STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

July 17, 1986

TO: Board of Oil, Gas and Mining

THRU: Kenneth E. May, Associate Director, Mining KEMay

THRU: Lowell P. Braxton, Administrator, Mineral Resource Development and Reclamation Program LPB

FROM: D. Wayne Hedberg, Permit Supervisor/Reclamation Hydrologist

RE: Kennecott, UCD Modernization Project, Phase II, Notice of Tentative Approval, Public Notice and Executive Summary, ACT/035/002-(II), Salt Lake County, Utah

Attached for your information is a copy of the tentative approval, public notice and an executive summary for the mine project identified above. A tentative approval was forwarded to Kennecott on June 27, 1986 for "Phase II" of the UCD Modernization Project. The modernization project is being permitted by the Division of Oil, Gas and Mining in a two-phase approach. The Division issued final approval for "Phase I" construction activities on March 27, 1986. Public notice has been forwarded to the appropriate news services, and the thirty (30) day public comment period for "Phase II" activities and should end no later than August 4, 1986.

The Division seeks the Board's concurrance on the amount and form of surety to be presented by Kennecott for this project. Please refer to the attached documents for a general description of the Phase II project.

jvb
Attachments
8946R-42



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KENNECOTT UTAH COPPER DIVISION (UCD)
MODERNIZATION PROJECT

EXECUTIVE SUMMARY - REVISION TO EXISTING PERMIT
July 16, 1986

Mine Name: Bingham Canyon Mine I. D. No.: ACT/035/002 - II
UCD Modernization Project - Phase II, Grinding/Milling Plant, Ore Conveyor and Pipeline Construction Activities

Operator: Kennecott Minerals Company
P.O. Box 11248
Salt Lake City, Utah 84147
Salt Lake City, Utah 84147
Telephone: 801-332-8261
Contact Person: Mr. Gregory H. Boyce
Life of Mine: 100+ Years (?)

County: Salt Lake
New/Existing: New Revision to Existing Mine
Mineral Ownership: Kennecott
Surface Ownership: Kennecott
Lease No.(s): N/A
Permit Term: 5 years(Phase II)

Legal Description: (of revision) Grinding Plt.- SW1/4 Section 5 and SE1/4 Section 6 and SE1/4 and W1/2 Section 8, T3S, R2W, SLBM; Access Road - portions of Section 8 and Section 5, T3S, R2W, SLBM; Ore Conveyor - portions of Section 6, 7, and 18, T3S, R2W, SLBM; Pipeline corridor - portions of Section 5 and 6, T3S, R2W, Sections 6, 7, 8, 16, 17, 21, 28, 29 and 32, T2S, R2W, and Section 31, T1S, R2W, SLBM.
Mineral(s) to be Mined: Copper/Molybdenum
Mining Methods: Typical surface strip mining techniques (shovel & truck)
Acres to be Disturbed: 163 Acres -(Phase I), plus 425 Acres -(Phase II)
Present Land Use: Wildlife, agricultural and mining
Postmining Land Use: Native rangeland, wildlife, grazing
Variances from Reclamation Standards (Rule M-10) Granted: M-10(12) Soils, M-10(7) Roads and Pads

Soils and Geology:

Soil Description: Clay loam (surface soil, 0-12 inches), Clay to a clay loam (subsurface soil, 12-60 inches)
pH: 6.2 (average of surface soil), 7.6 (average subsurface soil)
Special Handling Problems: Low erosion hazard, relatively flat topography
Geology Description: East flank, northern Oquirrh Mts. Grinding Plant underlain by Harkers Alluvium (Pleistocene), Harkers is overlain by Mid-Late Pleistocene Lake Bonneville lacustrine deposits and by Late Pleistocene to recent alluvial fan deposits, stream gravels, valley fill and talus deposits, all are underlain by bedrock consisting of laharic breccia (Bingham Sequence: Curry Peak, Freeman Peak, Kirkman-Diamond Frms.)

Hydrology:

Ground Water Description: Principal aquifer occurs @350-500 feet below surface overall project area. Local perched aquifer encountered in 1 of 56 bore holes @ 35 ft. Anticipated minor amts. perched groundwater aquifers may be encountered excavating in Harkers Alluvium near bedrock contact and in recent alluvium of major drainages crossing the tailings pipeline corridor.

