



STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

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Act 7019/004
Randy

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Dianne R. Nielson, Ph.D., Division Director

December 24, 1984

CERTIFIED RETURN RECEIPT REQUESTED
P-396-996-939

Mr. Jack Lawrence
New Tech Mining Corporation
59 1/2 South Min
Moab, Utah 84532

RECEIVED

JUN 21 1985

DIVISION OF OIL
GAS & MINING

Dear Mr. Lawrence:

Re: Initial Completeness Review/Technical Deficiency Document, Black Jack #1 Mine, ACT7019/004, Folder No. 2, Grand County, Utah

The Division has completed an Initial Completeness Review (ICR) on the Permit Application Package (PAP) submitted by New Tech Mining for the Black Jack #1 Mine. New Tech must make a complete response to all comments under the ICR section before the PAP can be determined complete and the technical analysis phase of the review can begin. For expediency, several technical deficiencies have also been noted as a separate section of the enclosed review document. Answers to those concerns will not affect a Determination of Completeness, but must be responded to before a Technical Analysis can be done.

As noted in the review document, all responses to this review must be made so that they become an integral part of the PAP. Any material that is superceded by new material must be removed and the new material put in its place. All new material must be dated and numbered so as to fit logically into the PAP. An index, showing where each section of the review is addressed in the new material, must also be submitted.

A major concern of the Division is in regard to the proposed loadout facility. New Tech Mining has indicated that this should be included as part of the PAP, but have provided very little baseline information about the area. All of the regulations must be completely addressed regarding this area, as well as the rest of the proposed permit area.

Page 2
Mr. Jack Lawrence
ACT/019/004
December 24, 1984

In order to keep on a tight review schedule, the Division requests a response to this review by February 4, 1985. The Division technical review staff would be glad to meet with you to answer any questions you have regarding the review questions or the format for resubmittal. Please contact me or Susan Linner if we can be of assistance.

Sincerely,



Ronald W. Daniels
Acting Administrator
Mineral Resource Development
and Reclamation Program

SCL:jvb
Enclosure
cc: D. Darby
R. Harden
L. Kunzler
S. Linner
T. Portle
T. Suchoski
0084R

New Tech Mining Corporation
Black Jack Mine
ACT/019/004
Grand County, Utah

December 24, 1984

INITIAL COMPLETENESS REVIEW

UMC 771.23 Permit Application - General Requirement for Format and Contents - SCL, TLP

Chapter I pg. 1-8

All responses to this review and any other new material submitted as part of this Permit Application Package (PAP) must be submitted so that it becomes an integral part of the plan. Therefore, all new submittals which replace old material must be numbered and dated, and it must be clearly shown which old pages or maps the new pages or maps replace. If additional new sections or maps are added to the PAP they must be dated, and the Table of Contents updated.

(e)(2) The applicant must submit maps which distinguish among each of the phases during which underground coal mining activities were or will be conducted at any place within the mine plan area. At a minimum, distinctions should be shown among those portions of the mine plan area mined as per the dates in this section.

No map of the affected area at a scale of 1:6000 or larger is found.

UMC 771.25 Permit Fees - SCL

Chapter I pg. 1-28 (771.85)

The Division can find no evidence that the \$5.00 application fee has been paid. The applicant must either show proof of payment or remit the fee.

UMC 782.13 Identification of Interests - SCL

Chapter II pg. 2-3

(b)(3) The applicant must supply names under which the applicant, or any partner or principal shareholder previously operated underground or surface coal mining activities in the United States within the five years preceeding the date of application.

(d) The application must contain a statement of any current or previous coal mining permits in the United States held by the applicant subsequent to 1970 and of any other pending permit applications.

(g) Each application must contain a statement of all lands, interests in lands, options, or pending bids on interests held or made by the applicant for lands which are contiguous to the area to be covered by the permit.

The applicant must supply the legal or equitable owner of record for the proposed loadout area.

UMC 782.15 Right of Entry and Operation Information - SCL *Chapter II pg. 2-4*

The applicant must provide a document from the surface owner consenting to use of the surface for coal mining activities, including the loadout area.

UMC 782.17 Permit Term Information - SCL *Chapter II pg. 2-6*

(a) The application must state the anticipated starting and termination date of each phase of underground coal mining activities, and the horizontal and vertical extent of proposed underground mine workings, for each phase of mining and over the total life of the permit. The applicant must indicate what total life of the permit is.

UMC 782.18 Personal Injury and Property Damage Insurance Information - SCL *Chapter II pg. 2-6*

The insurance form submitted with the application shows an expiration date of April 15, 1984. The applicant must submit a current form to show that insurance is in effect at this time.

UMC 782.19 Identification of other Licenses and Permits - SCL *Chapter II pg. 2-8*

For each permit or license required the applicant must submit a copy of the approval letter, or if the permit has not been granted yet, list the date of application.

UMC 782.21 Newspaper Advertisement and Proof of Publication - SCL *Chapter II pg. 2-11*

The Division has not received any proof of publication for the advertisement of filing of an application for a mining permit. This must be supplied. The advertisement must include the legal description of the loadout area.

UMC 783.12 General Environmental Resources Information - SCL *see 782.17 Ch. II pg. 2-6*

(a) The applicant must describe and identify the size, sequence and timing of the subareas of the mine plan area for which it is anticipated that individual permits for mining will be requested over the estimated total life of the proposed underground coal mining activities.

Chapter I -

(b) The applicant must submit a survey of cultural and historic resources for the loadout site. *N/A*

UMC 783.14 Geologic Description - DD

Chapter VII - GEOLOGY

The applicant shows three minable coal seams that contain reserves on the property. The applicant should discuss the mining sequence of the seams to be mined.

The applicant should state whether any rock slopes will be constructed.

The applicant shall submit a chemical analysis of each coal seam to be mined which shows the pyritic, marcasite and sulfur content of the coal. Also an analysis of the roof and floor rock of each seam to be mined should be submitted which shows the pyrite content, alkalinity and clay content.

The applicant shall submit an isopach map of the overburden.

UMC 783.15 Ground Water Information - TJS

Chapter VII Pgs. 3, 8, 15, 19, 22, 29

(b) The Applicant has not provided sufficient data in Section 7.1.2.2 of the PAP to describe the ground water hydrologic regime. Only 2 samples were provided, both of which were taken on the same day, 3-14-80, for springs on or adjacent to the permit area. The applicant must supply sufficient baseline quantity and quality data to adequately define the seasonal variation of the groundwater regime. Please see recommendations in the existing Division Water Monitoring Guidelines.

The applicant must also commit to documenting the location of all water sources encountered during mining which make more than 1 gal/min and to monitor these sources on a monthly basis in accordance with the presently proposed ground water parameter list.

The Division also suggests that any additional water quality data, which was not included in the permit application package, be forwarded to the Division for inclusion in the review process.

UMC 783.16 Surface Water Information - TJS

Chapter VII pgs. 13, 22, 33, 45 & 48

(b) The Applicant has not provided sufficient data in Section 7.2.2 of the PAP to describe the surface water regime. Only 2 sets of samples, from Upper and Lower Thompson Creek, have been provided; one in March, 1976 and one in May, 1980.

Both of the samples were collected during the spring runoff period and do not allow evaluation of the seasonal variations in the surface water quality and quantity. The Applicant must provide sufficient information to identify seasonal variations in surface water flow conditions and water quality.

The Division also suggests that any additional water quality or quantity data, which was not included in the permit application package, be forwarded to the Division for inclusion in the review process.

UMC 783.17 Alternative Water Supply Information - TJS *Chapter III - (784.12 - 1.6) 3-23*
Chapter VII Pg. 22

The Applicant has not described any methods in Sections 7.1.3 - 7.1.5 or 7.2.3 - 7.2.5 of the PAP to provide water or identified any sources of water which could be used for replacement of water sources with water rights, on or adjacent to the permit area, which could be impacted by the mining operation. The Applicant must identify such water sources, so any unforeseen impact to either surface or ground water sources in the area of the mine can be mitigated.

UMC 783.19 Vegetation Information - LK *Chapter IX Vegetation & Revegetation*

It is uncertain as to whether the range site method or the reference area method (as described in the Division's Vegetation Information Guidelines (1982)) will be used for determining revegetation success standards. A phone conversation with Mr. Tex Edmiston of New Tech Mining indicated the Reference Area Method will be used. This must be clearly indicated in the PAP.

An analysis of the data sheets received by the Division on December 17, 1984 (from BLM-Moab) revealed several problems:

1. Cover was sampled by species rather than total vegetation cover;
2. Sample adequacy (Number of Samples) was met only for shrub density on the Loamy Bottom Range Site.
3. Sample methodology for cover does not meet OSM or Division standard.

It will be necessary to sample cover on the Loamy Bottom Range Site (Range Site III) and to sample cover and woody plant density on the Semidesert Very Steep Upland Loam range site (Range Site II). This sampling should be done in June or July, 1985 and conform to Division guidelines (copy enclosed). It is recommended that whoever does the additional sampling contact the Division prior to field work to discuss methodology, etc., thus avoiding the above mentioned problems.

Also, adequate vegetation information must be submitted for the proposed loadout facility.

UMC 783.20 Fish and Wildlife Resources Information - LK *Chapter X*

The Wildlife habitat maps of the permit area supplied to New Tech by Utah Division of Wildlife Resources on June 7, 1983 should be submitted as part of the PAP.

UMC 783.21 Soil Resources Information - TLP *Chapter VIII - Soil Resources*
Chapter III (784.13(b)(4))

An order 1 soil survey and map of 1:6000 or larger is necessary to adequately delineate the soil resource.

Each soil series must be delineated on the above map (using SCS symbols). Soil sample locations must be depicted for any series which will be/has been affected by surface disturbance.

Soil data to support the reclamation plan must be obtained and used to support the reclamation plan.

Since substitute soil materials will be required to affect reclamation (UMC 817.22(e)) a testing program to demonstrate the physical and chemical suitability and volumetric adequacy of any substitute materials must be proposed.

