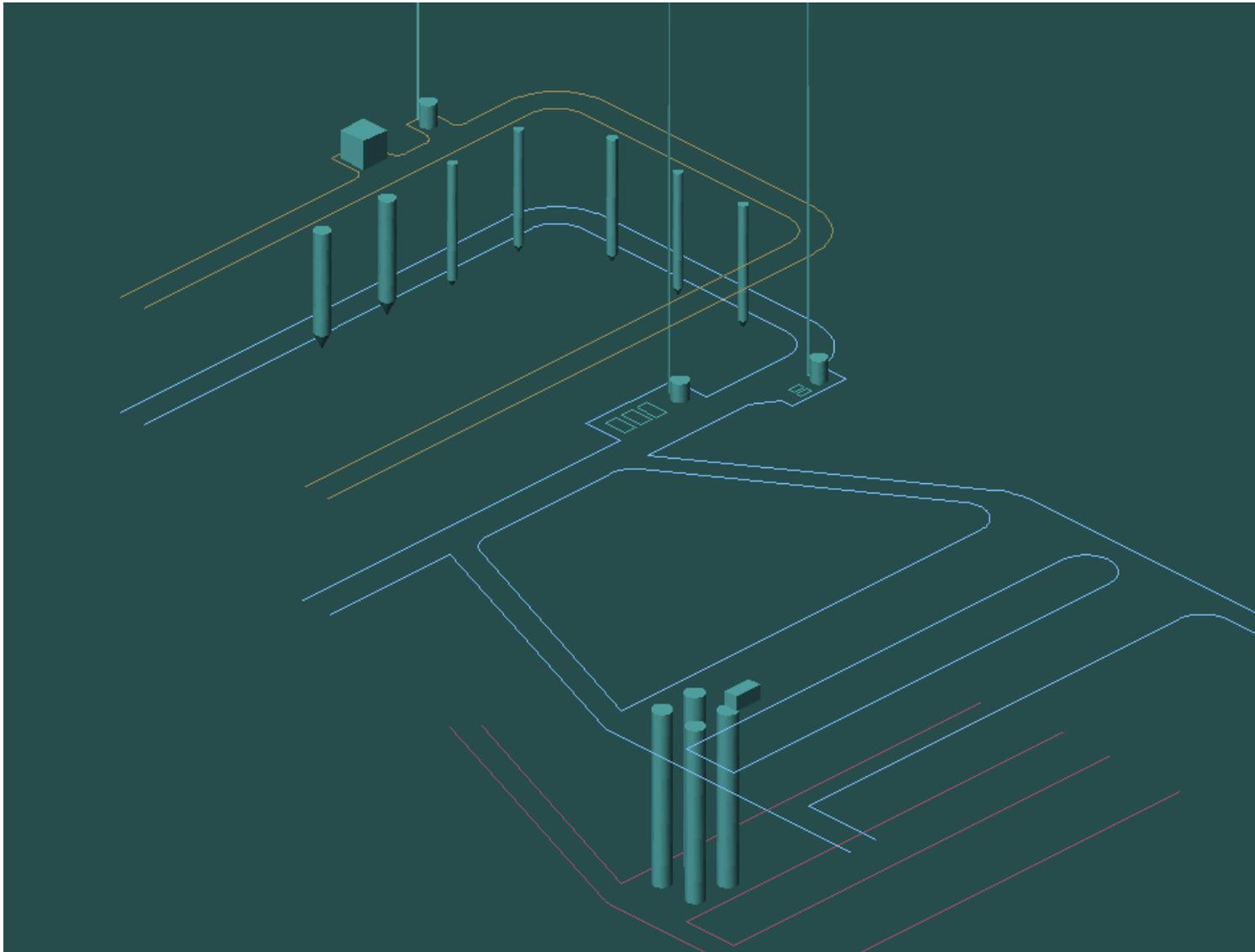




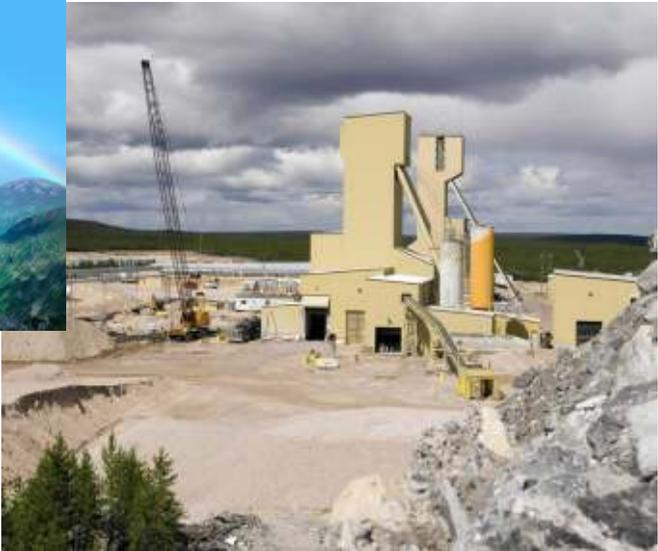
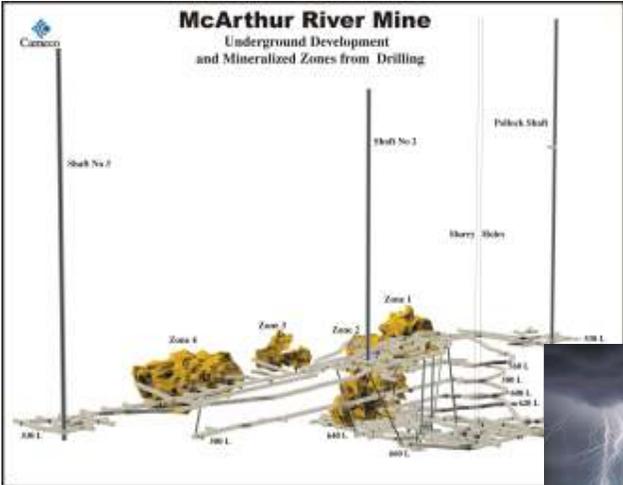




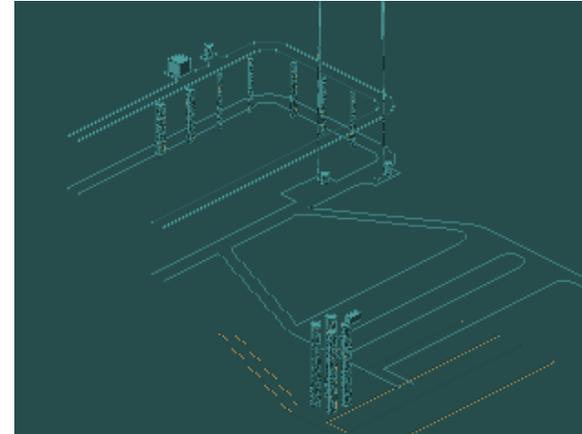




Your mine might flood!

