

**RAILROAD COMMISSION OF TEXAS
P. O. BOX 12967
AUSTIN, TEXAS 78711**

APPLICATION FOR URANIUM SURFACE MINING OPERATION PERMIT

The items should be as complete as possible. File in triplicate with Director of Surface Mining and Reclamation. See "Uranium Mining Regulations" and "Texas Uranium Surface Mining and Reclamation Act", Title IV, Chapter 131, Natural Resources Code for additional information.

I. General Information

A. Name

1. Name of applicant: _____

Name of mining operation: _____

Permanent mailing address: _____

Street or P.O. Box

City

State

Zip Code

Telephone: _____

2. Name, address, and telephone number of person or persons authorized to act for applicant during consideration of this application (attorneys, engineering firms, applicant's mining superintendent, etc.)

3. Name, address, and telephone number of ownership, and management officers of the permit applicant and affiliated persons engaged in surface mining.

B. Type of permit application: Original Renewal Revision

C. Type of mining operation Open pit mining Strip mining Underground mining

D: Location

1. County or counties

2. Give a general description of the location of the proposed mining area with respect to cities, streets, highways, churches, schools, water courses, landmarks, etc.

3. Provide survey plat map (legal property boundaries). [THIS MAY BE INCLUDED AS A SEPARATE ATTACHMENT TO THIS APPLICATION.]

E: Other permits

1. List current or previous Texas surface mining permits or registrations held by the applicant, including exploration permits and mining leases for uranium or coal and lignite on State-owned lands. Also, indicate current status. (If a permit has been revoked or suspended, or bond forfeited, explain facts involved in each case.)
2. List any other permits or licenses or applications pending for permits or licenses issued by the Commission or any other governmental entity, whether local, state, or federal, which pertain to the mining aspects of this operation. Indicate agency, date applied, and status of application.
3. Indicate other steps which have been or will be taken to comply with applicable air and water quality and water rights laws and regulations, and any applicable public health and safety standards for the mining operation.

F: Associated Interests and Authorities

1. Name and address of residents currently residing on the lands affected by the surface mining operation; legal and equitable interests of record, if reasonably ascertainable, in the surface and mineral estates of the permit area (minerals include only those defined in the Act); and owners of record of surface areas within 500' of any part of the permit area.
2. Provide a list of local governmental bodies, planning agencies, sewage and water treatment authorities or water companies having jurisdiction over or in the locality in which the proposed surface mining will take place.

II. Maps/Engineering Drawings

Submit as many maps and drawings as necessary to give the required information. Each should bear the name, number of the mine, date of preparation, name of person preparing map or drawing, explanation, scale and north arrow. The maps should have contour intervals of sufficient detail to portray the direction and rate of slope.

- A. On a U.S.G.S. topographic map (scale, 1:24,000) provide the following: (A 1:62,500 scale U.S.G.S. topographic map may be used if the 1:24,000 map is not available. If neither is available a Texas Department of Transportation county map may be used.)

1. Location of background sample points:
 - a. the borings, pits or cores as discussed in IV.A. of this application.
 - b. the water wells as discussed in IV.B. of this application.
 - c. planned monitoring wells if that method of sampling will be utilized.
 - d. topsoil samples as discussed in VII.A. of this application.
 2. Identification and location:
 - a. within the permit area: existing and proposed utilities, water wells, bodies of water, and parts of the operation not necessarily involved with mining, including plant, mill, processing equipment, office and maintenance facilities, and generating facilities.
 - b. within the permit area and 100' of its boundaries: existing oil and gas wells or other producing facilities.
 - c. within the permit area and 150' of its boundaries:
 - (1) national concerns - public highway, park, monument, historic landmark, property listed on the national register of historic places, forest, wilderness area, wildlife refuge, wildlife and scenic area;
 - (2) state concerns - highway, park, wildlife refuge, forest, recorded Texas landmark, historic site, archaeological landmark;
 - (3) city, county or local concerns - park, public road or building, cemetery, school, church, or existing dwelling outside the permit area.
 - d. within the permit area and 500' of its boundaries: all active and inactive mines, recently constructed access or haulage roads and railroad spurs, boundary lines and names of the property owners.
- B. On a map of the scale not more than 1" = 500', depending on clarity, indicate the location and size of the mining operation(s), detailing and dimensioning each existing or intended major feature of the mine(s), including overburden or spoil piles, pits, topsoil storage area, ore pad for uranium, diversion dikes or ditches, berms or holding or sediment ponds, catch basins, retention ponds or any other water impoundments, tailings ponds and any other characteristics of the mining area essential to evaluate the operation. (Aerial photographs not greater than 1000' to the inch may be substituted.)
- C. Provide engineering drawings which include the drainage plan on and away from the permit area, including the directional flow of surface and ground water, constructed drainways, natural waterways used for drainage and the nearest streams or tributaries.