UMC 783.22 Land-Use Information - LK

Chapter IV Pg. 4-2
Chapter III (784-14) (784.15)

The applicant has not provided land use information for the proposed loadout facility.

UMC 783.24-.25 Maps and Plans - JRH, TJS *Enclosed in Plastic Envelopes*

All maps, plans and drawings must have the certification *Chapter II* and marking of a registered professional engineer.

Surface feature map (plate 3-10) does not include the permit area boundary or the disturbed areas and acres as required. All pertinent maps should indicate the permit area boundary.

UMC 784.11-.12 Operation Plan - JRH, TLP *Chapter III*

In general, the applicant's PAP is poorly written. Numerous typographic and sentence structure errors are contained throughout the text and make the PAP both confusing and difficult to understand the applicant's intent. The applicant must edit and provide a more complete plan in order to be considered for technical analysis and approval of the PAP.

The operation plan must include the loadout facility as part of the permit area. Other facilities such as substations and other ancillary facilities used in the mining operation must also be included in the operation plan description.

N/A

Handling of all materials, coal, coal waste, and noncoal waste must be addressed in the operation plan. Refer to those specific areas as indicated in the Technical Deficiencies sections for specific details concerning completeness in these areas.

Ch. III

784.19

The operation plan must also indicate which areas are to be disturbed within the permit area. Those areas which were previously disturbed by past mining operations but are to be redisturbed by the applicant's new mining activities must also be included in the operation plan.

Ch. III

784.12(a)

Existing structures and facilities are not complete. A more detailed description of the existing facilities and their current and planned use must be given in the applicant's PAP.

Ch. III

784.12

The applicant makes reference to future plans and proposals utilizing adjacent federal leases. The permit area in the PAP does not include any federal lease area. Regardless of plans or speculations made by the applicant for future operations, the applicant must consider complete reclamation plans for the Permit Area applied for in the PAP. Unless the applicant obtains additional coal leases and wishes to include those within the permit area, such considerations for possible expansion cannot be considered as viable alternatives for reclamation and post-mining land use within the permit area. In other words the PAP must deal only with plans for mining within the permit area.

N/A

Because of the above considerations, the PAP must show the complete mining cycle to be used for the permit area. This includes pillar retreat and subsidence control. The applicant currently states that there will be no retreat mining within the permit area, (pg. 3-10, PAP).

Ch. III

784.11(a)

Plans for roof control, ventilation, methane and dust control have been indicated in the PAP as submitted to MSHA and are referenced (pg. 3-10, PAP) but are not included within the applicant's PAP. These plans must be submitted prior to technical evaluation of the PAP.

Appendix

The mining plan does not mention the portal installations for the "P" seam as shown on Plate 3-8. The mining plan must address these portals as well as access roads and other

Ch. III

784.12(a)

associated facilities and features included in that area. Surface hydrology and control should also be included on this area.

Under UMC 817.71 the applicant must address the off site storage of underground development waste as proposed in 3.4.9. *Chapter III 784.19*
In light of values obtained and presented in tables 6-9 through 6-16 this disposal may require safeguards. Samples presented in Table 6-9 indicate low pH values and corresponding high sulphur values for S-7874, S-7875 and S-7876. In sample S-7875 the iron level may be of concern and likewise Zinc may be of concern in S-7874.

Will any of this material be brought to the surface for disposal? *No*

The applicant should provide expected volumes, maps and cross sections of the disposal pile itself pursuant to UMC 783.25. *N/A*

All soil and vegetation regulations will need to be addressed at the proposed disposal site. *(N/A)*
A map showing all topsoil storage locations is needed. *Chapter III 784.13(b)(3) & 784.13(b)(4)*

A narrative describing the construction and maintenance of all topsoil and underground development waste locations must be provided. *Ch. III 784.13 Chapter VIII 783.21 (Soil Resources) Chapter III 784.19*

Pursuant to UMC 817.22 the data obtained to address UMC 784.21 will need to be used to evaluate the adequacy of the applicant's proposed six (6) inch soil removal depth (3.5.2). *Chapter III 784.13(b)(3)*

Pursuant to UMC 817.23 expanded detail on topsoil storage and protection will be required. What seed mix and rate will be employed? What type of mulch and rate will be used? *Chapter III 784.13(b)(4)*

UMC 784.13 Reclamation Plan General Requirements - JRH, LK, TLP

The reclamation plan must include reclamation of all mine and mine related facilities which are not to be utilized for other purposes by the landowner. Although the applicant has indicated the potential future use of the facilities from mine expansion onto adjacent leases, those facilities must be accounted for and reclaimed under the reclamation plan. *Chapter III 784.13*

Areas which are re-disturbed by the operator must be included in the reclamation plan and reclaimed to a suitable post mining land use. *Addressed Chapter III 784.15*

All facilities used or constructed during the mining operation must be accounted for in the Reclamation Plan. Any facilities to be left for use by the landowner must be clearly defined and a written certification of the landowner's willingness to accept responsibility and liability for such facilities must be included in the applicant's PAP.

(b)(5) Timing for seedbed preparation and seeding should be such that these tasks are completed in the late fall (just prior to snowfall). Seedlings should be planted the following spring as soon as snow melts (when soil moisture is optimum). *Chapter IX Veg. Resources*

(ii) The proposed seed mixes are deficient in forbs. They also have several 'low quality forage' species. To improve range quality and enhance wildlife habitat, it is recommended the following changes be made: (Table 4-1, Seed mix for Range Site II) *Chapter IX*

Grasses

Elymus salina (Salina Wildrye) reduce to 1 pound Pure Live Seed (PLS) per acre
Agropyron smithii (Western wheatgrass) add at 5 pounds PLS/acre
Oryzopsis hymenoides (Indian ricegrass) increase to 3 pounds PLS/acre

Forbs

Add Penstemon palmeri (Palmer penstemon) and Linum lewisii (lewis flax) at 1 pound PLS/acre each, and Melilotus officinalis (yellow sweetclover) 2 pounds PLS/acre. Reduce rate of Sphaeralcea parviflora to 1 pound PLS/acre

Shrubs

Add Ceratoides lanata (winterfat) @ 250 seedlings per acre, eliminate Pinus edulis (pinyon pine) and Juniperus osteosperma (Utah Juniper)

(Table 4-2 (Seed mix for Range Site III))

Grasses

Replace Elymus salina with Elymus cinereus (Great basin wildrye) @ 6 pounds PLS per acre. Add Agropyron dasystachyum (thickspike wheatgrass) @ 4 pounds PLS/acre, increase rate for Oryzopsis hymenoides to 3 pounds PLS/acre, reduce rate for Sporobolus cryptandrus to .15 pounds PLS/acre

Forbs

Reduce rate of Sphaeralcea parviflora to 1 pound PLS/acre. Add Linum lewisii and Melilotus officinalis @ 2 pounds PLS/acre each.

Shrubs

Replace Juniperus osteosperma with Prunus virginiana (chokecherry) @ 200 seedlings per acre and Ceratoides lanata @ 600 seedlings per acre. (The alternates are broadcast seeding methods) Also, the number of each species to be planted must be identified. This number should reflect a normal mortality of seedlings.

(iv) The applicant needs to be specific as to the types and rate of mulch to be used.

(v) If seeding is to be done in spring/summer, irrigation will probably be required. Details as to the irrigation system (frequency and amount of water applied must be submitted).

(vi) The revegetation monitoring plan is insufficient. Please identify what parameters (and methodology) will be monitored. Also, the extent of monitoring should extend through the liability period.

Should you have questions regarding the revegetation plan please don't hesitate to call the Division's Reclamation Biologist.

The applicant has not provided a reclamation plan for the proposed loadout facility. *N/A*

A post mining contour map showing the final contours to be achieved by 3.5.4, 3.5.4.1 and 3.5.4.2 must be provided.

Pursuant to UMC 817.24 and 817.101 what methods of preparation of overburden and compacted areas will be employed?

At what season of the year and at what soil moisture condition will soil redistribution activities be conducted? Address the equipment needed for each separate task.

A topsoil/substitute material balance sheet must be *Chapter VIII* provided (See Soils Management Guidelines).

Expand on how terracing will be used in erosion protection and stabilization activities.

Will grading be done along the contours?

Pursuant to UMC 817.25 address the parameters to be evaluated and sampling methods to be used to evaluate the redistributed topsoil/substitute material (See Soil Management Guidelines).

UMC 784.14 Reclamation Plan: Protection of the Hydrologic Balance - TJS

Chapter III
Chapter VII

As has been mentioned under UMC 783.15 & 16, insufficient water quality and quantity data have been provided in Sections 7.1.2 and 7.2.2 of the PAP to assess either the baseline conditions of, or the potential impacts to, both the surface and groundwater hydrologic regimes. This information must be provided so that a determination of completeness can be made. Also Section 3.4.3 of the PAP addresses surface water impacts but does not address any impacts to ground water. The Applicant must expand the discussion of impacts to include impacts to the ground water hydrologic regime.

As discussed under UMC 784.16, the runoff control plan presented in Section 7.2.3 of the PAP does not contain sufficient details and design specifications. This information must be provided before a determination of completeness can be made.

Chapter VII
Map H2-3A

UMC 784.15 Reclamation Plan: Post Mining Land Use - LK

Chapter III

The applicant has not provided post mining land uses for the proposed loadout facility.

UMC 784.16 Reclamation Plan: Ponds, Impoundments, Banks, Dams, and Embankments - TJS

Chapter III
Chapter VII

There is some confusion between Section 3.2.9 Sediment Control Structures and Water Treatment Facilities and Section 7.2.3 Sedimentation Structures and Diversions. In Section 3.2.9 it is stated "One sedimentation pond is planned for permit area." In Section 7.2.3 a series of ponds are planned for the permit area. The Applicant must eliminate the discrepancy and correct the Section which is in error.

Chapter VII
784.16
817.46

The runoff control plan submitted by the applicant in Section 7.2.3 of the PAP is lacking sufficient detail regarding design constraints and concerns:

- (a) Design criteria and calculation results for diversion ditch sizing were not found. They were supposed to be presented in Figure 7-13. The information required includes: peak flow, maximum and minimum slopes of the diversion ditch, channel side slope, manning's n for the ditch, estimate of flow depth at design flow, and an estimate of flow velocity.