Surface Water Description: The tailings pipeline corridor will cross approximately 50 drainage channels including: Barney's Canyon, Harkers Canyon, Coon Canyon and Little Valley Wash (principal drainages). Retention ponds proposed to handle surface runoff from the new grinding plant/concentrator area.
Water Monitoring Plan: A groundwater monitoring plan has been approved by the Division of Environmental Health to monitor potential impacts to the groundwater regime in the project area. DOGM concurs with the proposed monitoring program.

Ecology:

Vegetation Type(s); Dominant Species: Abandoned dryland farming, sagebrush, oak brush, various grasses, forbes (lower elevations), mountain brush and some pinyon-juniper (higher elevations).
Percent Surrounding Vegetative Cover: 35% for lower elevations and 50% at higher elevations
Wildlife Concerns: Kennecott is working with Division Wildlife Resources and DOGM in developing a series of pipeline corridor crossings for migrating wildlife species.
Surface Facilities: Phase I & II facilities include: (1) in-pit movable gyratory ore crusher, 54" in-pit ore conveyor (@3300 ft.), (1)-72" main ore conveyor (@4.9 mi.), ore grinding/milling plant, a 7.5 million gallon process water reservoir, (3) storm H2O retention ponds, miscellaneous structures (lime plant, electrical substation, maintenance shop, warehouse, change house and office buildings), (1)-48" flotation feed (tailings) pipeline and (1)-48" process water return pipeline (twin pipeline length @12.5 mi.), (1) principle grinding plant access road and (2) construction/service roads for the ore conveyor and tailings pipeline.

Mining and Reclamation Plan Summary: see attached summary

Surety:

Amount: $5,982,948 (Phase II operations)
Form: Bond
Renewable Term: 5 year (1987 dollars)
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DIVISION OF OIL, GAS AND MINING
DEPARTMENT OF NATURAL RESOURCES
IN AND FOR THE STATE OF UTAH

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| IN THE MATTER OF TENTATIVE APPROVAL OF THE REVISION TO THE MINING AND RECLAMATION PLAN SUBMITTED BY KENNECOTT, UTAH COPPER DIVISION, SALT LAKE COUNTY, UTAH | : | NOTICE OF TENTATIVE APPROVAL NO. ACT/035/002 |

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THE STATE OF UTAH TO ALL OPERATORS, TAKERS OF PRODUCTION, MINERAL AND ROYALTY OWNERS, AND PARTICULARLY ALL PERSONS INTERESTED IN SECTIONS 5, 6, 7, and 18, TOWNSHIP 3 SOUTH, RANGE 2 WEST, SLBM; AND SECTIONS 6, 7, 8, 16, 17, 21, 28, 29, AND 32, TOWNSHIP 2 SOUTH, RANGE 2 WEST; AND SECTION 31, TOWNSHIP 1 SOUTH, RANGE 2 WEST, SLBM, SALT LAKE COUNTY, UTAH.

Notice is hereby given that tentative approval was given by the Division of Oil, Gas and Mining, on June 27, 1986 to Kennecott, Utah Copper Division to amend their originally approved surface mining operations to include a modernization project which will comprise facilities in the following locations: The grinding plant and access road will be located in the SW1/4 of Section 5, the SE1/4 of Section 6, and the SE1/4 and W1/2 of Section 8, Township 3 South, Range 2 West, SLBM. The ore conveyor will traverse portions of Sections 6, 7, and 18, T3S, R2W, SLBM. The pipeline corridor will traverse portions of Sections 5 and 6, T3S, R2W; Sections 6, 7, 8, 16, 17, 21, 28, 29, and 32, T2S, R2W; and Section 31, T1S, R2W, SLBM, Salt Lake County, Utah.

The name of the amendment to the mining operation is the Kennecott Utah Copper Division (UCD) Modernization Project and the person representing the company is Mr. Gregory H. Boyce, Director of Environmental Affairs, P.O. Box 11248, Salt Lake City, Utah 84147.

The project is being permitted in a two (2) phase approach. Both phases are to be approved separately by this Division. This tentative approval is for "Phase II" of the overall project. "Phase I" was previously approved on March 27, 1986.