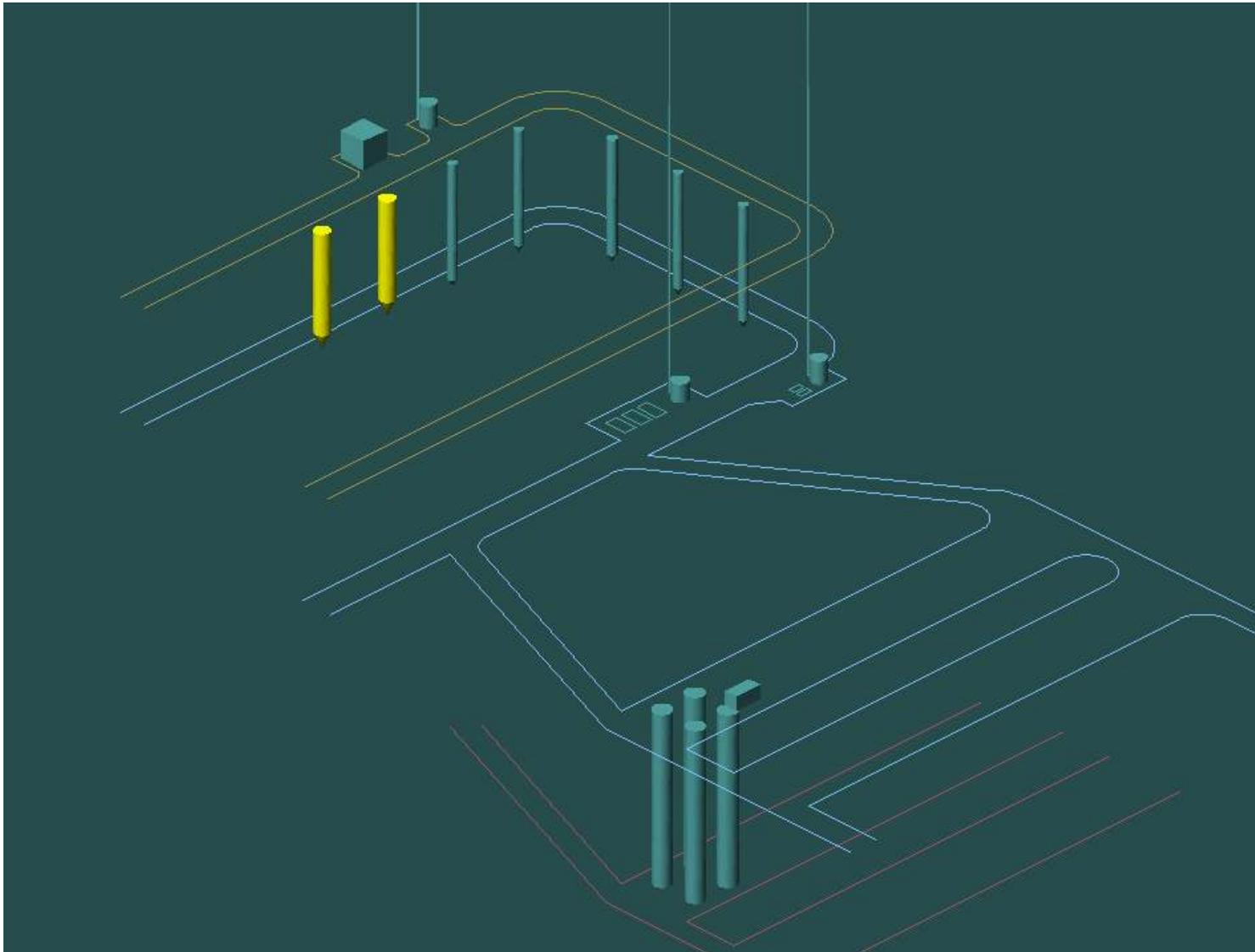


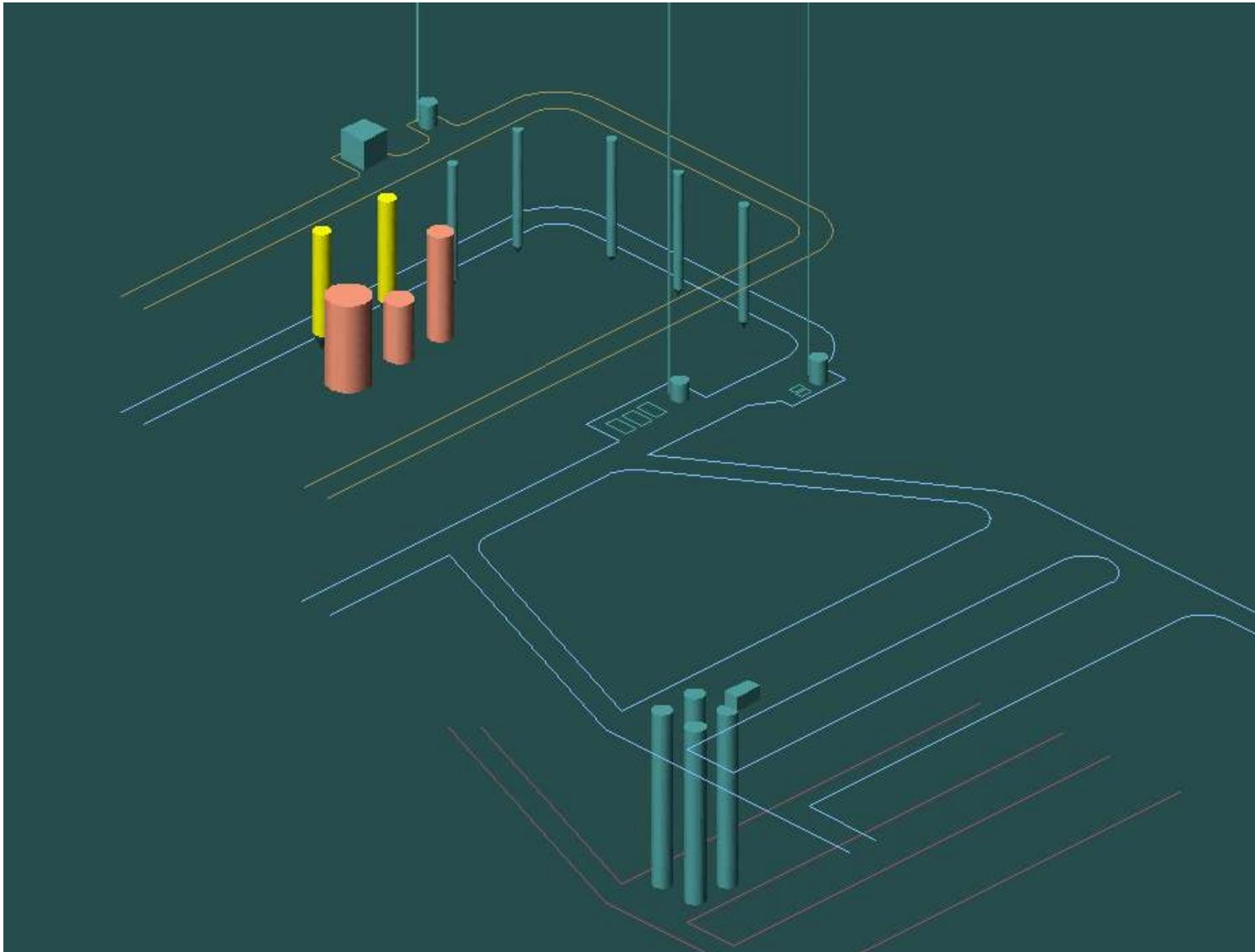
- ◆ **Water handling**

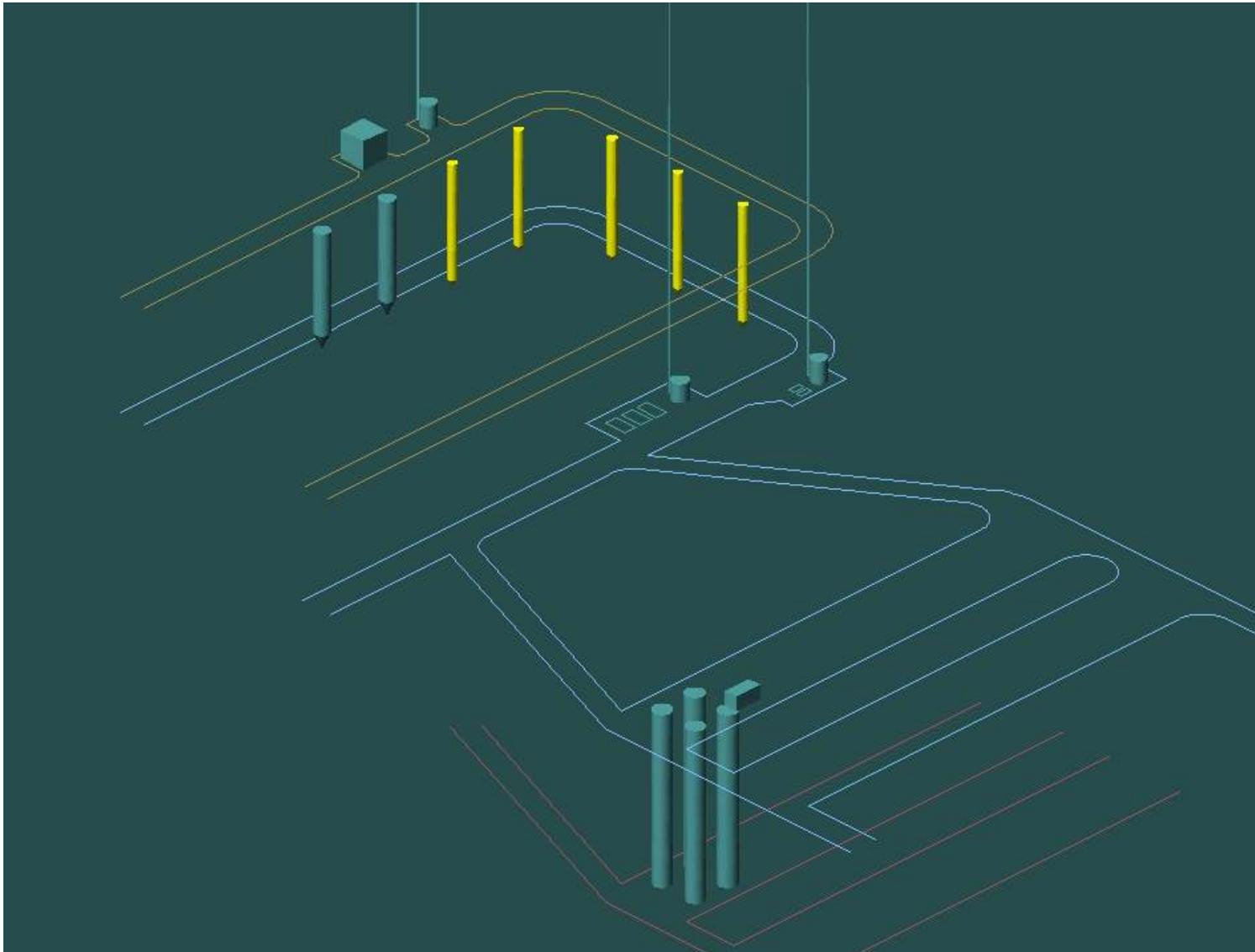


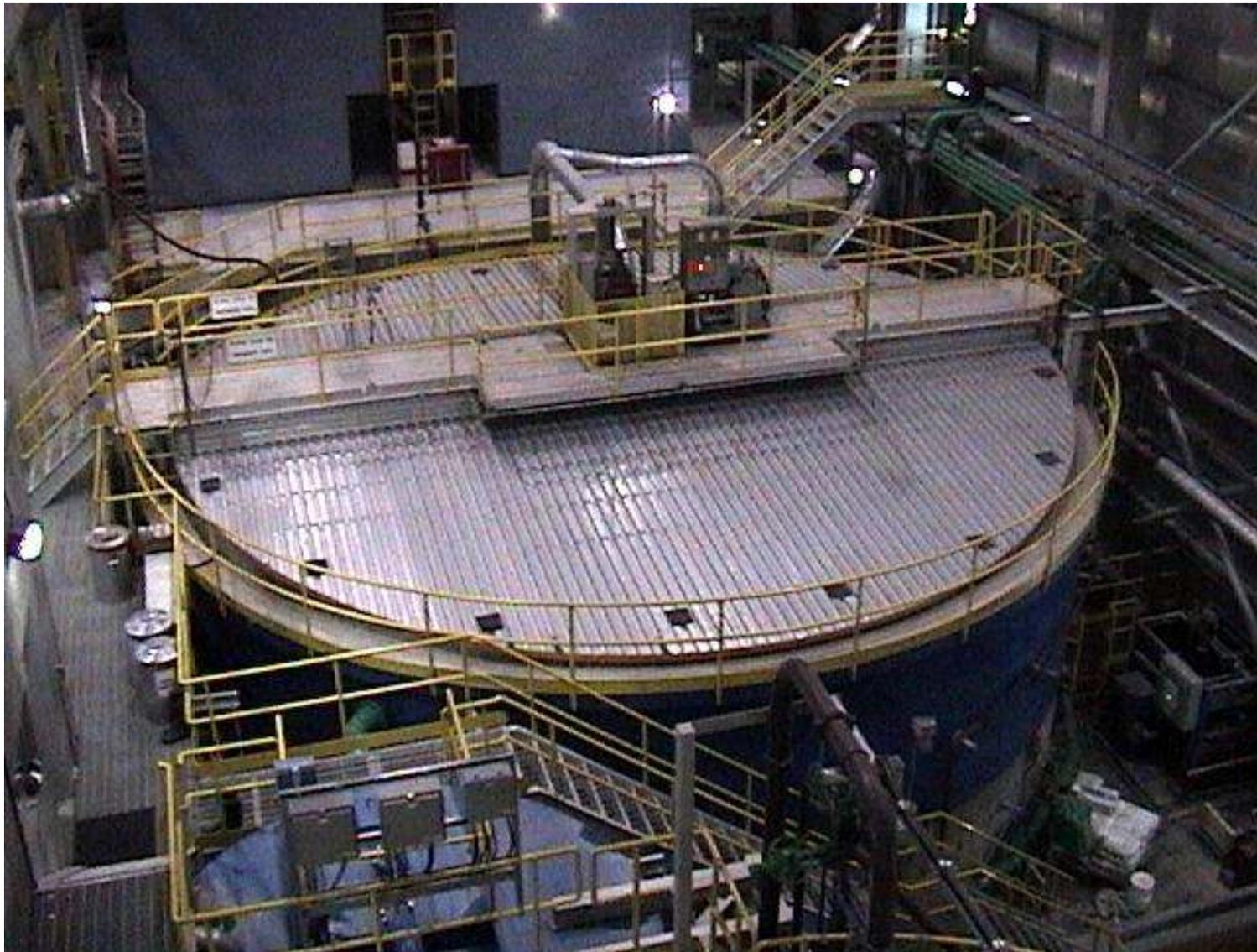