- (b) Design criteria and calculation results for sediment pond sizing were not found. The information required includes:
- (1) Peak flow estimates from both the 10yr & 25yr-24hr precipitation events including input parameters - drainage area, hydraulic channel length, average sub-basin slope, rainfall-runoff coefficient (i.e., curve number, rational coefficient, etc.), and rainfall depth for each pond;
 - (2) Demonstration that the sediment pond can contain the runoff and sediment volumes of the 10yr-24hr event;
 - (3) Demonstrate that the combined principal and emergency spillways are capable of passing the 25yr-24hr runoff peak;
 - (4) Demonstrate that no runoff will occur through the emergency spillway during the passage of runoff from the 10yr-24hr precipitation event.
 - (5) Demonstrate that the embankment crest is a minimum of 1 foot above the water surface in the reservoir with the emergency spillway flowing at design depth.
 - (6) The embankment height during construction needs be increased a minimum of 5 percent above the design height.
 - (7) Demonstrate that the embankment top width meets the criteria, being not less than the quotient of:
$$TW = (H+35)/5$$
where H = the height of the embankment as measured from the upstream toe.
 - (8) Demonstrate that the combined up and downstream slopes of the settled embankment shall not be less than 1v:5h, with neither slope steeper than 1v:2h.
 - (9) Commit to constructing the sediment ponds in accordance with 817.46 (n) - (p), (r), (s).
 - (10) Commit to monitoring all sediment ponds on a quarterly basis, for structural weakness, erosion, and other hazardous conditions, and to report the results of the monitoring to the Division as required in UMC 817.46 (t).

- (11) Based on the description of pond reclamation contained in the PAP, it appears that it is the applicant's intention to retain the sediment pond following the operation. If this is true the applicant must demonstrate that the ponds meet all the requirements for permanent impoundments of Section UMC 817.49 and 817.56. If the applicant does not intend to retain the ponds, adequate plans, addressing the concerns of UMC 817.46 (u), must be submitted.

UMC 784.18 Relocation or Use of Public Roads - JRH Chapter III Addressed

Applicant must provide proof of any encroachment permits or access rights required for access or used by the applicant or if the applicant intends on conducting mining activities within 100 feet of any public road.

If any maintenance agreements have been made with the county for roads used from the mine site to the loadout facilities, these agreements must also be included within the PAP. Chapter III 784.24
Letter - Grand County Chapter XIV

UMC 784.20 Subsidence Control Plan -DD Chapter III

The applicant submitted subsidence information for one coal seam. Since it has been proposed that three seams will be mined the applicant shall calculate and submit subsidence plans that analyze the extent of subsidence that will occur when all three seams are mined.

The applicant shall submit all subsidence calculations which show pillar strength and total subsidence. Chapter XII

The applicant shall project on a surface map the areas to be subsided and an isopach map showing the depth of expected subsidence.

UMC 784.21 Fish and Wildlife Plan - LK Chapter III, Chapter X 817.97

The Fish and Wildlife Mitigation and Avoidance Plan (Sections 10.4, and 10.5.2-10-5.5) appears to be a verbatim copy of the UDWR recommendations to the applicant. If these recommendations are to be adopted, the wording must be such that specific items are committed to. For example, wording such as "must be", "could be", and "need to be" accomplished must be changed to read "will be" or "shall be" accomplished.

With the exception of points 6 & 8, the wording of the mitigation listed on pages 3-25 & 26 is acceptable. However,

the introduction to these mitigation measures is confusing as to whether the company is merely acknowledging the recommendations or is adopting the recommendations. Please clarify.

UMC 784.22 Diversions - TJS *Chapter III 784.22 Chapter III 784.14*

As indicated in the comments on the runoff control plan of Section 7.2.3 of the PAP, the information required to evaluate the diversion structures, both for the ephemeral stream channel and the disturbed and undisturbed area diversions must be submitted.

UMC 784.24 Transportation Facilities - JRH *Chapter III*

The applicant must provide a detailed description including maps of any transportation facilities within the permit area. The applicant's loadout must also be included in the permit area and included within the description of the transportation facilities. The loadout facility will be incorporated into the permit area and all regulations applicable to the mine site area will be in effect for the loadout facilities. *N/A*

UMC 784.25 Return of Coal Processing Waste to Abandoned Underground Workings - JRH *Chapter III pg.*

It appears that there will be no coal processing waste returned to underground workings from the description of the mining operation in the applicant's PAP. However the applicant must clearly state that there are no coal processing facilities ~~w~~ within the permit area and that no coal processing waste will be returned to the underground workings.

UMC 786.19 Criteria for Permit Approval or Denial - SCL

The applicant must address each subsection of this regulation, so the Division can make the proper findings for permit approval or denial.

TECHNICAL DEFICIENCIES

UMC 805 Amount and Duration of Performance Bond - JRH

The applicant must supply sufficient information in order for the Division to determine adequacy of the bond. Such information required shall include estimated quantities for earthwork and unit quantities for other activities, calculations for selection of equipment and productivity, and manpower selection and cost estimates. The Division uses Blue Book Rental Rates for estimation of equipment rental and operating

costs and the Means Site Work Cost Data book to determine labor costs. Items such as revegetation costs and portal closures are determined by recent reclamation activities and current costs supplied from vendors and contractors in the area. Additionally, the Division shall allow for contingency and inflation when final bond estimates are considered. Usually, the Division will not adjust or consider the bond amount offered by the applicant until all or most of the technical considerations have been met. This allows for the least amount of calculation by the Division in determining the final bond estimate amount. The applicant shall however provide sufficient information for completeness on their bond estimate in order to determine technical adequacy of the plan.

UMC 817.11 Signs and Markers - SCL *Chapter III*

Other than indicating that topsoil storage piles will be marked the applicant has not addressed the requirements of this section, and must do so.

UMC 817.13-.15 Casing and Sealing of Exposed Underground Openings -
JRH *Chapter III*

The applicant has sufficiently addressed the permanent closure of exposed underground mine openings. The applicant must also include a definition of how temporary closure of mine openings will be accomplished and show that such procedures are within the 30 CFR regulations outlining temporary and permanent closure of mine openings.

UMC 817.59 Coal Recovery - JRH *Chapter III 784.11(a) 1.3 & 1.5*

The applicant has not satisfactorily addressed coal recovery in the PAP. The applicant has indicated that there will be no retreat mining within the permit area (pg. 3-11, PAP). The applicant then states under the subsidence control plan that pillar retreat will occur.

The applicant must submit as part of its operation plan, sufficient information as to the methodology, timing and quantity such that recovery can be evaluated. Once again, this consideration must be made with respect to the applicant's plan within the permitted area and not based on any contingent or speculative plans.

UMC 817.61-.68 Use of Explosives - JRH

The applicant should also indicate that there are no dwellings or structures within one-half mile of the blasting activity if there are no such features. And that there is no

public concern or conflict with the public interest for the surface blasting that will occur on the site.

UMC 817.71-.74 Disposal of Underground Development Waste and Excess Spoil and Nonacid and Nontoxic-forming Coal Processing - JRH

Chapter III 784.19

The applicant has indicated that due to the limited access area to the mine, no coal stockpiles or waste disposal will occur at the mine site (pg. 3-29, PAP). If all material including waste rock and coal spoils are to be trucked to the loadout facilities for disposal, the application must provide details and plans for storage and disposal of coal and coal wastes in the loadout area.

The applicant should also address the waste rock which will be generated in driving access entries to the multiple seams. *Chapter III 784.19* If this material is to be brought to surface the applicant must account for the material and its disposal location. If the waste rock is to be gobbed underground the applicant must state so and indicate that such stowing shall be in accordance with federal 30 CFR regulations.

UMC 817.81-.88 Coal Processing Waste Banks - JRH *Chapter III 784.19*

The applicant must state that there are no coal processing waste banks within the permit area because no coal processing facilities are located on the site.

UMC 817.89 Disposal of Noncoal Wastes - JRH

Chapter III 784.19

Disposal of noncoal waste including timber, oil and grease, trash, debris, and toxic materials generated at the site must be addressed in the PAP. Such a description must include provisions for any planned on site disposal of such materials, or, the location and permits required for off-site disposal to approved landfill and waste disposal sites or waste oil recycling facilities.

UMC 817.91-.93 Coal Processing Waste - JRH

Chapter III, 784.19

It is reasonable to assume that the applicant does not have any coal processing waste as there are no coal processing facilities contained within the permit area. However, the applicant must so state and indicate that no coal processing facilities exist and that no coal processing waste will be generated on the property.

UMC 817.95 Air Resources Protection - SCL

*Chapter III 784.26
Chapter XI*

The applicant must provide a copy of an Air Quality

Approval Order from the State of Utah for the disturbance associated with the mine, including the loadout area.

UMC 817.99 Slides and Other Damage - JRH

The applicant must provide a commitment within the PAP with regard to this section.

UMC 817.100 Contemporaneous Reclamation - LK

To fence an area off if no longer needed is not sufficient for contemporaneous or temporary reclamation. Please provide a revegetation plan to be used for all temporary or contemporaneous revegetation, including outcrops on dams, ponds, road cuts, banks, etc. Where possible it is suggested that the final seed mix, mulch, etc. be used, thus supplying information as to the success (or failure) of the final plan in time to make adjustments prior to final reclamation.

UMC 817.111-.117 Revegetation - LK Chapter IX

If comments under UMC 783.19, 784.13(b)(5) and 817.100 are adequately addressed, this section should also be complete.

UMC 817.131-.132 Cessation of Operations - SCL

The requirements of these sections must be addressed.

UMC 817.150-.176 Roads - JRH Chapter III 784.12

The applicant has not sufficiently addressed roads in the PAP. Surface runoff and control must be included in the mine plan. The applicant must also indicate specifically which roads are to be left unreclaimed for post-mining land use. Please refer to requirements under UMC 817.150-.176 for detailed requirements concerning roads.