III. Operations

- A. Describe the average depth and thickness of minerals to be mined below the ground surface, the nature (consolidated/unconsolidated) and expected amount of overburden to be removed, depth of excavation, estimated area and location of the uranium ore bodies to be mined, estimated production in tons/year. Approximate the dimensions of each.

- B. List the number and type of equipment, as well as a description of its proposed application and use for mining, reclamation, and revegetation.
- C. Estimate the average open pit dimensions (length, breadth), average height of overburden, average highwall height along perimeter, and average linear feet of highwall for the anticipated permit term.
- D. Indicate the anticipated mining schedule on an annual basis.

IV. Field Analysis

- A. Describe the geochemical and physical characteristics and depths of the various strata of overburden and mineral to be mined, including the stratum immediately beneath the uranium ore body by utilizing the results gathered in the permit area from test borings, test pits, core samples, or other acceptable method. Representative sample points should vary according to the geology in the area, with a minimum of two tests being required, provided that they are evenly distributed and representative of the area. All tests should be accompanied by logs explaining the lithology. Analysis should be done on lithologic units, and should include saturated-paste pH and electrical conductivity, water-soluble salts, texture, exchangeable-sodium percentage, organic and pyritic sulfur, and total arsenic, copper, molybdenum, selenium and uranium. Utilize standard methods, such as those indicated in Appendix A. (THIS MAY BE INCLUDED AS A SEPARATE ATTACHMENT TO THIS APPLICATION.)
- B. Provide the following information concerning ground water.
 - 1. The depth to the known ground-water table(s) and to any perched waters.
 - 2. A list of all existing water wells and owners within one mile of the immediate area of mining activity, specifying the location, depth, usage (domestic or monitoring), method of completion (casing, perforation interval, cementing, etc.), and measured water level for each, and their current status.

3. Analysis of groundwater samples obtained from at least two representative wells completed within the stratum directly affected by mining and as near to the immediate area of mining activity as possible. Preferably, wells should be cased, cemented, and located down the hydraulic gradient. Standard methods of analysis, such as those referenced in Appendix A, should be used. (If toxic material is present in such concentration as to cause reasonable concern, additional representative samples are requested.)
 - a. general water parameters - temperature, pH, molybdenum, arsenic, calcium, magnesium, sodium, potassium, bicarbonate, sulfate, chloride, fluoride, nitrate, total dissolved solids, and cation-anion balance.
 - b. metals - aluminum, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, selenium, and zinc.

V. Environmental Considerations

- A. Indicate anticipated hydrologic consequences of the mining operation to surface and groundwater. Include in this discussion: indication of the gradient and potential rate of movement of the groundwater; potential production and recharge of groundwater; interruptions of natural drainways, streams, or aquifers, aquifer recharge areas, and floodplains, with the anticipated consequences and steps to be taken to minimize the environmental disturbances.
- B. Describe erosion and siltation control plans for affected lands, and give the location and type of any planned wind and water erosion-control structures.
- C. Describe the sources of dust and the proposed methods for control.
- D. Propose plans for dealing with toxic material, including acid drainage, throughout mining and reclamation activities.
- E. Discuss the effect of the mining operation upon wildlife, and indicate plans to protect the wildlife.

VI. Engineering Techniques

- A. Provide construction plans for uranium tailings ponds, provisions to monitor and prevent seepage from the pond, and engineering estimates of the capacity of the pond. Milling facilities, if any, should be described, addressing the process, environmental controls, and final reclamation of the mill site.
- B. Describe the anticipated means for diverting runoff waters around the mine site and for minimizing runoff from the mine site, overburden, and mineral storage areas. Specifically, address the water control plans to deal with storm and seepage water. Include construction plans and engineering estimates of the capacity of sedimentation basins, holding ponds, dikes or diversions designed to contain or control the maximum 10-year, 24-hour precipitation event, as determined by the nearest U.S. Weather Service station in the Rainfall Frequency Atlas, TP-40.
- C. If your operation proposes any discharge, what is the nature, volume, and probable quality before discharge, the type of treatment planned, and the point(s) of discharge(s).
- D. If a permanent water impoundment is planned, provide the plans and specifications, including provisions for safety, slope, and access.
- E. If you intend to use explosives, estimate the adverse effects and explain procedures planned to mitigate them.