Kennecott, Utah Copper Division has fulfilled obligations under the Utah Mined Land Reclamation Act of 1975 (Section 40-8, UCA 1953 as amended) with specific reference to Section 40-8-18 and will employ the following mining and reclamation techniques on approximately 588 additional disturbed acres of privately owned land. Of this total, 163 acres were previously approved under "Phase I" (i.e., plant site grading and access road construction).

During Operations:

1. "Phase II" permitting of the UCD Modernization Project involves construction of the new grinding/milling plant facilities. The grinding plant site encompasses 115 acres. The access road right-of-way to the plant location involves 48 acres.

2. "Phase II" construction includes: a new inpit crusher, a crushed ore conveyor to the new grinding plant, a ground ore (flotation feed) pipeline for transport to existing Arthur and Magna flotation facilities, and a second pipeline to return process water to the grinding plant.

3. The conveyor and pipeline corridors will each be 200 feet wide. The ore conveyor corridor is 6,350 feet in length and will involve 30 acres of new surface disturbance. The pipeline corridor, including areas of common pipeline corridor and single pipeline corridor is 86,000 feet in length and will disturb approximately 395 acres. A construction and maintenance road will parallel the conveyor and pipeline corridors.

4. Prior to the removal of cut or the placement of fill along the conveyor and pipeline routes, the upper horizon soil will be removed from all areas to be disturbed. The soil will be stored in stockpiles along the corridors. Erosion control measures will be implemented to minimize topsoil losses. The soil will be stored from one (1) to three (3) years. Upon completion of construction, stored soil will be placed on the remaining exposed ground, fertilized and reseeded during the fall season.

Following Operations:

1. Kennecott will implement the following reclamation plan upon termination of all mining activities associated with the UCD Modernization Project:

(i) Salvageable equipment will be dismantled and sold, surface structures will be razed, foundations, parking and driving surfaces will be broken up, removed and/or buried. The disturbed areas will be stabilized and regraded to conform with the surrounding natural terrain.

(ii) Kennecott will not store first horizon soil for final reclamation use. Instead, Kennecott, with assistance from the State Division of Oil, Gas and Mining will establish a test plot revegetation program to determine best techniques for supplementing and reclaiming the second horizon soil material.

(iii) Standard agronomic practices will be used to prepare the seedbed for drill and/or broadcast seeding. The disturbed areas will be reclaimed with native vegetative species.

Any person or agency aggrieved by this tentative decision is hereby requested to submit written protest within thirty (30) days of the date of publication to the Division of Oil, Gas and Mining, 355 W. North Temple, 3 Triad Center, Suite 350, Salt Lake City, Utah 84180-1203, setting forth factual reasons for his or her complaint, and thereafter, at a time and place to be established, appear before the Board of Oil, Gas and Mining to show cause, if any, why this mine plan should not be approved.

DATED this 27th day of June 1986.

STATE OF UTAH
DIVISION OF OIL, GAS AND
MINING

Marjorie L. Anderson

Marjorie L. Anderson
Administrative Assistant

8946R

ATTACHMENT

Mining and Reclamation Plan Summary
UCD Modernization Project - Phase II

Kennecott Minerals Company, Utah Copper Division
Bingham Canyon Operations
ACT/035/002 - (II)
Salt Lake County, Utah

July 16, 1986

During Operations:

1. Construction activities associated with "Phase II" permitting will affect approximately 588 additional disturbed acres of privately owned land. Of this total, 163 acres were previously approved under "Phase I" (i.e., plant site grading and access road construction). The grinding plant site encompasses 115 acres. The access road right-of-way to the plant location involves 48 acres.

2. "Phase II" permitting includes: construction of the new grinding/milling plant facilities, a new in-pit crusher and 54" conveyor, a 72" crushed ore conveyor to the new grinding plant from the pit, a ground ore (flotation feed) pipeline for transport to existing Arthur and Magna flotation facilities, and a second pipeline to recycle process water back to the grinding plant.

3. The conveyor and pipeline corridors will each be 200 feet wide. The 72" ore conveyor corridor is 6,350 feet in length and will involve 30 acres of new surface disturbance. The pipeline corridor, including areas of common pipeline corridor and single pipeline corridor is 86,000 feet in length and will disturb approximately 395 acres. A construction and maintenance road will parallel the conveyor and pipeline corridors.