Roads to be constructed and or maintained by the operator must be described in detail in the PAP. Such details shall include road profiles, culvert and drainage design, and primary function of each road.

UMC 817.180 Other Transportation Facilities - JRH Chapter III

Other transportation facilities must include a description of the conveyors and surface loadout at the mine site and a description of the rail loadout facilities. The description should indicate the size and use of the equipment, design requirements, and their disposition upon reclamation.

UMC 817.181 Support Facilities and Utility Installations - JRH *Chapter X*

The applicant shall address the requirements as contained in this section of the regulations. Commitments to protection of the environment should be considered and made in the application. Such items would include the use of raptor-proof *None* power lines, and erosion control methods used to prevent surface erosion and siltation in and around support facilities and surface utilities. *Chapter III, Chapter VII and Chapter X*

The applicant shall also indicate whether or not any utility installations as described in part (b) of this section currently exist or are planned as part of the mining plan.

0069R

COAL RECOVERY - COAL RESOURCES



MINE OPENING - C & S -

COST ESTIMATE -

---oOo---

UNDERGROUND COAL MINE
PERMIT APPLICATION

---oOo---

by
NEW TECH MINING INC.
59 1/2 South Main Street
Moab, Utah 84532

for
BLACK JACK #1 COAL MINE
Thompson Canyon
Grand County, Utah

UNDERGROUND COAL MINE PERMIT APPLICATION
Black Jack #1 Coal Mine
New Tech Mining Corporation

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UMC 817.99, Slide and Other Damage
UMC 817.131 - .132, Cessation of Operations
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* Submitted 6-85 no change
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DIVISION OF
OIL, GAS & MINING

CHAPTER I

INTRODUCTION AND SUMMARY OF PERMIT APPLICATION

Prepared For
NEW TECH MINING CORPORATION
MOAB, UTAH

Submitted June 1985

Revised September 1985:

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Text page 1-1 to include 1-6
No change in text beyond page 1-7

By
EMPIRE ENGINEERING & LAND SURVEYING
86 North 200 East
Price, Utah
84501

CHAPTER I

INTRODUCTION AND SUMMARY OF PERMIT APPLICATION
UMC 771

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CHAPTER I
INTRODUCTION AND SUMMARY OF PERMIT APPLICATION
PART UMC 771

UMC 771.13 SCOPE OF OPERATION

NEW TECH MINING CORPORATION owns the mineral rights on 160 acres of fee land and is applying for an underground coal mining permit on that ground. The estimated tonnage to be mined per year is 100,000 tons. The property is located 5 1/2 miles North of Thompson, Utah in Grand County. Geographically located in the Book Cliffs, the property is included in the Sego Coal Field of Eastern Utah.

The property has had coal mines operating intermittently since 1946 and the latest company to mine the property was West-Pac Mines, which last mined in 1978. There is an active bond covering this property, under the New Tech Mining and Department of Natural Resources Escrow in an amount greater than \$28,442.00 for any reclamation work required.

There are three coal seams of minable height on the property, two seams have been mined in two separate parts of the property.

Employment required for this mining operation is between 18 to 30 people, with the higher figure when full capacity production is reached.

The preparation of this application was done under the supervision of Harvey W. Merrell, a Certified Professional

Geologist and with the help of other qualified personnel as required.

771.23(e)(2) UNDERGROUND COAL MINING ACTIVITY REVIEW

Underground coal mining activity within the applicants permit area started in 1946, with the opening of the old Clark Mine (Reed Lance Mine) in the Chesterfield coal seam. Mining in the Chesterfield seam was from 1946 until 1954, within two separate areas of mining as shown on Plate 3-7A, mine plan "C" Seam, in shaded blue-black print color refer to Chapter 4, plate 4-4, UMC 783.22(a)(1) and Chapter 5, page 5-3, 5.3.2 HISTORY OF MINING. One area of mining consists of a single entry from the outcrop located near the center of the permit area. The other area of mining consists of two entries located along the outcrop to the north east. Both of these separate minings in the Chesterfield Seam were completed prior to August 3, 1977.

The West Pac Mine opened a coal seam in the permit area in the Ballard seam in 1975 and stopped mining activity in 1978. This mining is located on plate 3-6A and shown in the blue-black print color. It is not shaded. This mining consists of five (5) openings in the outcrop to establish a room and pillar mine. It is located in the center of the permit area. This mining was commenced prior to August 3, 1977 and completed in 1978. Whether

REVISED 9-85

prior to May 3, 1978, is not known. Mining definitely was stopped prior to January 1, 1979. Several other mining companies have looked at the property since 1978. Refer to chapter 5, plate 5-3, 5.3.2 HISTORY OF MINING.

Mining under this permit by the New Tech Mining Corporation anticipates a starting date of January 1, 1986, when the West Pac mine in the Ballard or "B" seam will be reopened and used. The mine will be known as the Black Jack #1 Mine.

PART UMC 783 SUMMARY OF ENVIRONMENTAL IMPACTS

The mining plans submitted by New Tech Mining are utilizing almost exclusively the roadways, mining pads, and surface facility areas that have been disturbed in the past for previous mine operations. The same portals will be utilized and additional entries made as needed in the mining plans. There are three coal seams present on the property, two have been mined, and the third seam will have to have additional work done to open up that seam for the mining operation. The installation of sediment ponds and conduit will also cause some additional disturbance of the environment but will mostly be within the presently disturbed area. There will be a minor amount of work needed to provide protection from surface water runoff.

There are no streams or groundwater to be effected by this operation, no wildlife or historical places of value will be degraded and the soil and vegetation have previously been disturbed.

The coal will be loaded directly from the mine into a loading bin that will load the trucks that will transport the coal off the property. The dust problem on the roads from the mine to paved road at Thompson will be solved by using water or other chemical dust suppressant on the road.

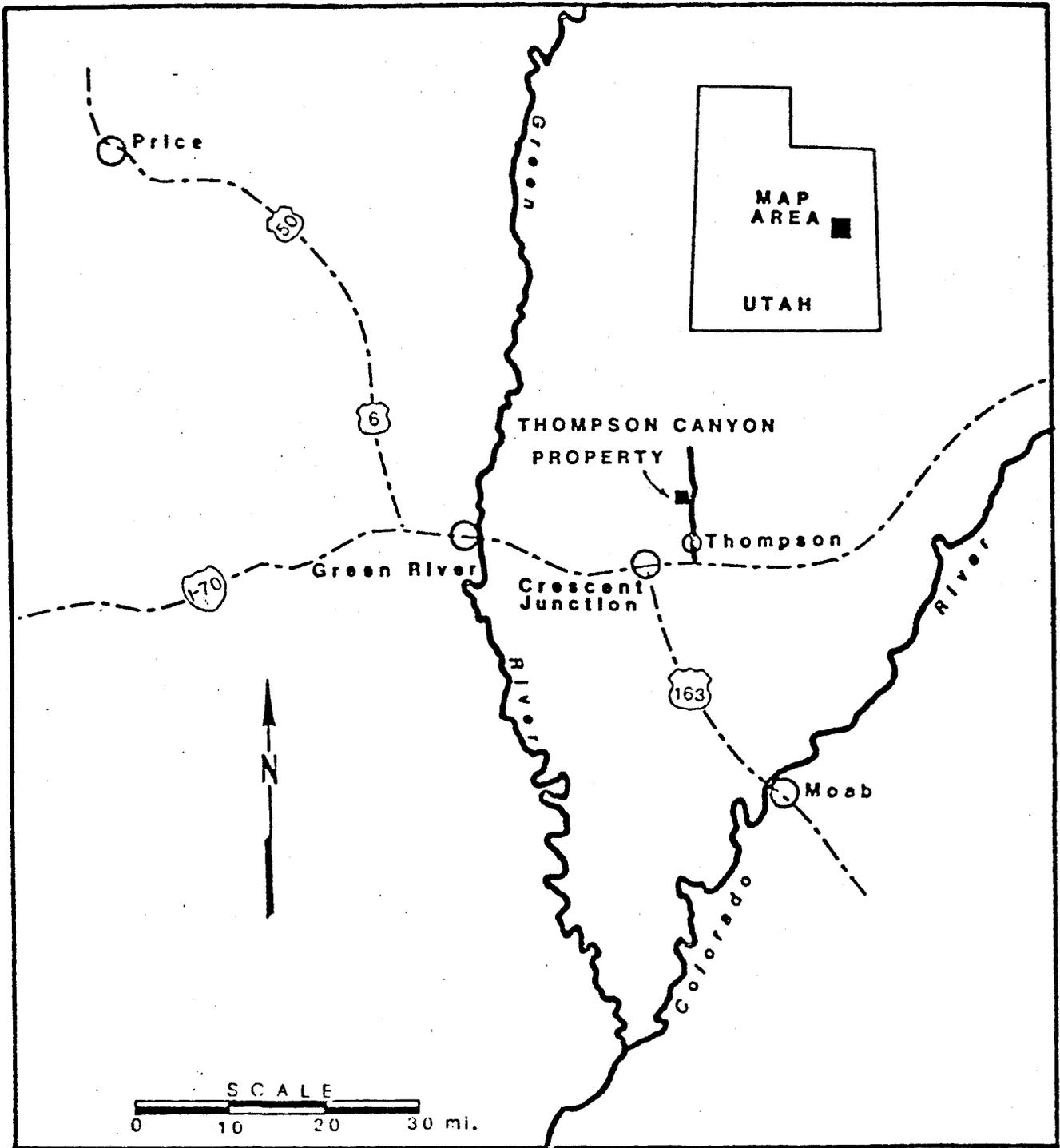


FIGURE 1. LOCATION MAP OF BLACK JACK MINE AND THE THOMPSON CANYON PROPERTY.

The socioeconomic effects on the region will be very positive as Grand County is one of the state's most depressed areas due to the slow down in the uranium industry. The additional employment at the Black Jack #1 Mine will be greatly appreciated. Overall, there will be very little adverse effect on the environment when this mining operation starts up.