- ◆ **Water pumping/treatment**

- ◆ **Process equipment location**



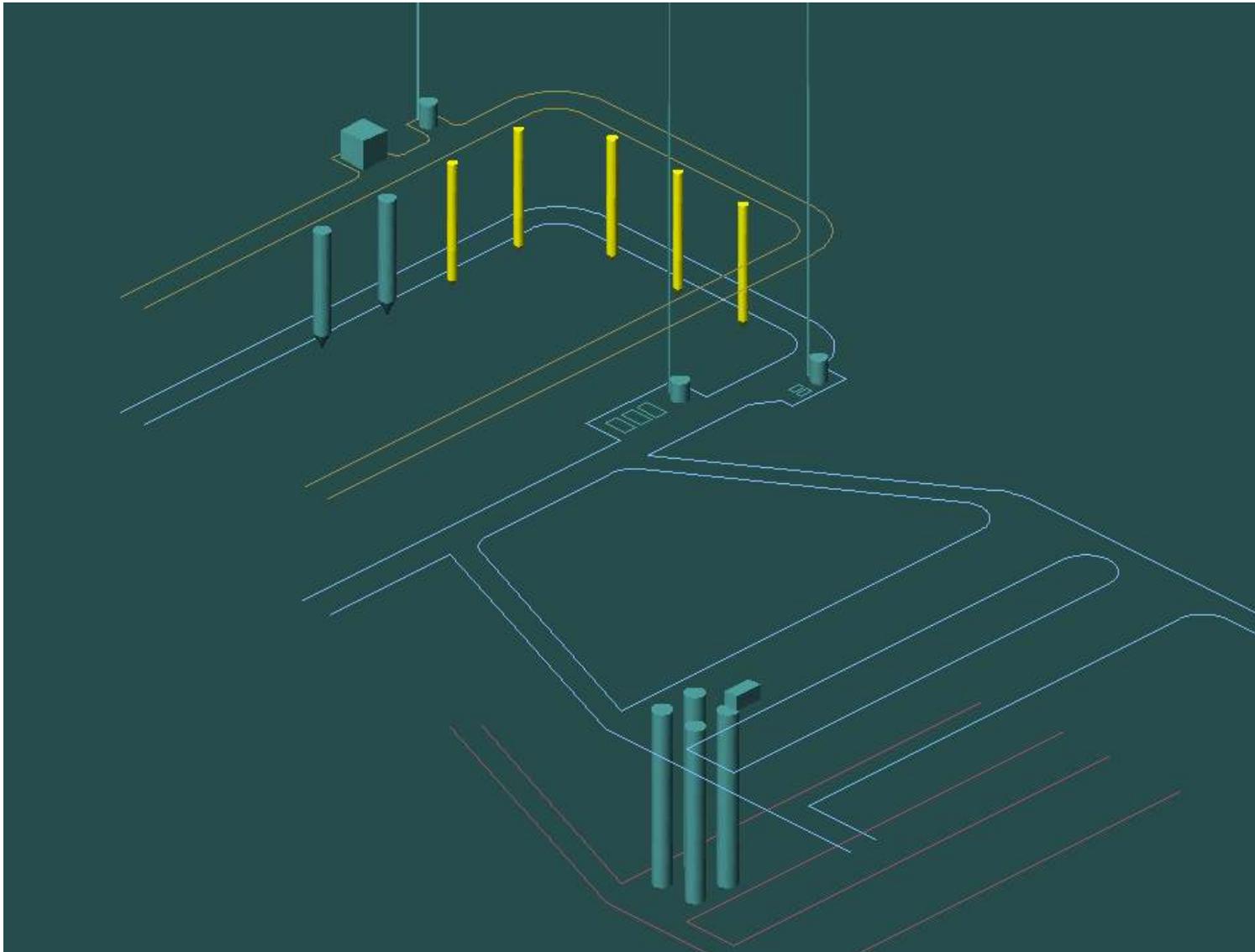


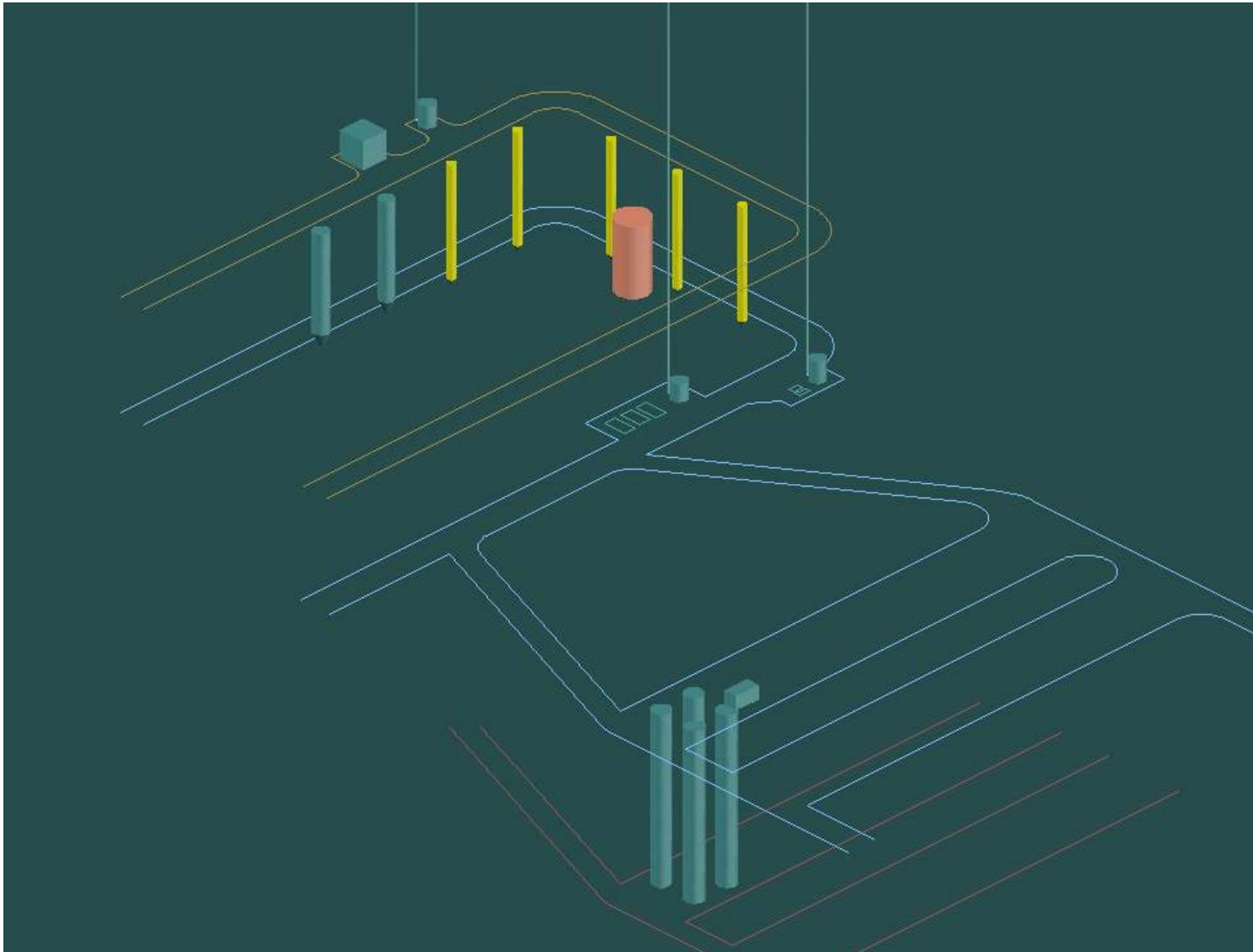