4. Prior to the removal of cut or the placement of fill along the conveyor and pipeline routes, the upper horizon soil will be removed from all areas to be disturbed. The soil will be stored in stockpiles along the corridors. Erosion control measures will be implemented to minimize topsoil losses. The soil will be stored from one (1) to three (3) years. Upon completion of construction, stored soil will be placed on the remaining exposed ground, fertilized and reseeded during the fall season.

Following Operations:

1. Kennecott will implement the following reclamation plan upon termination of all mining activities associated with the UCD Modernization Project:

(i) Salvageable equipment will be dismantled and sold, surface structures will be razed, foundations, parking and driving surfaces will be broken up, removed and/or buried. The disturbed areas will be stabilized and regraded to conform with the surrounding natural terrain.

(ii) Kennecott will not store first horizon soil for final reclamation use. Instead, Kennecott, with assistance from the State Division of Oil, Gas and Mining will establish a test plot revegetation program to determine best techniques for supplementing and reclaiming the second horizon soil material.

(iii) Standard agronomic practices will be used to prepare the seedbed for drill and/or broadcast seeding. It is anticipated that the disturbed areas will be reclaimed principally with native vegetative species.

8992R-42

STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

June 27, 1986

Mr. Gregory H. Boyce, Director
Environmental Affairs
Kennecott
P. O. Box 11248
Salt Lake City, Utah 84147

Dear Mr. Boyce:

Re: Tentative Approval for "Phase II" of Kennecott's Mining and Reclamation Plan Amendment, UCD Modernization Project, ACT/035/002-(II), Salt Lake County, Utah

The Division has completed the technical review of Kennecott's April 28, 1986 permit application and the supplemental information provided May 27, 1986 for the "Phase II" portion of the Utah Copper Division (UCD) Modernization Project. We forwarded a deficiency letter to you on June 18, 1986 which identified remaining concerns which must be resolved prior to final permit approval.

As a result of our meeting on June 24, 1986, it was determined that the remaining concerns could be resolved during the public comment period. Kennecott verbally agreed to provide the following information to the Division:

1. A complete copy of the correspondence package which transpires between the State Department of Health and Kennecott which addresses:

   (a) Plans for the containment and recovery of potential leaks from the twin 48-inch pipelines.

   (b) Details regarding the ground-water monitoring program for the area down gradient of the proposed grinding plant site and pipelines.

2. A formal request for variance to Rule M-10(7), which requires reclamation of roads, pads, etc. not having an approved post-mining land use. Kennecott will clearly identify the roads, pipeline/conveyor corridors and associated facilities which will remain following termination of mining activities. A discussion must be included which describes the justification for not reclaiming these facilities.

   The Division must assume that Kennecott will be responsible for continued maintenance and servicing of those facilities which are proposed to remain following mine closure. The Division will consider formal written requests made by other entities who will assume ultimate liability and responsibility for continued use and maintenance of these structures.

3. A revised map (#712-SKC-3-152, Exhibit A) which outlines the entire permit and disturbed area(s) boundaries for the UCD Modernization Project. This map is also to identify the roads which are proposed to remain after operations cease.

4. Pipeline and conveyor corridor geotechnical design information concerning plans for cut and fill materials. This should include information on backfilling, grading, maximum slopes and compaction of the fill.

5. Clarification as to the locations of where the post-construction vs. permanent seed mix will be used.

6. A more detailed reclamation cost breakdown of the cost estimate as provided in Tables 1 - 4 of the April 28th submittal.

The Division hereby issues tentatively approval for "Phase II" of the permit amendment. The public notice information will now be forwarded to the local newspaper agency for publishing. Final approval and issuance of a permit to commence "Phase II" construction will be granted pending completion of the 30-day public comment period, receipt of the information outlined above, and upon receipt of the updated reclamation surety.

The Division appreciates Kennecott's cooperation in completing this permitting activity. If possible, please provide your response to these concerns by July 21, 1986. Should questions or concerns remain, please contact me or D. Wayne Hedberg of the permitting staff.

Sincerely,

D. Wayne Hedberg

for Lowell P. Braxton
Administrator
Mineral Resource Development
and Reclamation Program

jvb
cc: Dennis Dalley
Robert Morgan
Lynn Kunzler
Jim Leatherwood
Dianne Nielson
Ken May
Pam Grubaugh-Littig
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