UMC 771.23(a) INTRODUCTION TO DOCUMENT ORGANIZATION

The following two volumes contain New Tech Mining Corporation's permit application for an underground coal mine operation at the Black Jack #1 Coal Mine.

The applicant has assembled this application in a format as outlined in the "General Guideline for Organizational Format and Content" by Division of Oil, Gas and Mining dated November 3, 1980. Pursuant to U.C.A. 40-10-10(2) and UMC 771.23(a).

The application is divided into fourteen chapters as follows:

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UMC 771.23 SUMMARY OF MINE

Name: Black Jack #1 Mine

Owned by: New Tech Mining Corporation

Operated by: New Tech Mining Corporation

Located: Six miles North of Thompson, Utah

Anticipated Production: 100,000 tons per year

Type of Operation: Underground coal mine

Transportation System: Conveyor system to portal and loadout facility.

Elevation: 5,800 feet

Annual Precipitation: 9.4 to 12 inches per year

Vegetation Communities: Pinon-Juniper

Drainage: Thompson Creek

Area of Disturbance: 4.0 acres

UMC 771.23(c(1))(d)

PERSONAL RESUMES

UMC 771.23(c(1))(d)

PERSONAL RESUMES

RESUME

HARVEY W. MERRELL
Consulting Geologist
P.O. Box 645
Moab, Utah 84532

Education

University of Utah, B.S. Geology, 1955
University of Utah, M.S. Geology, 1957
Thesis: "Petrology and Sedimentation of Significant
Paradox Shales," (1957).

Certification

C.P.G.S. #4488 (American Institution of Professional
Geologists)
C.P.G. #2013 (American Association of Petroleum
Geologists)

Publications

Mineral Resources Inventory of the Paradox Salt Basin,
Utah and Colorado, UGMS, RI 143 Utah Geological and
Mineral Survey, Salt Lake City, Utah, October, 1979.

Experience

1978 to present - Consulting Geologist
Various clients in the fields of petroleum geology,
uranium, gold and other minerals, coal projects, economic
analysis of various proposed projects, and on Nuclear
Waste Repository Site project.

Employment

1966-1978 Atlas Minerals Division of Atlas Corporation,
Manager of Uranium Exploration, Chief Geologist.
Geologist in mineral exploration, western United States.

1957-1966 Pure Oil Company, Petroleum Geologist.
Paradox Basin, Utah-Colorado; Arizona, San Juan Basin,
New Mexico, Wind River Basin, Wyoming; Illinois Basin,
Southern Illinois.

1957 Union Oil Company of California, Field Geologist,
Eastern Nevada.

1955-1956 New Jersey Zinc Company, Mining Geologist,
Gilman, Colorado.

Affiliations

Society of Mining Engineers of A. I. M. E.
American Association of Petroleum Geologists
Society of Economic Geologists
Utah Geologic Society
Rocky Mountain Association of Geologists
Energy Mineral Division of A. A. P. G.
American Institute of Professional Geologists
former member Utah Seismic Safety Advisory Council

RESUME

Lloyd R. "Tex" Edmister
P.O. Box 506, Moab, Utah 84532
(801) 259-8641

PREVIOUS WORK EXPERIENCE

April 1978 to Present - Northern Coal Company, 345 Market St.,
Meeker, CO 81641 - (303) 824-8309

My present duties consist of the supervision of seven people of the Coal Loading Facilities, liason with and coordination of unit train procurement, and shipping with the railroad (principally The Denver and Rio Grande Western Railroad); the crushing, blending, stock-piling and inventory control of coal; also, coordination with city and county government on compliance with local ordinances and regulations.

Before being transferred to my present position, I was Production Superintendent of the Rienau #2 Mine. My responsibilities there included the supervision of 60 employees involved in the producing and shipping of coal to the Loadout Facility. We operated three shifts, with one producing section at a time on development. While I was there, we increased our production from approximately 200 tons per shift to 551 tons per shift for the last quarter of 1980. I also made up my budget for manpower and equipment needed to operate the mine, and was included in the decisions on purchasing type and brand name of equipment. We have two 12CM Joy miners, four 10SC22 shuttle cars, Long AirDox belt drives. We have diesel powered support equipment consisting of: one 935 Eimco Scoop, four Kubota tractors, and one Ford tractor.

Prior to holding the Mine Superintendent position, I set up the outside repair shop, warehouse, and trucking operation (which hauled coal from the mine to the loadout facility). My responsibilities in this position included the supervision of 15 people, maintenance work on all the outside mine equipment, building various underground items (belt guards, beams for overcasts, etc.), coordination of the trucks with the mining operation, receiving of new equipment and parts and sending them to the mine. I purchased, and recommended for purchase, six Kenworth tractors and six end-dump semi-trailers, one boom truck, all of the shop equipment necessary to maintain and repair the trucks and mining equipment.

Before we were ready to set up the shop and warehouse, I worked underground as a mechanic/electrician, maintaining all the mining equipment in the Rienau #2 Mine.

January 1974 to April 1978 - Mid Continental Coal & Coke Company
1058 100 Road, Carbondale, Colorado 81623 - 963-2581
My duties consisted of the supervision of various crews on a Longwall operation, including Packwall maintenance and production. We set up the first Advancing Longwall in the United States. We renovated the entire mine to set up the Longwall; recutting all main entries from the face to the portals (seven entries 5200 ft. long). We started mining with a Joy 6CV Ripper Miner and later went to a Joy 12CM Continuous Miner. My duties when this operation was going on were mechanic/electrician, miner operator, and I also did the drilling and shooting when necessary.

September 1972 to January 1974 - Western Slope Carbon - Hawks Nest Mine, Somerset, Colorado 81428
My duties consisted of being a Section Foreman in a development section and a Section Foreman in a pillar section. I was also the graveyard Mine Foreman, supervising mechanics, roof bolters and material men supplying the sections.

February 1970 to September 1972 - Mid Continent Coal & Coke Company - 1050 100 Road, Carbondale, CO 81623
My duties consisted of Firebossing and Leadman on a crew for rockdusting and pumping water out of the mine. I worked for a contractor, drilling and shooting rock dikes, as a mechanic, electrician, miner operator, loader operator, and crew leader as we were developing the mine to set it up for production.

March 1969 to February 1970 - Atlas Minerals Corporation - Moab, Utah 84532
My duties were machinist, mechanic, and welder. I maintained pumps, crushers, ball mills, belts and other related equipment in the uranium mill.

August 1968 to March 1969 - Bob Fine Machine Shop - Mill Creek Drive, Moab, Utah 84532
My duties were machinist, welder and mechanic in a Job Shop. We repaired, rebuilt, and manufactured parts and machines for drill rigs, and mining, and construction equipment.

April 1968 to August 1968 - Centennial Development Corporation -
LaSalle, Utah 84532

My duties while sinking a shaft for a uranium mine included mechanic and welder. We set up hoists for the shaft, and I did all of the high work on the 120 ft. headframe. I repaired sinking hammers and mucking machines, set up batch plant for pouring the concrete shaft walls, operated the batch plant, hoist, front-end loader and did the Toplanders job when there was no maintenance work to do.

August 1964 to April 1968 - Texas Gulf Sulphur Company - Moab,
Utah 84532

My duties were mechanic/electrician maintaining Joy 6PM miners, Marrietta boring miner, Lee Norse drum miner, Joy 14BU loaders, Goodman loader, Joy 15RB cutting machines, Joy CD42 face drills, Joy roof bolter, Torkar diesel shuttle cars, and Joy 10SC in a Potash mine. I worked in all given sections of the mine during the time I was with the company. I learned to operate each piece of equipment in each section I worked in. I was also Relief Maintenance Foreman.

OTHER WORK EXPERIENCE

Prior to 1964 I was a machinist, welder, and mechanic. I was shop foreman on several jobs. I have worked in oilfield shops and job shops repairing oilfield and construction equipment, also aircraft shops manufacturing aircraft parts.

CERTIFICATES HELD

State of Colorado Mine Foreman Papers
State of Utah Mine Foreman Papers
Colorado Certified Emergency Medical Technician
Federal Electrical Papers
Colorado Electrical Papers - Underground and Surface

EDUCATION

I am presently taking courses in Bookkeeping and Traffic Management.

I have been to several company-sponsored seminars which include: Middle Minorities and Women, Maintaining Non-Union Status

Lloyd R. "Tex" Edmisten
Page Four

I graduated from Capitol Hill High School, Oklahoma City,
Oklahoma - 1948

HOBBIES

My hobbies include golfing, hunting, fishing, boating, gun
smithing and racing horses.

RESUME

LLOYD M. PIERSON

Education: BA, University of New Mexico, 1943
Major: Anthropology, Archeology specialty
Minor: American History

MA, University of New Mexico, 1949
Major: Anthropology, Archeology specialty
Minor: American History

University of Michigan, 1 yr., Area/Language
study: Spanish

Military Intelligence Training Center, 6 mo.
Aerial Photo Interpretation and Japanese
Order of Battle Specialties

National Park Service, Harpers Perry Inter-
pretive School: 6 weeks. Interpretation
of Natural Resources

Experience: National Park Service 1948-1966
Ranger and/or Archeologist: Aztec Ruins,
Tonto, Montezuma Castle, Chaco Canyon,
Arches, Shenandoah
Superintendent: DeSoto, Appamatox Court
House

Bureau of Land Management 1966-1975
Staff Archeologist, Denver Service Center

Moab Museum
Director (gratis) 1958-1961

Other Pertinent Experience:

New Park Planning Team; Canyonlands National
Park 1957-1961
Director, Colorado Historical Society 1974-
1975
Participant, Airly House Seminars, Society
for American Arch. 1973
Chairman, State of Colorado's State
Archeologist Advisory Committee, 1974-1975

Member, Steering Committee, American Society
for Conservation Archeology, 1974

Member:

Society of Professional Archeologists
(Registered)
Utah Historical Society
Society for American Archeology
Archeological Societies in New Mexico and
Colorado

Principal Bibliography:

Steen, Pierson, Kent and Bohrer,
"Archeological Studies at Tonto National
Monument, Arizona"
Southwestern Monuments Tech. Series, Vol.
2, Globe. 1962

Pierson, L., "A Short History of Camp Verde,
Arizona to 1890" El Palacio, Vol. 64,
pp. 323-339, 1957
"The Winneman Ranch Site, Central Arizona",
El Palacio, Vol. 66, pp. 128-139, 1959.