VII. Topsoils

- A. What are the pH, texture, thickness, nutrients (nitrogen, phosphorus, potassium, and organic matter), salinity (water soluble salts), exchangeable sodium percentage, and soil classification-series name of the soils to be disturbed. Give the pH, texture, thickness, salinity; and exchangeable sodium percentage of soil horizons other than the "A" horizon which are also suitable for revegetation. Utilize standard methods of analysis, such as those referenced in Appendix A.
- B. Describe the overburden handling plan, and state whether topsoil will be segregated or mixed with the strata.
 - 1. If topsoil will be stored, estimate when topsoil would be removed and replaced, and what measures will be undertaken to protect it in the interim time, including steps to prevent wind or water erosion during storage.

2. If topsoil will be replaced in reclamation, what will be the average depth of the topsoil?

3. If overburden strata will be mixed, explain the criteria for this decision and provide details on why this method is suitable for revegetation requirements. Include information pertaining to the various strata, such as that listed in VII.A. of this application.

VIII. Reclamation Plan

A. Land Use

1. Describe the affected land and permit area, giving the condition of the land to be covered by the permit prior to mining.
 - a. The uses of the land at the time of application, including information concerning type of vegetation and animal life in the area; the scenic and/or geological formations or sites; any archaeological, historical, and cultural sites as determined by an archaeological survey; any surface or groundwaters; annual rainfall; site elevation above sea level; and the average velocity and direction of the prevailing winds. Ground-level photographs may be used to aid descriptions. (If the land has a history of previous mining, indicate the uses, if reasonably ascertainable, which immediately preceded any mining. (THIS MAY BE INCLUDED AS A SEPARATE ATTACHMENT TO THIS APPLICATION).

 - b. Capability of the land prior to any mining to support a variety of uses, giving consideration to soil and foundation characteristics, topography, vegetative cover and animal life, as well as any additional categories covered in VIII.A.1.a. above.

2. Indicate the intended uses(s) of the land after reclamation, the capacity of the land to support both anticipated uses(s) and alternative uses following reclamation. (Alternatives for backfilling, if applicable, should be discussed here.) Include information concerning the long-range effect of mining on land use, both during and after the operation, and proposed control techniques to minimize disruption or effects.

3. Provide the acreage of both the current and anticipated land uses(s) after reclamation. (e.g. forest, agriculture, pasture, water, and water impoundment)

B. Reclamation Procedures

1. Describe how the proposed postmining land condition is to be achieved, and the necessary support activities necessary to achieve that condition. Include an estimate of the cost per acre of the reclamation, and a general timetable (on an annual basis) for accomplishing the reclamation plan.
2. Indicate plan(s) to reduce all highwalls, spoil piles, and banks to control erosion effectively and to sustain vegetation.

C. Revegetation

1. Explain how revegetation will be completed (hydroseeding, aerial seeding, conventional method).
2. Indicate seasonal revegetation schedule and rate, identifying species, rate/acre, planting location, and season for planting.
3. If soil conditions such as fertilizers or lime will be applied, give kind, rates, and method of application.
4. Describe seasonal maintenance of vegetation until final bond is released.
5. If permit area will be subject to grazing during the period of responsibility, describe the plan for vegetation protection.

B. Final Closing

1. If standing water, other than that in permanent water-impoundments, will be left by the operation, explain the necessity for and planned utilization of the water.
2. Provide reclamation plans for final closing, including plans for eliminating debris.

I, (name) _____, (title) _____ state that I have knowledge of the facts herein set forth and that the same are true and correct to the best of my knowledge and belief. I further state that to the best of my knowledge and belief, the project for which application is made will not in any way violate any law, rule, ordinance, or decree of any duly authorized governmental entity having jurisdiction.

Date _____

Signature _____

Title _____

APPENDIX A

Water Analysis References:

American Society for Testing and Materials, 1975, Part 23: "Water and Atmospheric Analysis", Annual Book of ATSM Standards, Philadelphia, American Society Testing Materials.

American Public Health Association, American Water Works Association, and Water Pollution Control Federation, 1975, Standard Methods for the Examination of Water and Wastewater, 14th Edition: New York, American Public Health Association.

Brown, Eugene, Skougstad, M. W.; and Fishman, M.J.; 1970, Methods for Collection and Analysis of Water Samples for Dissolved Minerals and Gases: Techniques of Water Resources Investigations of the U.S. Geological Survey, Book 5, Chapter A1, Washington, D.C., Superintendent of Documents, U. S. Government Printing Office.

Environmental Protection Agency, Methods for Chemical Analysis of Water and Wastes, Environmental Monitoring and Support Laboratory, Office of Research and Development, Cincinnati, Ohio, (EPA-600/4-79-020), 1979.

Soil Analysis References:

Black, Charles (Editor), Part I: "Physical and Mineralogical Properties", Part II: "Chemical and Microbiological Properties", Methods of Soil Analysis, American Society of Agronomy and American Society for Testing and Materials, Agronomy Series Number 9.