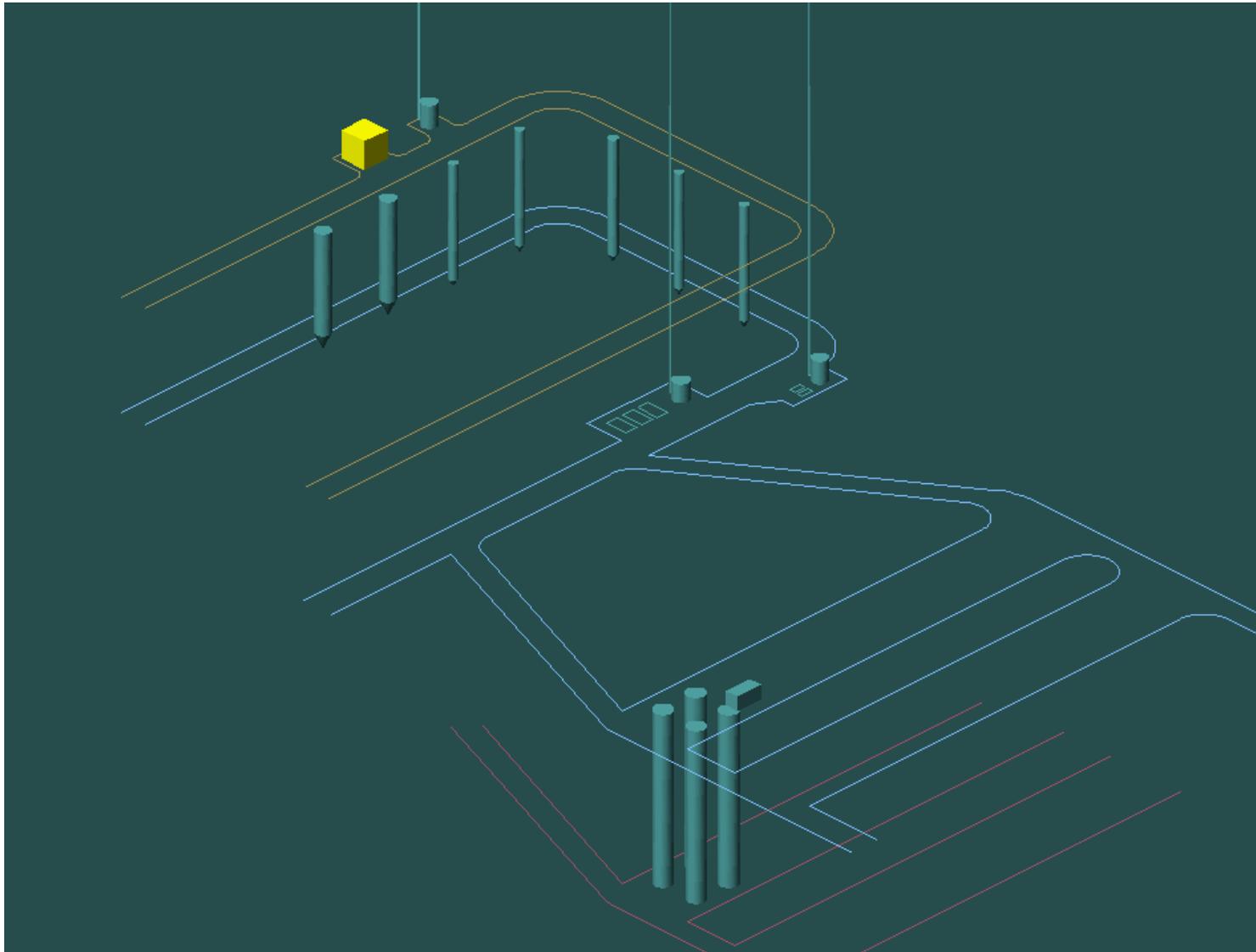


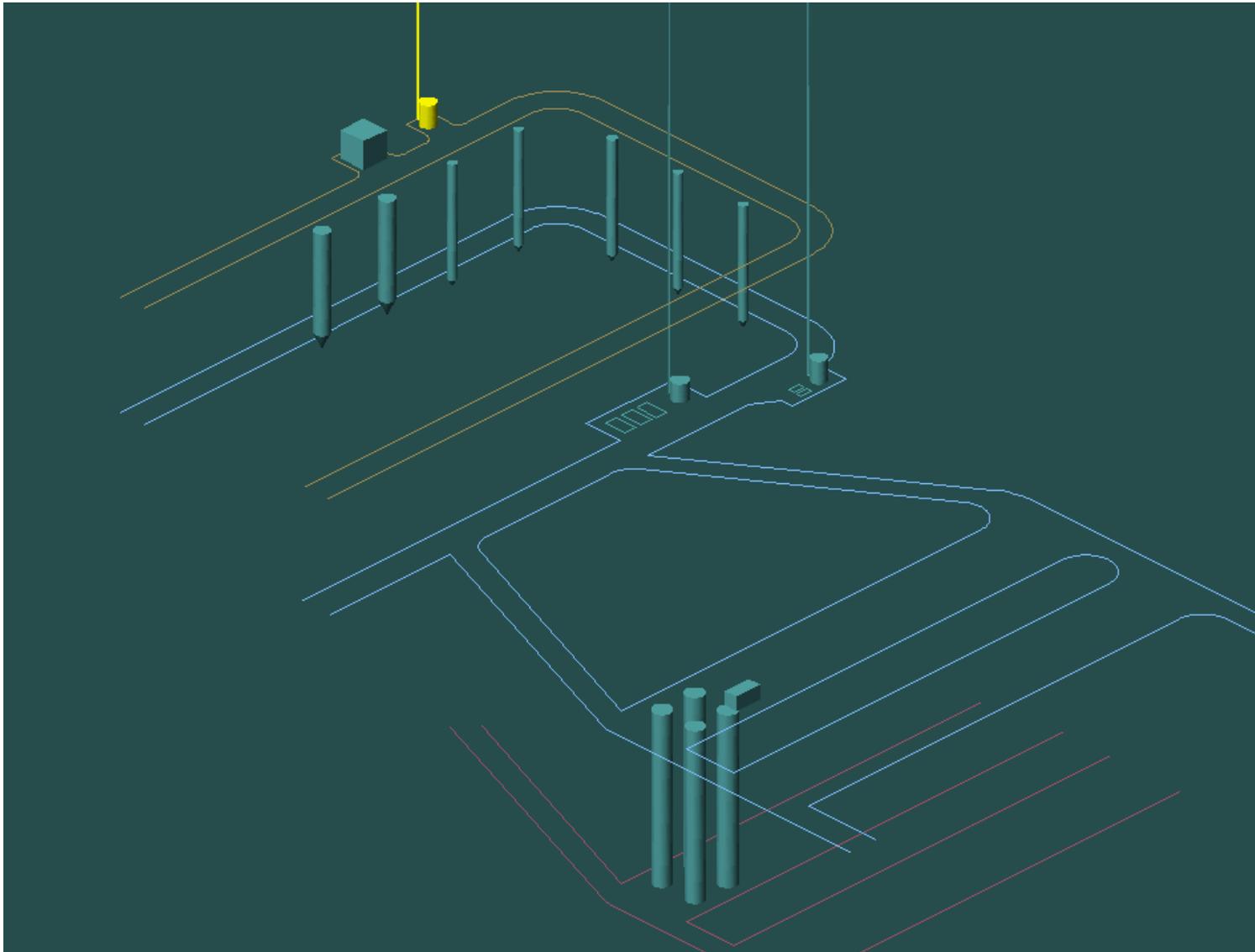


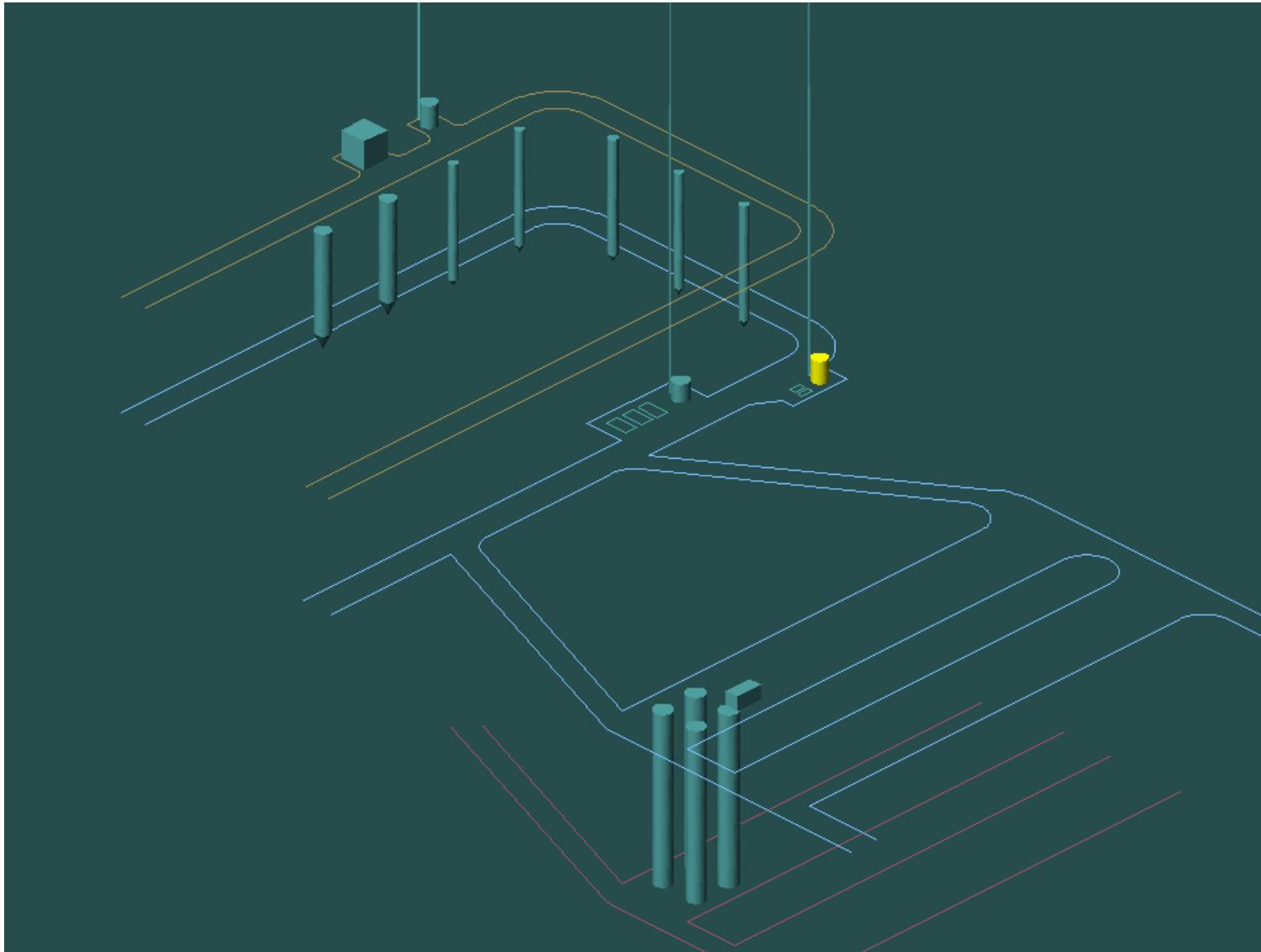


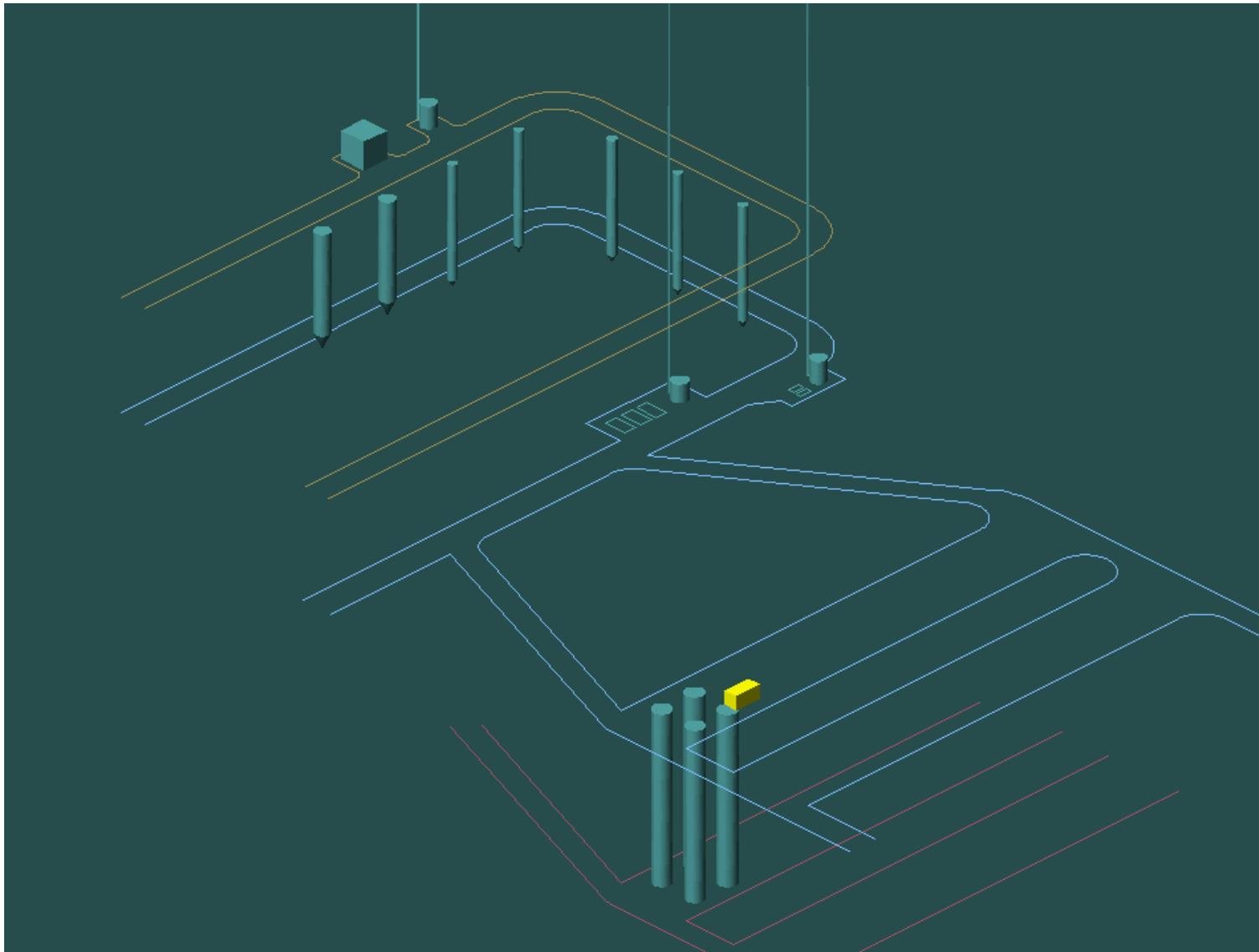


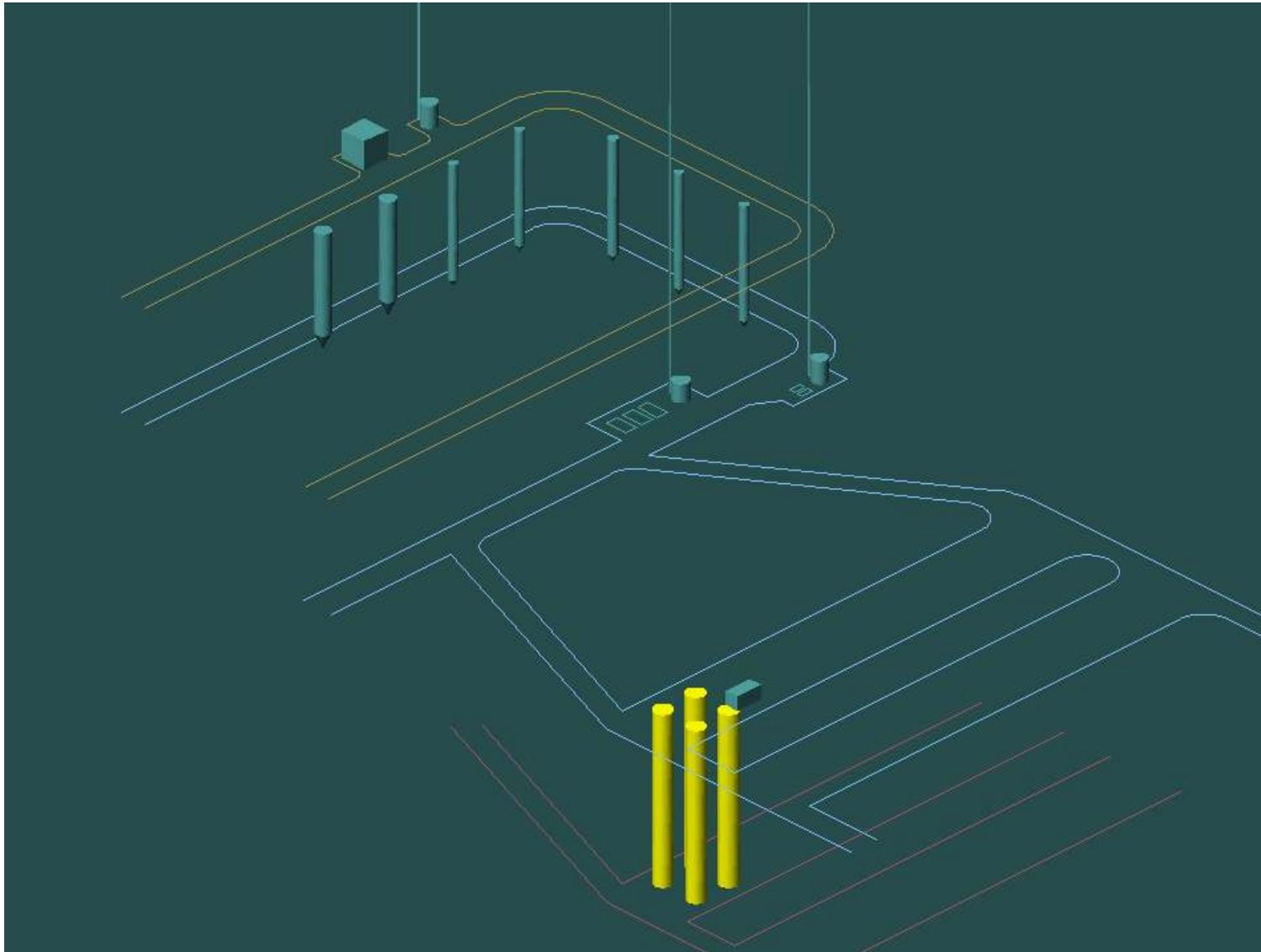