RESUME

Richard Kim Loveridoe

125 East Center Street
Moab, Utah 84532

(801) 259-5413
or 259-5835

- Objective - A position which utilizes my engineering skills in the mining or related industry.
- Education - B.S. degree in Mining Engineering, July 1983, University of Utah, Salt Lake City, Utah.
- Work Experience - January 1983 to present. Harvey W. Merrell, Consulting Geologist, Moab, Utah. Assisted in the preparation of federal and state permit applications incident to the reopening of existing coal properties. Duties consisted primarily of developing long range mining and ventilation plans, as well as drafting and technical writing.
- Autumn 1982. Teaching Assistant, Underground Mining Methods, University of Utah. Responsibilities included planning and coordinating of oil field trips to demonstrate the differing types of mining methods employed in several underground mines in the western United States. Instructed students in underground mine safety regulations.
- Summer 1981. Mining Engineering Trainee, Rio Algom Corporation, Lisbon Mine. Duties consisted of underground and surface surveying, mapping, sampling and ventilation control. Supplemental work included presenting plans to develop and mine a new section of the underground ore body.
- Summer 1980. Laborer, Rio Algom Corporation, Lisbon Mine. Given various labor related

duties including the operation of heavy equipment.

Summer 1979. Construction Worker, Rynio Construction, Moab, Utah. General construction activity with emphasis on masonry and block work.

Summer 1978. Drilling Assistant, C & H Mining and Drilling, Moab, Utah. Duties included assisting the driller with rig operations, as well as continual maintenance on various engines, compressors and drivetrains.

Summer 1977. Mill Laborer, Atlas Minerals, Moab, Utah. Consisted mainly of unclassified labor at a uranium processing mill. Gained limited skills in the operation of heavy equipment.

Special Training - November 1982. Certified in the training and care of the OCENCO EBA Model 6.5 Emergency Breathing Apparatus (mandatory in gassy mines, Re. 1982).

Summer 1980. Mine and Industrial Fire Certified, Rio Algom Corporation, Mr. William Francom, Safety Director.

Experience with UNIX computer operating system, especially in relation to computer simulation of underground mine ventilation and Penn State Program for gassy mines.

Honors - Recipient of Browning Scholarship, University of Utah, 1982-83. High School class president. All-State honors in track and field.

Interests - Hiking and back country exploration, archeology, water skiing, mechanics and athletics.

Richard K. Loveridoe
Page Three

Personal - Single, 6'2", 185 lbs., 24 years old, excellent health.

References - Available upon request from the University of Utah Placement and Career Information Center, 2180 Annex, Salt Lake City, Utah 84112. (801) 581-6186.

RESUME OF RICHARD O. COZZENS

EDUCATION -

Graduated May, 1957 with Honor, Bachelor of Science in Civil Engineering, University of Wyoming, Laramie, Wyoming.

President of American Society of Civil Engineers, Student Chapter, 1957.

Engineers' Joint Council - President - 1956.

Sigma Tau - Engineering Honorary - Member 1955, 56, and 57.

Phi Kappa Phi - National Honorary - 1957.

CURRENT PROFESSIONAL STANDING -

Professional Engineer - State of Utah - License No. 2648.

Professional Engineer and Land Surveyor - State of Wyoming, License No. 592.

Registered Land Surveyor - State of Utah, License No. 2380.

EMPLOYMENT EXPERIENCE -

City Engineer for City of Moab, Utah from May 1, 1963 to 1965.

Manager of Holder Engineering Service, Moab, Utah Branch, September 1, 1957 to January, 1963.

Owner of Cozzens Engineering and Construction Co., Moab, Utah from 1963 to present.

RESUME

VAUGHN E. HANSEN

Personal Data

Born: July 26, 1921 in Syracuse, Utah
Married: Ten children
Address:
Office - Vaughn Hansen Associates
5620 South 1475 East
Salt Lake City, Utah 84121
Phone: (801) 272-5263

Home - 2046 Walker Lane
Salt Lake City, Utah 84117
Phone: (801) 278-5049

Academic Background

B.S.	1943	-	Utah State University	Civil Engineering
M.S.	1947	-	Utah State University	Physics and Mathematics
Ph.D.	1949	-	State University of Iowa	Fluid Mechanics

Profession and Honor Societies

Consulting Engineers Council
Society of Phi Kappa Phi
Society of Sigma Xi
Society of Sigma Tau

Accomplishments and Honors

Registered Professional Engineer, State of Utah.

Listed in American Men of Science, Who's Who in the West, and Who's Who in American Education.

Author, revised edition of "Irrigation Principles and Practices," John Wiley & Sons, Inc., New York. 1980.

Awarded Collingwood Prize for 1954 by the American Society of Civil Engineers in recognition of paper, "Unconfined Groundwater Flow to Multiple Wells."

President, Intermountain Section of American Society of Civil Engineers, 1958.

Chairman, Conference Program Committee, Environmental Engineering Conference, American Society of Civil Engineers, 1964.

Chairman, Committee on Surface Irrigation, American Society of Agricultural Engineers, 1956-1959.

Consulting, Research and Teaching Experience

- 1974 Principal, in consulting firm of Vaughn Hansen Associates. Projects have included water supply and salinity studies for Utah Power and Light Company, water quality studies in eight counties in Utah, water rights determinations for Deseret Livestock Ltd. and for other ranchers, environmental studies for Bush and Gudgel, ground water studies for National Distribution Systems, and water resources development for Skull Valley ranches.
- 1972 - 1974 Consultant to Nielsen, Maxwell and Wangsgard. Directed Weber Basin Water Quality Study, infiltration study of Salt Lake City sanitary sewer system, environmental studies of flood control measures in Salt Lake County and several road improvement projects, ASARCO Mine dewatering plan, Weber and Davis canal improvements, water resource study in Upper Fremont River Basin, and designed a large viaduct.
- 1972 Consultant to Utah State University to a large company in Bolivia and to Bolivian government on water resource development.
- 1970 - 1971 Consultant to Clyde, Criddle and Woodward evaluating the effect of the Union Pacific causeway across Great Salt Lake and studying the impact of power regulations on Indian water rights in Upper Wisconsin.
- 1968 - 1971 Consultant to several large ranches and companies in resource and product development.

- 1966 - 1967 Consultant, University of Utah and Brigham Young University reviewing their development and research programs.
- 1964 - 1966 Established the Inter-American Center for Land and Water Resource Development in Venezuela for OAS and served as its coordinator, Utah State University. Established and served as first director of the Utah Water Research Laboratory, Utah State University.
- 1964 - 1968 Consultant National Science Foundation.
- 1958 - 1964 Director of Engineering Experiment Station, Utah State University.
- 1956 - 1964 Consultant, Harza Engineering Company reviewing irrigation and drainage plans for West Pakistan, Arizona Interstate Stream Commission on Colorado River adjudication, Kelsey-Hayes Company coordinating the Astrophysics division in Utah, Hawaiian Sugar Planters Association formulating irrigation research program, developing plans for water resources development in Angola.
- 1956 - 1966 Professor of Irrigation and Drainage Engineering, Utah State University.
- 1954 - 1961 President, Agricultural Development and Engineering Services.
- 1954 - 1955 Assistant Chief Engineer, Hydrotechnic Corporation, developing water resources in Angola.
- 1952 - 1954 Irrigation Engineer, Bureau of Plant Industry, Soils, and Agricultural Engineering, USDA.
- 1951 - 1952 Consulting Engineer, S/A Industries, Reunidas F. Matarazzo in Brazil developing water resources.
- 1949 - 1954 Consulting Engineer, Brownings on water resource development.

1949 - 1952 Irrigation Engineer and Research Assistant Professor, Soil Conservation Service cooperating with Utah State University conducting irrigation research and teaching.

1948 - 1949 Instructor, State University of Iowa.

1947 - 1948 Research Associate at Iowa Institute of Hydraulic Research.

1946 - 1947 Engineer, U.S. Geological Survey.

1946 Engineer, Bureau of Plant Industry.

1943 - 1946 Commissioned Officer, U.S. Naval Reserve on active duty.

1943 Engineer, Soil Conservation Service.

1941 - 1943 Agent, Utah State University.

1940 Farm Supervisor, Agricultural Adjustment Administration, USDA.

Publications

Textbooks - 1
Journals/monographs/papers - 40
Reports - 13

1977 - 1978

North Logan City Engineer.
Responsibilities included:

1. Data Collection, Verification, and Computer Analysis of the North Logan City Water Distribution System.
2. Design of Subdivision Sewers and other related City Construction Projects.
3. Inspection of Construction Projects.

1975 - 1977

Research Assistant, Utah State University. Projects involved in:

1. Salinity Uptake in Natural Channels Traversing Mancos Shale Formations in the Price River Basin.
2. Dyking as a Means for Controlling Great Salt Lake Levels.

REGISTRATION

Engineer in Training, Utah, 1978.

SCHOLARSHIPS AND AWARDS

Utah State University Football Scholarship, 1972 -1973
Honor Roll, Utah State University, 1975 - 1979
Kennecott Scholarship, Outstanding Junior Civil Engineer,
U.S.U., 1977 - 1978
Magna Cum Laude Graduate, 1978

AFFILIATIONS

Member, Phi Kappa Phi
Member, Tau Beta Pi

Report Prepared By.

Daryl Trotter

Education: B.S. Botany, Range Science;
Brigham Young University 1972

Experience: BLM, 9 years; 1 1/2 years
Environmental Coordinator, 1 year
Range Conservationist, 3 1/2
years Planning Coordinator, 3
years Chief of Planning and
Environmental Assistance

RESUME OF EVAN E. HANSEN

Professional Affiliation

Professional Engineer - Utah No. 3354

Registered Land Surveyor - Utah No. 3115

Professional Engineer & Land Surveyor - Wyoming No. 709

Current Address

1665 East Sagewood Road
Price, Utah 84501

Personal Statistics

Born November 25, 1940 at Mayfield, Utah.

Married, 6 children

Excellent health

Education

Gunnison Valley High
Gunnison, Utah

1959

Snow College
Ephriam, Utah

A. S. -Engineering
1961

Utah State University
Logan, Utah

B. S. -Civil Engineering
1965

Employment History

June 1981 - Present

Professional Engineer

Empire Engineering and
Land Surveying
86 North 100 East
Price, Utah 84501

Empire Engineering is a general consulting firm. We have done projects for oil and gas exploration companies, designing location pads and access roads on B.L.M. and National Forest Lands. We have done projects for coal companies. We have redesigned the outlet works for Huntington Reservoir, inspecting construction of the same. We have designed a 180 acre foot irrigation reservoir, also inspecting the construction of the same. And, of course, we have done numerous subdivision designs and property surveys.

May 1978-June 1981

Manager,
Outside Engineering

Emery Mining Company
(Previously American Coal Co.)
Huntington, Utah

I was in charge of all outside surveying and construction projects, including review of plans and inspection of projects. Design projects included parking lots and storage facilities at Deer Creek, Deseret, Behive, Little Dove, and Wilberg Mines, as well as the Central Warehouse Facilities.

October 1976-May 1978

Supervisory
Civil Engineer

U.S. Forest Service
Manti-Lasal National Forest
Price, Utah

I served as principal engineering staff member to the Forest Engineer. Main responsibilities included being in charge of all pre-construction activities on the Forest, i.e., survey, design cost estimation, and specifications. I also reviewed plans and

Evan E. Hansen
page three

specifications submitted by other agencies and companies proposing to do work on Forest Lands. I also made site inspections of proposed projects to determine their impact on the forest environment.

November 1973-September 1976

Zone Engineer

U.S. Forest Service
Bridger-Teton National Forest
Jackson, Wyoming

I was zone engineer on the Gros Ventre, Hobach, and Buffalo Ranger Districts. I served as Staff Assistant to the Rangers, providing professional engineering advice and directing all engineering activities within the Ranger Districts. My main responsibilities were in the design and construction administration of timber roads.

September 1971-October 1973

Sanitary Engineer

U.S. Forest Service
Dixie National Forest
Cedar City, Utah

I worked as Sanitary Engineer in preparing plans and cost estimates for pollution problems on the Dixie National Forest. This included the design of a sewer system and lagoon, along with construction of two new comfort stations at the Panguitch Lake Campground. I was chief inspector on this project until being transferred.

May 1966-September 1971

Engineer

U.S. Forest Service
Dixie National Forest
Cedar City, Utah

I had responsibility for a variety of engineering assignments, of increasing complexity, after accepting employment with the Forest Service. Including the survey and design of water and sewer systems, roads, trails, campgrounds, and related forest improvements. The largest project I worked on during this period was

the survey and design of a road between Cedar Breaks National Monument and Panguitch Lake. This project was slightly over 13 miles in length and included a 26 foot paved surface. I had major responsibility for the survey and design of this road, with authority to shift and refine both horizontal and verticle alignment in order to achieve an optimum design in consideration of function, economy, esthetics, and impact on the terrain. This assignment was a broadening experience.

June 1965-May 1966

Engineer

Utah Department of Highways
Ogden, Utah

I was involved in the administration of the contract for the construction of I-80 at the mouth of Wever Canyon, and on Highway 89 between Uintah and Farmington Junction. My responsibilities included inspection, construction staking, supervision of survey crew, office calculations of pay quantities, and preparation of reports.

Additional Experience

After obtaining my land surveyor license, I purchased a theodolite, calculator, and necessary supplies to equip a survey crew. Since that time I have designed and laid out subdivisions, made property surveys, and well proofs. I have employed two or three men on a part-time basis as survey party members.

RRESUME OF JOE E. SHOEMAKER

Professional Affiliation

Registered Land Surveyor - Utah No. 4267

Member A. I. M. E.

Member A. C. S. M.

Current address

115 Grant Avenue
East Carbon, Utah 84520

Personal Statistics

Born April 15, 1949 at Carlsbad, New Mexico

Married, 4 children

Excellent health

Education

Grand County High Moab, Utah	Graduated 1967	
Dixie College St. George, Utah	1968-69	
		Civil Engineering
Utah State University Logan, Utah	1970-71 1976	

Notable Achievement

Mayor, East Carbon City	1978-81
Outstanding Young Men of America	1979
President, East Carbon Rotary	1982-83

Joe E. Shoemaker
page two

April 1979-August 1982

Chief Surveyor

Valley Camp of Utah
(Western Division Coal)

Responsibilities-

Survey Control - all survey and platting, surface and underground

Records - Maintain land, mineral, and water right files. Handling paperwork required for aquisition, exchange, and sale of same.

Reports - Extraction, storage, reserves, mining projections, impoundments, etc.

Special Projects - design supervision, construction layout, and inspection of new mine facilities. Including earthwork for a head of hollow fill, sedimentation impoundments, a 10,000 sq. ft. bath house - office building, and a wastewater treatment facility. Also preliminary design for a 7,000 ton storage silo, and a 3 mile overland conveyor system.

August 1976-April 1979

Mine Engineer

Kaiser Steel
(Sunnyside Coal Mines)

Responsibilities -

Same as at Valley Camp, above.

Special Projects - Design supervision, construction layout, and inspection of new mine facilities. Including earthwork for sedimentation impoundments, installation of a 7,500 ft. steel cord conveyor system, and construction of underground storage bunkers.

March 1974-August 1976

Surveyor/Draftsman

U.S. Steel
(Western District Coal)

Joe E. Shoemaker
page three

Responsibilities-

Same as at Kaiser Steel, Above.

Special Projects - major expansion of surface control (triangulation network), logging of 26 drill holes, and the design and construction of an access road for E SEAM development at the Somerset, Colorado facility, I also set up a computerized file indicating land holdings, mineral holdings, and calculated reserves of each 40 acre tract within the Western District.

Additional Experience

Since obtaining my land surveyor license in 1975 I have maintained a part-time surveying business, and worked as a consultant for several small mining ventures. I have also taught engineering, surveying, and mining related classes at the College of Eastern Utah for the past six years.

Personal History

LE FEVRE, BERNARD C., JR. 10872 Vickers Way
Garden Grove, CA 92640
Telephone: (home) (714) 530-3765
Telephone: (off.) (213) 648-5340

Nationality: U.S.A. Married Clearance: Secret

Education: University of Tampa, Florida, 1954-1957
University of Rochester, New York, Summer Session
University Gottingen, West Germany. 1957-1960
B.S. of Geology (Minors: Physics, Chemistry,
Mineralogy)
University of Chicago, Illinois. 1960 (graduate
work)

Foreign Reading and speaking knowledge of German, Spanish
and Portugese

Experience:

1980 to present. TECHNICAL MANAGEMENT. The Aerospace Corporation, 2350 East El Segundo Boulevard, El Segundo, California 90245. Directing technical support to the Bureau of Mines in the development of a plan, for the Oil Shale Mining Program, involving work in the hydrological, ground control, engineering, and health and safety aspects of oil shale mining.

Participated in the research on the mechanical and chemical properties of salt in salt domes, the stability of salt dome caverns, the stability of surface structures over salt dome caverns, and the design and process of leaching caverns in salt domes.

Participated in a coal mining subsidence project as a consultant to the Los Alamos Scientific Laboratories at Los Alamos.

Developed a strategic minerals program, designed a stability monitoring system for the disposal of radioactive waste materials in salt domes, planned a geothermal energy project for the MX missile system, and directed a survey of eastern oil shale deposits.

1979. MINING AND CONCENTRATOR CONSULTANT. National Bulk Carriers, Inc., 1345 Avenue of the Americas, New York, NY., 10019. Location: Amazon, Brazil. Tasks: Mine planning, concentrator modifications, waste water disposal, reserved determinations, pollution and sanitation problems in development of bauxite and kaolin deposits.

1978 - 1979. ADVISOR. National Iranian Copper Industries Company, S-Elizabeth II Boulevard, Tehran, Iran. Tasks: Advising, teaching, and supervising Iranian geologists, engineers, geophysicists and surveyors in the methods and techniques of exploration, mine development, mining, hydrology and geotechnics for copper, water, iron ore, coal, lead, zinc, gold, molybdenite, cobalt, rhenium, and radioactive minerals. Seminars on pollution, sanitation and equipment procurement were also held. I developed a mined out copper sulfide vein into a porphyry that measured out larger than the Sar Chesmeh mine.

1976 - 1977. CONSULTANT. Mr. Valta Peek, Star Route, Lakewood, Wisconsin 54138. Task: Land evaluation for minerals, agriculture and forestry.

1976. CONSULTANT. The World Bank, 1818 H Street, N.W., Washington, D.C. Location: Bolivia. Minerals: Tin, water, antimony, silver, copper and iron ore. Tasks: Analyzed and reported on projects financed under the International Development Association, Advised and assisted the Ministry of Mines and Banco Minero officials on project preparation, contracting and supervising procedures under a new loan.

1972 - 1976. SELF EMPLOYED. Laurens Flowers, Inc. 1112 38th Avenue, Menominee, Michigan 49858. owner and Manager. Planting and selling, Wholesale and retail.

1962 - 1972. STAFF GEOLOGIST, PROJECT EXPLORATION GEOLOGIST, MINE GEOLOGIST, EXPLORATION MANAGER AND MINE DEVELOPMENT MANAGER. Republic Steel Corporation, Republic Building, Cleveland, Ohio. Locations: Liberia, Colombia, Brazil, Malaysia, and others. My responsibilities during the above ten year ranged from on the ground exploration of iron ore, nickel, water, manganese, fluorspar, coal, phosphates, platinum, cobalt, etc. using aerial photographs, geochemistry, geophysics, pitting, trenching, mapping and diamond core drilling through mine planning and the scheduling of ships and trains. As Mine Development Manager, part of my job was to bring the property from the development stage into the production stage. This involved coordinating the law, accounting, and engineering offices in Brazil with the corresponding offices in Cleveland. My efforts in South America

were successful, resulting in development of one iron ore prospect into a mining property and finding two laterite nickel deposits.