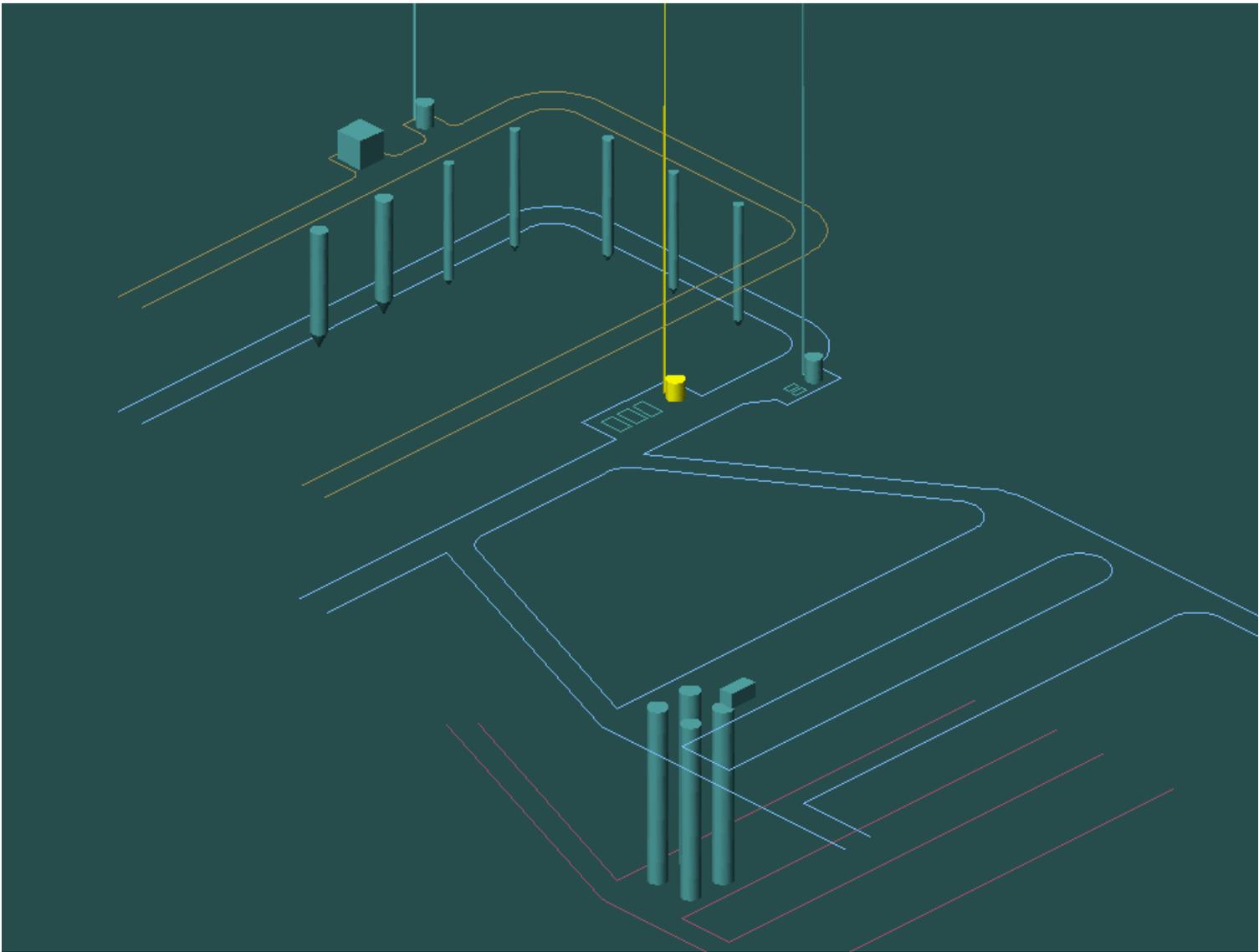






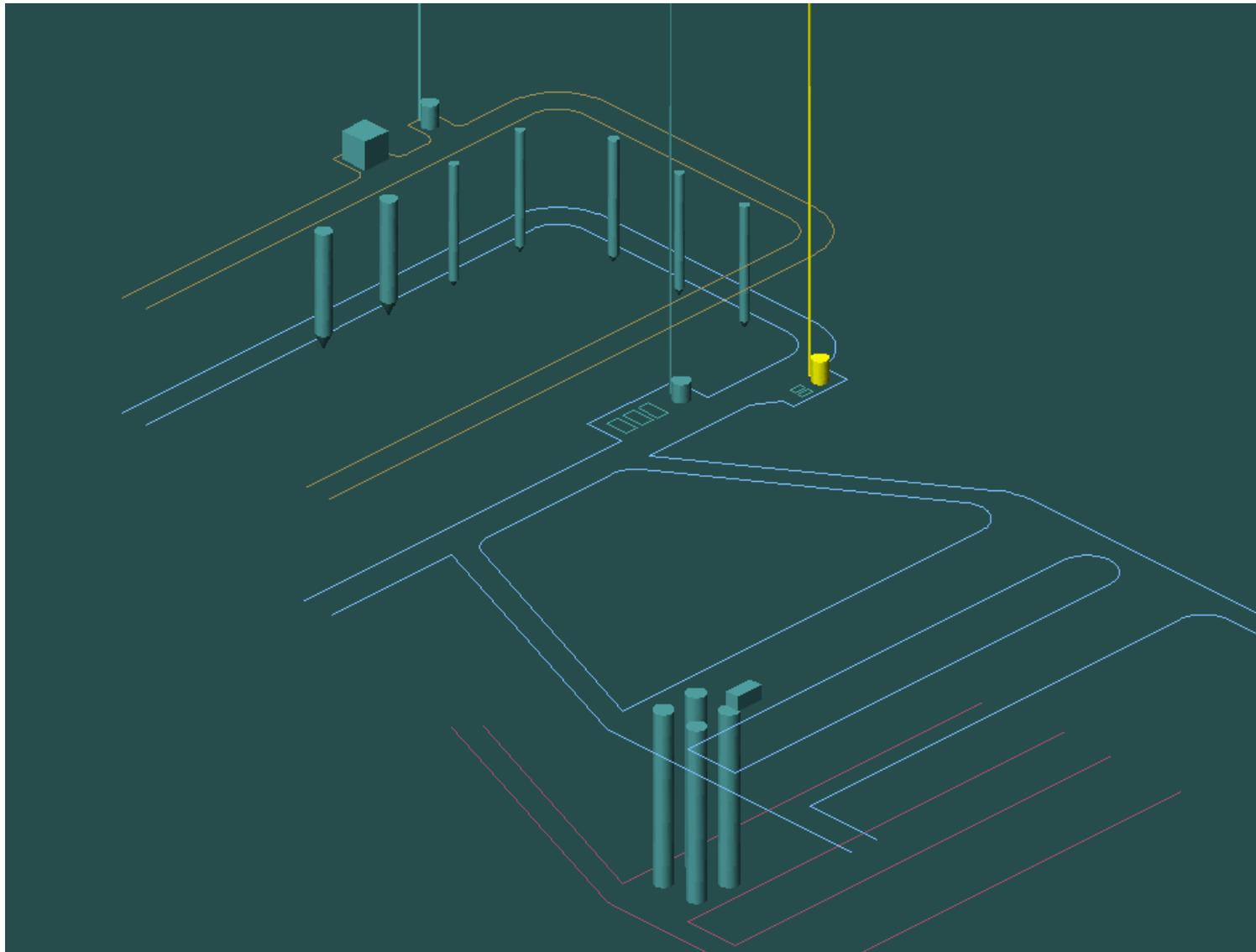


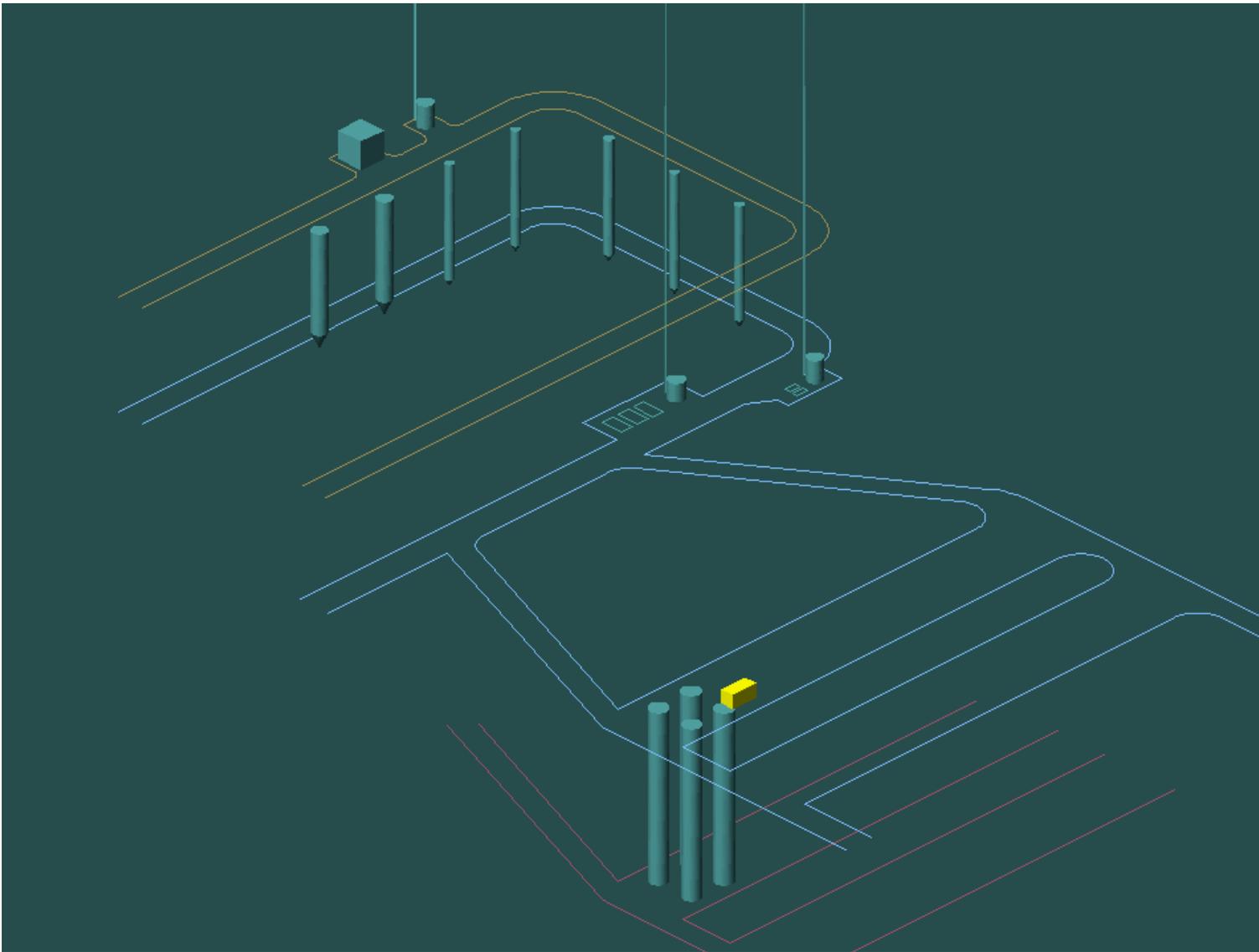


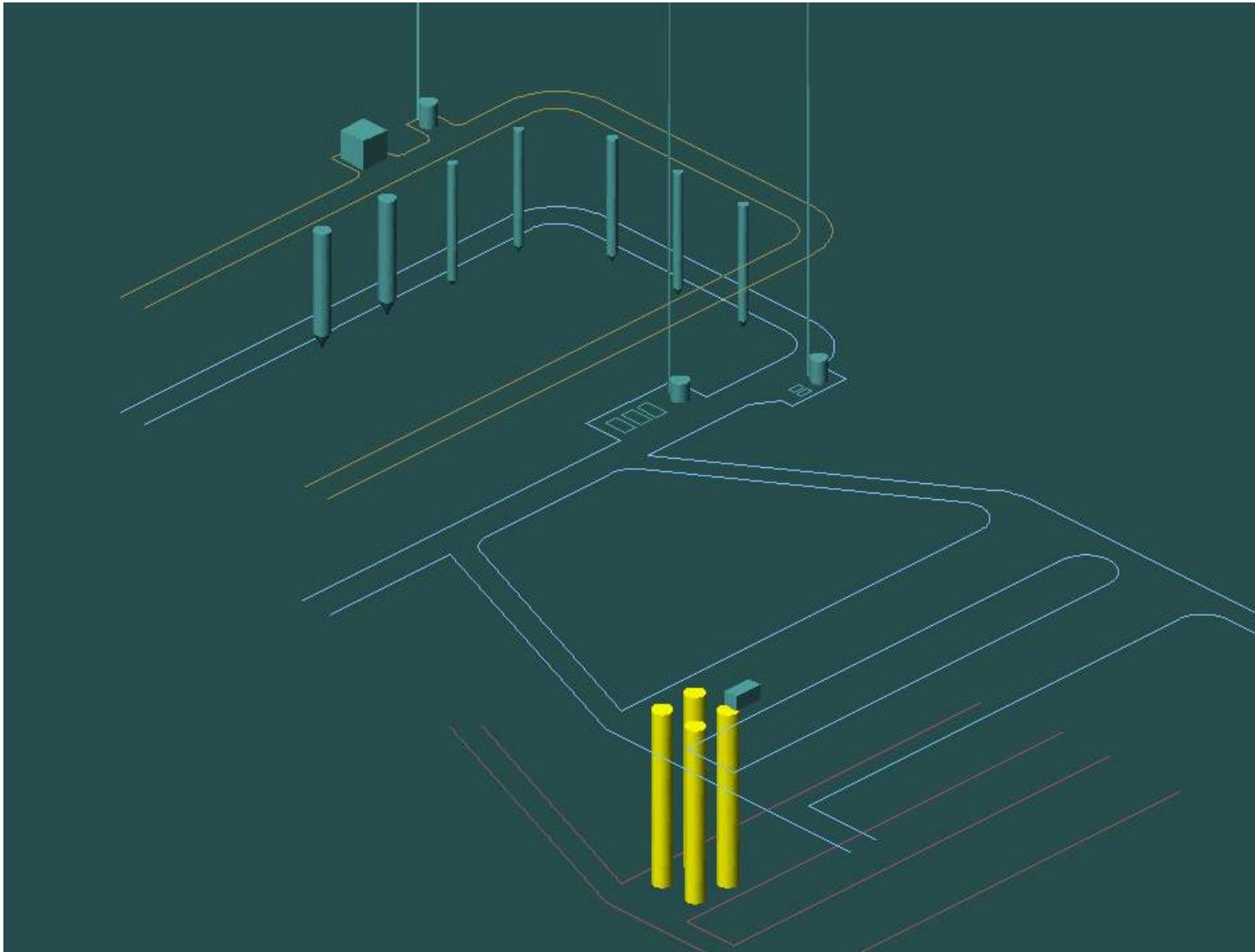


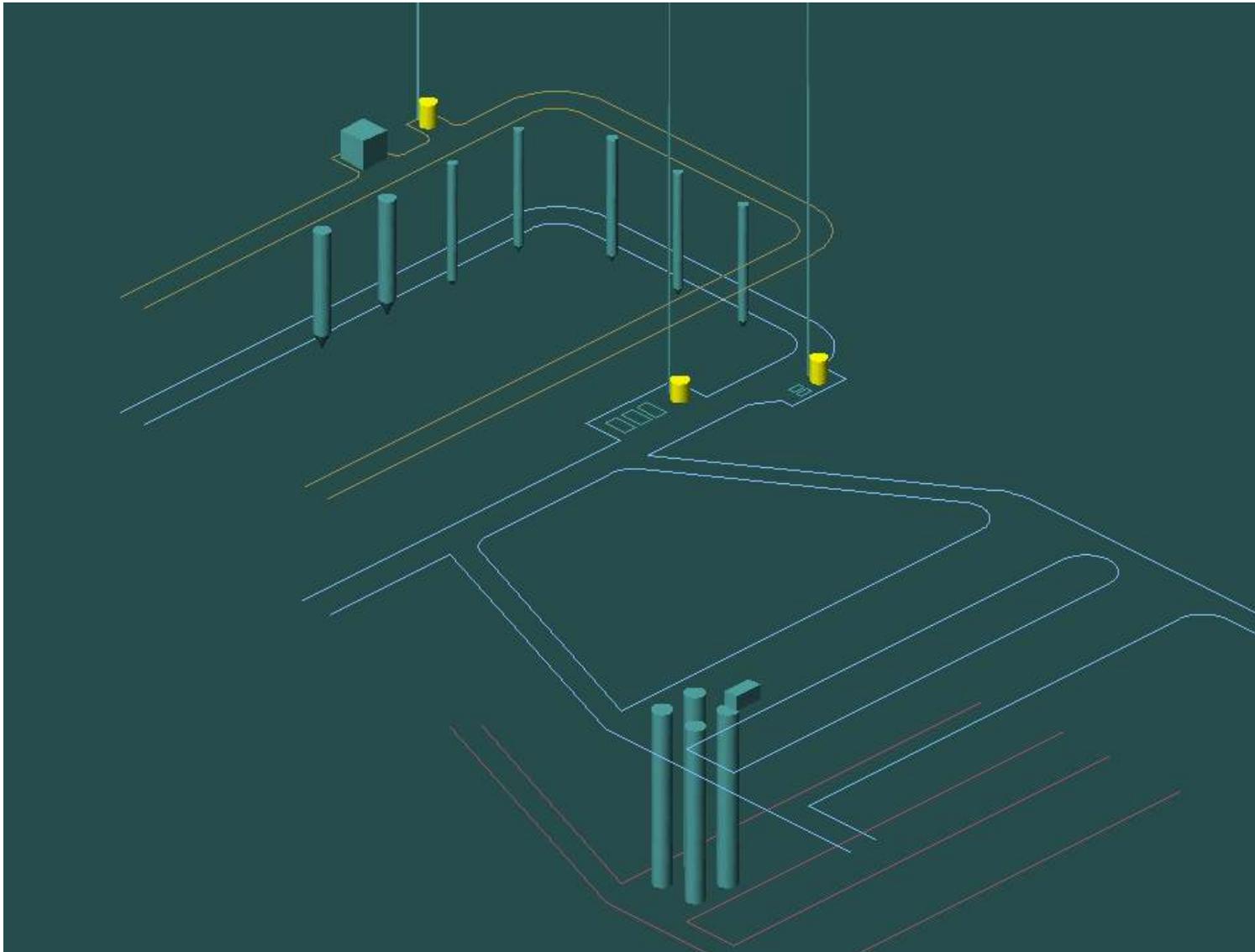
- ◆ **Chemical Precipitation Purification**
 - ◆ **Best with high U concentration**
 - ◆ **Technically and operationally proven**

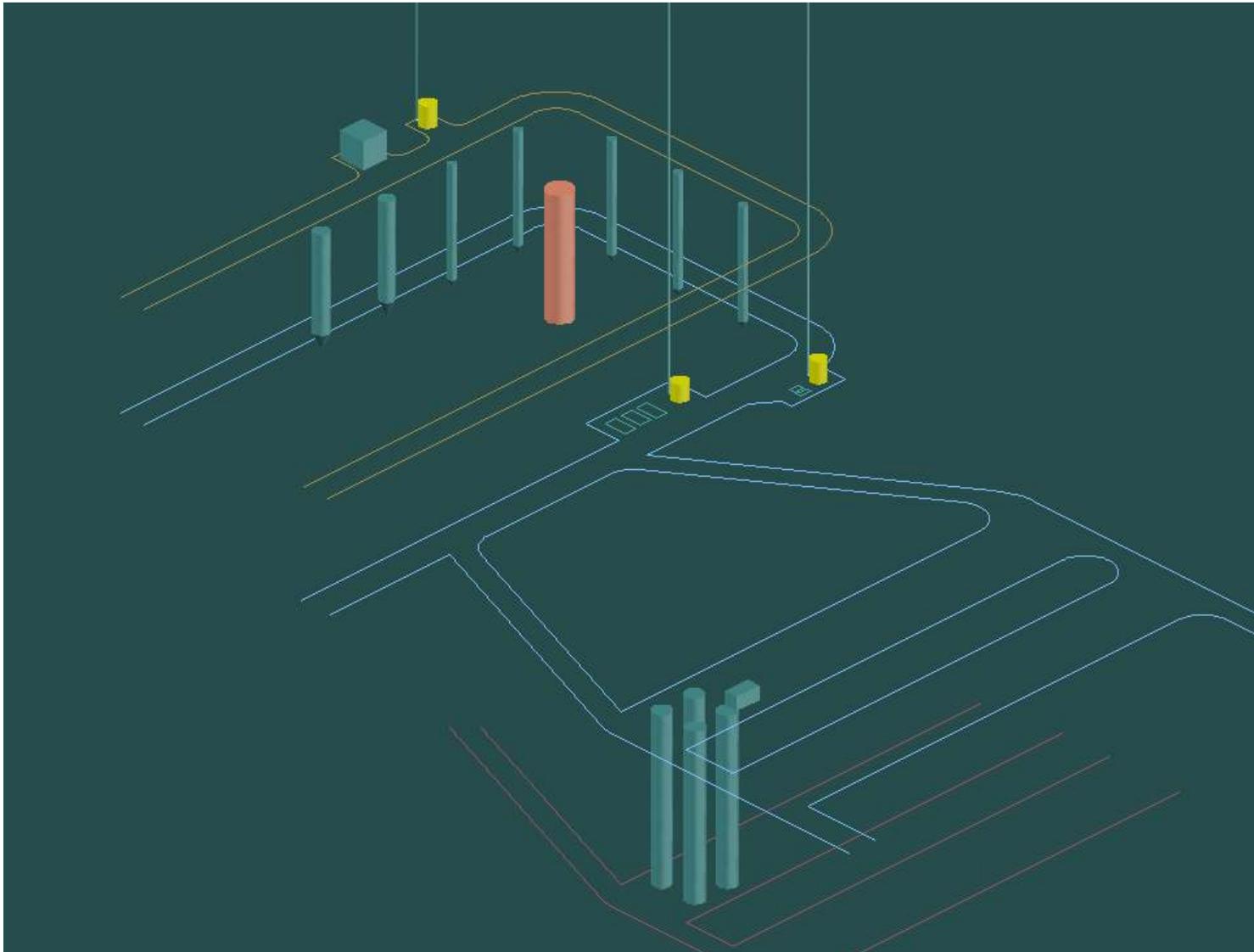
- ◆ **Chemical Precipitation Purification**
 - ◆ **Innocuous reagents**
 - ◆ **Impurities removed as precipitates**











- ◆ **Uranium peroxide**
 - ◆ **Operationally proven**
 - ◆ **Innocuous reagents**

Benefits?



- ◆ **Environmental**

- ◆ **Visual and physical impact**

◆ Environmental

◆ Effluent loading





◆ Environmental

◆ Effluent loading

◆ Environmental

◆ Tailings isolation

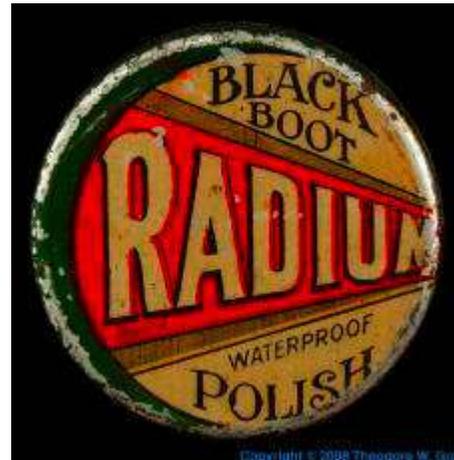
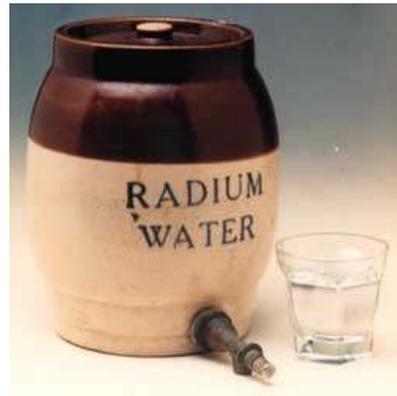
◆ Environmental

- ◆ Prevents Mo, As and Se resolubilization

- ◆ **Environmental**

- ◆ **Tailings hydrogeology**

- ◆ **Contaminant containment**

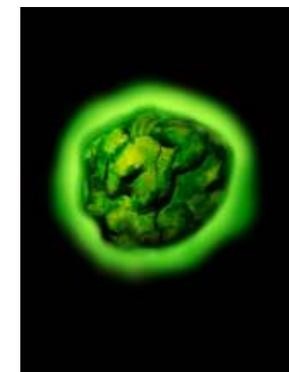
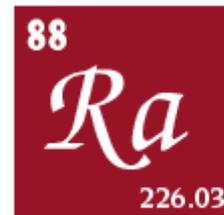


VITA RADIUM SUPPOSITORIES
 FOR RESTORING SEX POWER



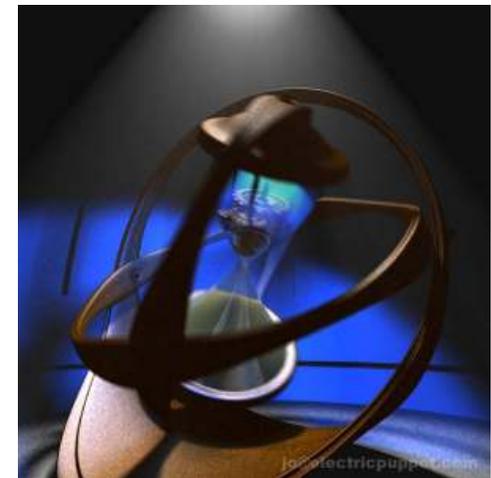
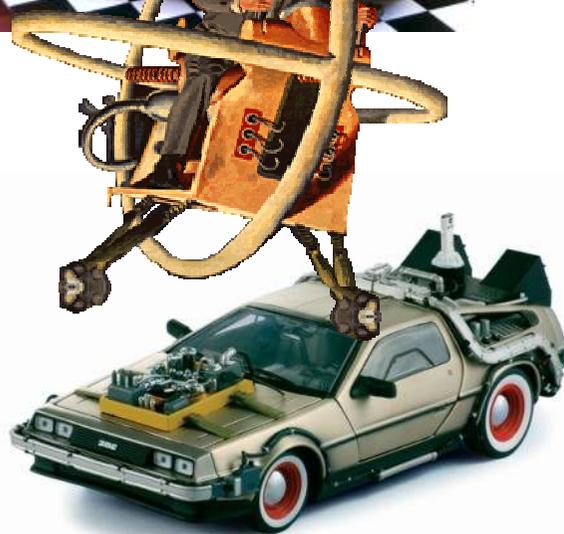
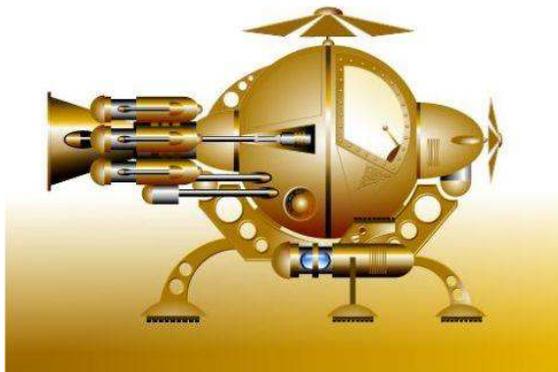
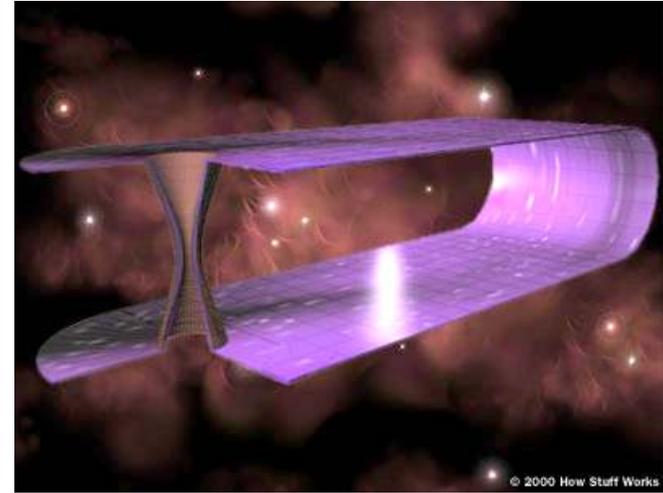
VITA RADIUM SUPPOSITORIES, for rectal use by men, are tone restorers of sex and energizers for the entire nervous, glandular and circulatory systems. These Suppositories contain a result-producing amount of highly refined soluble RADIUM, carried in a cocoa butter base. The radium is absorbed thru the walls of the lower colon, enters the blood stream and is carried to all parts of the body—to the weakened organs that need its vitalizing aid. After leaving its durably HEALTHY RESULTS, the radium is gradually eliminated in about three days. Vita Radium Suppositories are guaranteed entirely harmless. Recommended for sexually weak men who, however, should use the NU-MAN Tablets in connection for best results. Also splendid for piles and rectal sores. Try them and see what

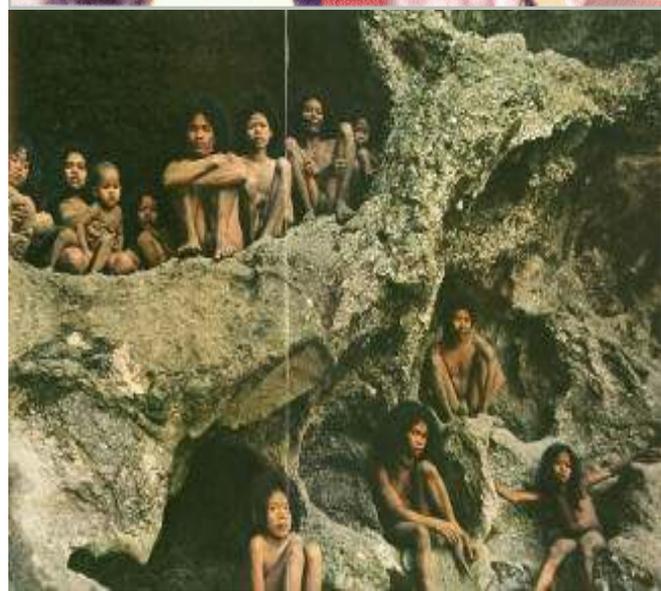
Actual Size of Vita Radium

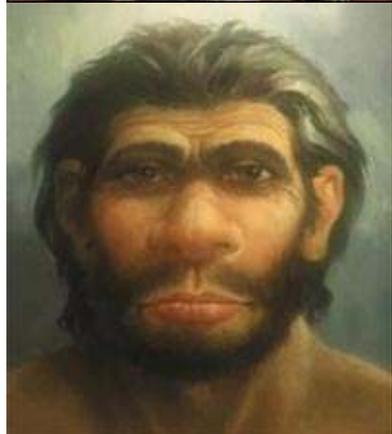
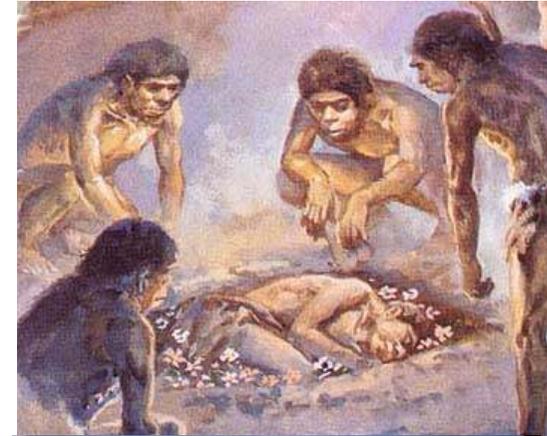




300,000 years

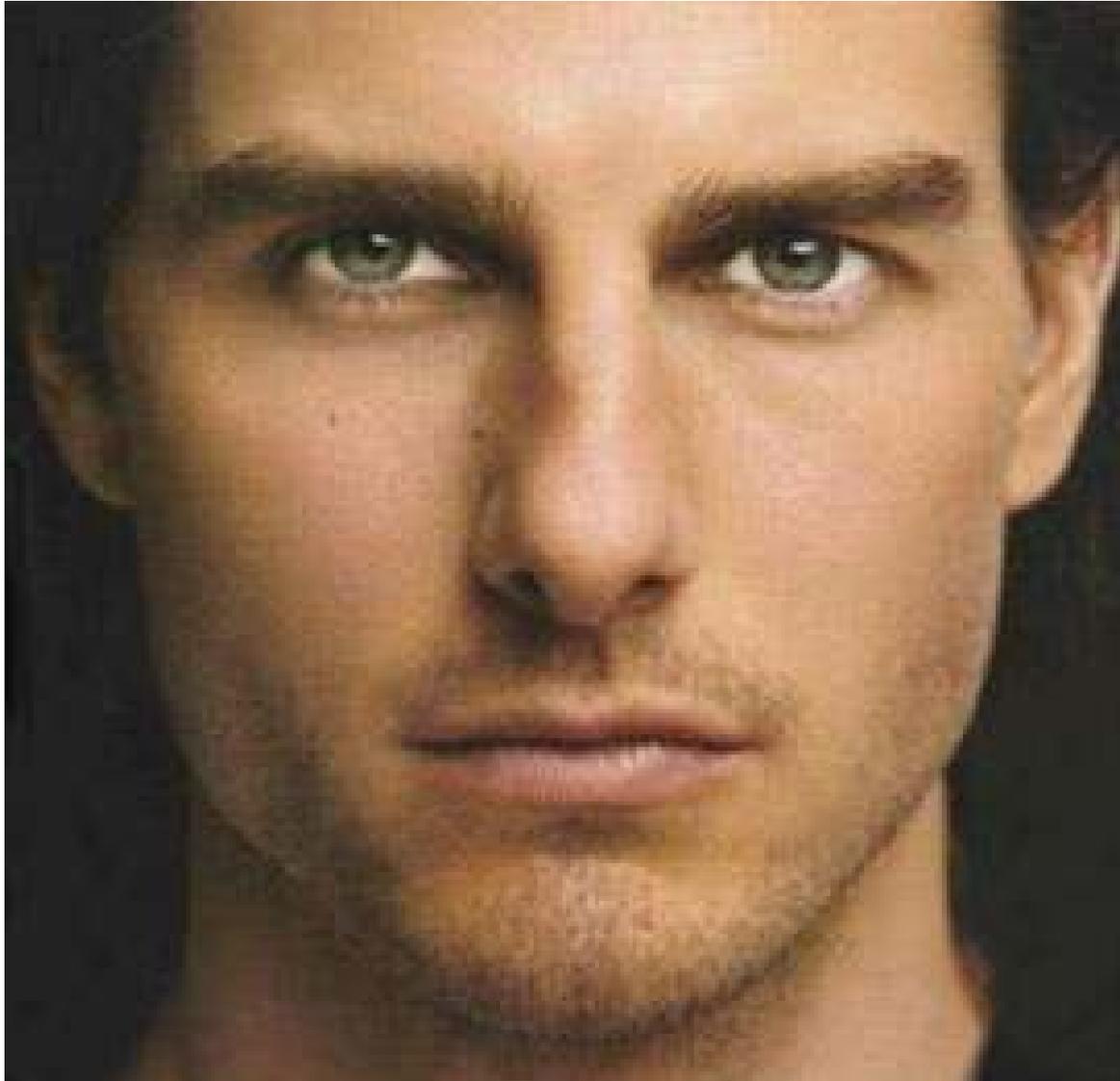


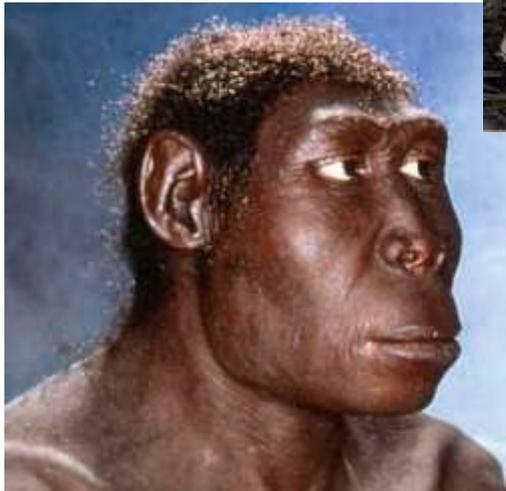




BBC VIDEO







Environmental Benefits *amec*

- ▶ **Visual/physical impact**
- ▶ **Effluent loading**
- ▶ **Tailings isolation**
- ▶ **Tailings hydrogeology**
 - ▶ **Contaminant containment**
 - ▶ **Radium containment**

Cost Impact?



Cost Impact



Capital

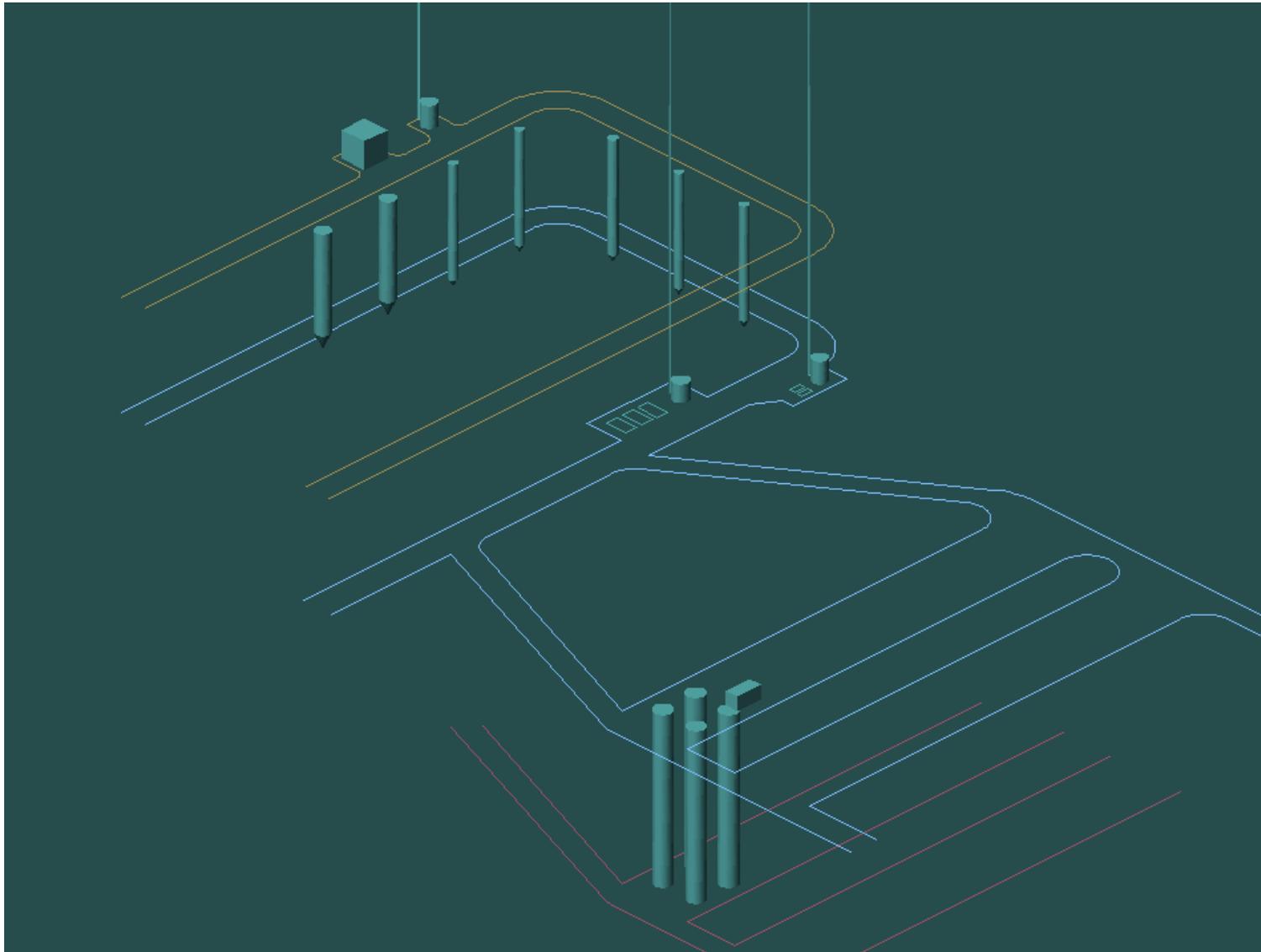
30% reduction

Operating

35% reduction

It is not the technical excellence of an engineering design which alone determines its merit but rather the completeness with which it meets the economic and social needs of its day.

James Kip Finch



Nobody has ever done that before.

You can't do that.

**The scientist seeks
to understand what is;
the engineer seeks
to create what never was.**

Theodore von Karman

Underground Milling of High-Grade Uranium Ore

Chuck Edwards
Director, Metallurgy
AMEC Americas Ltd.

QUESTIONS?