1960 - 1962. CHEMIST. Armour Chemical Company, 110 North Wacker Drive, Chicago, Illinois. Tasks: Laboratory testing and evaluation of flotation reagents.

1954 - 1960. STUDENT

1951 - 1954. MILITARY SERVICE. U.S. Special Forces Group, Airborne, Honorable Discharge as S/Sgt.

I am the author of three professional papers:

Ultraviolet-Absorbing Components of Fossil and Modern Plants in Relation to Thermal Alteration of Lignins. S. M. Siegel, B. Le Fevre, Jr. and R. Borchardt. American Journal of Science, vol. 256, Jan. 1958, P. 48-53.

A Report on the Geology and Mining Procedures at Bomi Hills, Liberia, West Africa. B. Le Fevre, Jr., (In preparation.)

Professional Memberships: American Institute of Professional Geologists, Society of Mining Engineers of AIME

OBJECTIVE: Project Manager and technical advisor in the fields of exploration, property evaluation, mining, feasibility studies, facilities development and related fields.

I am experienced in foreign assignments and would be willing to accept a position outside the continental U.S.

REFERENCES

Smith, Craig
Civil & Mining Engineer
(Consultant-The Aerospace Corp.)
1627 Brookside
Redlands, California 92373
Tel: (714)792-1544

Rehfeldt, Warren
Mining Geologist
Nuclear regulatory Commission
Mail Stop 697-SS
Silver Spring, Maryland
Tel.-Off. (301)472-4173
Tel.-Home (301)774-3753

Earhart, Robert
Geologist
U.S. Geological Survey
Denver Federal Center
Denver, Colorado
Tel.-Off. (303)234-5028
Tel.-Home (303)674-4323

Burns, Dr. Kerry
Geology Consultant
Los Alamos Scientific Laboratories
Los Alamos, New Mexico
Tel.-Off. (505)667-6890
Tel.-Home (505)662-4254

Chrysostomou, George
Mining Geologist
82 Upper Tulse Hill
London, SW2 2RP, England
Tel.-674-4487 (Country Code 44)
(City Code 1)

Couzin Wood, Bob
Engineer
% P.O. Box 70325
Bryanston, 2021, South Africa

Hagen, John
Mining Geologist
Rua Campanha 117
CARMO
Belo Horizonte, M.G.
Brazil 30000

Drs. Sanford & Bobby Siegel
University of Hawaii
Honolulu, Hawaii 96822
Tel.-Off. (808)948-8043
Tel.-Home (808)488-6181

Van Voorhis, Bartow
Mining Engineer
Rua da Bahia 1148-S/1004
Belo Horizonte, M.G.
Brazil
Tel.-Off. 226-2923
Tel.-Home 222-8688

Weaver, Thomas
Physicist
Los Alamos Scientific Lab.
Los Alamos, New Mexico
Tel.-(505)667-7590

Wong, Nicolas
Geologist
5 Strickland Road
Andross, Western Australia
Perth
Tel. 645-991

Garolla, Juan
Engineer
Cia. Mineral El Indio
Los Urbinas 53, Piso 11
Santiago, Chile

RESUME

Merlynn O. Anderson
P.O. Box 1051
346 Columbia Drive
East Carbon, Utah 84520
Tel.-(801)888-5578

Age: 60

Date of Birth: September 26, 1923

Wife: Dolores E. Anderson

Children Living at home: D'Lynn Anderson
Merlyn O. Anderson, Jr. Student BYU
James I. Anderson
J'Lynn Anderson, Student East Carbon High

I had a physical examination on December 22, 1983 for Coal Mine Compliance Inspector - State of Utah, and was declared employable.

My education consists of the following:

Graduation from Carbon high School in 1941.

Graduation from College of Eastern Utah, Associate of Science 1951.

Graduation from University of Utah, Bachelor of science in Mining Engineering, 1953.

I am the recipient of the Old Timers Award and was elected to the Honor Society of Tau Beta Pi at the University of Utah.

I have taken the following Adult Education Courses:

Art and Landscape Painting - 1966, 1967, 1968
Computer Programming - 1983

I have taught the following night classes at CEU in Price, Utah:

Descriptive Geometry
Mine Fireboss and Mine foreman's Preparation Classes

I am a Registered Professional Engineer in the State of Utah, Mining Branch.

I possess both the mine fireboss and mine foreman papers for the State of Utah and have completed training and possess the following Department of Interior, Bureau of Mines Certificates and cards:

Merlynn D. Anderson
Page two

Mine Rescue training
Principles of Accident Prevention
Principles of Mine Rescue, Ventilation, MSHA Methane Spotter
and Bacharch Methane Detector

I also have taken a number of first aid courses and have assisted in teaching first aid, ventilation and roof support courses to U.S. Steel Employees.

My father was a licensed civil engineer, land surveyor, and architect. I worked with him on many projects of surveying, supervising construction of public buildings, facilities and office work. From him I learned drafting, surveying and surveying calculations.

Merlynn O. Anderson - Attachment

Applicant's detailed statements of qualification listing projects with duties and responsibilities.

Engagement No. 1 - United States Fuel Company July 19, 1953 to January 1954

As assistant mine engineer it was my responsibility to work with the mine engineer in all phases of mine planning, planning of mining districts, survey control and mapping. Planning and forecasting future mining districts. Planning, detailing and supervising mine construction.

Engagement No. 2 - United States Fuel Company January 1954 - August 1956

As chief engineer my responsibility consisted of all phases of mine planning, survey control, progress mapping, mine layout and forecast for five, ten and twenty year periods, district mining layout and sequence of mining, time and motion studies, year-end tax computations, maps and reports, supervision of an assistant mine engineer and surveying-draftsman helper.

The planning and supervision of a large, 1200 gpm pumping station to remove water from the mine. The pump installation consisted of turbine pumps and motors and electrical controls being placed in a dome cut in the rock roof to prevent damage from flooding during high water, power outages and down time.

Engagement No. 3 - United States fuel Company August 1956 - November 30, 1957

As chief engineer all duties and responsibilities to the mine as listed in engagement No. 2. As assistant to the General Superintendent it was my responsibility to look after the coal preparation plant and assist in taking coal samples, making coal-ash, sink-float and B.T.U. analysis. Also to take charge of the mine and plant during the superintendent's absence and on alternate weekends.

Engineering projects consisted of the layout, topographic surveying, planning, and supervision of the installation of a coal dumping station, breaker, raw coal storage and connecting belt conveyors to the tippie; a resin floatation and recovery plant and about two miles of mine haulage grading to the upper seam mine for large tandem locomotives.

Engagement No. 4 - United States Steel Corporation December 2, 1957 to May 1, 1960

As mine engineer of the Columbia Mine it was my responsibility to layout and plan the mining districts; to perform survey control of mining districts of a 9,500 ft. rock tunnel. The survey control traverse and elevations to connect to the underground entry. The traverse was over 32,000 ft. long. The error of closure was very small.

Another project was a major fault crossing on the main hoist entry extension. this crossing required a catenary roof and floor grading to reduce rope wear.

Engagement No. 5 - United States Steel Corporation, General Office, Western District-Coal. May 1, 1960 to October 31, 1983

As design engineer it has been my responsibility to design structures for surface and underground installations, sewer systems, mine dewatering and pumping systems; to help with mine forecast planning of mines in Utah, Colorado and the Coal Preparation Plant in Wellington, Utah.

Some of the major projects are:

1. Complete the structural design for an underground rotary dump station with load and empty track partings and a 2200 ft. belt conveyor installation at the Geneva Coal Mine.
2. The design of a major mine sprinkling, fire protection and dewatering pumping system, pipe lines and 400,000 gallon water storage tank at the Somerset Coal Mine in Colorado. This system consisted of two turbine pumps with connecting pipeline to the surface storage tank and also to the mining district for sprinkling. Fire outlets were placed along the pipeline for fire protection. Present system is now being enlarged by the addition of more pumps.
3. The design of a screening and recycle system for grading limestone and dolomite at Keigley Quarry.
4. The design of a fine coal recovery system for the Coal Preparation Plant. This project included the selecting of equipment and writing of equipment, installation specifications, and design of structural alterations and supports for equipment. The design for the installation of pumps, cyclones, flotation cells, froth sluices, pipelines and vacuum filter. Many

decisions were made concerning equipment selection, location within the existing plant and structural alterations necessary for installation.

5. Mine structures inspections and reports on all facilities structures both surface and underground. Major decisions relate to conditions and the maintenance and repair of structures.

6. Mine planning and forecast maps for one, five and ten year forecast of the Columbia, Geneva and Somerset coal mines. this requires projection of faults, mining entries, mining district layout, strike and dip computations and computations of tonnages to be mined.

7. The restoration of the Bear Canyon fan installation at Somerset which was damaged by an earth slide. Decisions and responsibilities include the earth removal and stabilization, location for reinstallation of fan, design of a unitized base to allow for movement of the fan base without damage, the installation of connecting tunnel liner and supervision of construction.

8. The design and supervision of installation of the Hubbard Canyon ventilation facilities at Somerset coal mine in Colorado. This plant consisted of a preliminary design of two 300 ft. deep shafts for intake and return complete with fans. the final design consisted of a 320 foot reinforced concrete lined incline with track and stairway, water control and drainage was designed behind the lining to prevent ice buildup during winter; a vertical return air shaft that connects to a horizontal reinforced concrete lined entry that connects to the fan ducts; two centrifugal fans - an electrical driven and a diesel driven standby; and a substation.

9. In 1961, I participated with Columbia Mine Shop personnel to design and construct an operator's safety cage on an 11BU Joy loader. This cage was followed by other cages on shuttle cars, coal drilling machines, continuous miners and roof bolters. These cages were the first in the industry and prints were sent throughout U.S. Steel Corporation and to other interested companies. These cages were developed and proven to save lives many years prior to the passing of the present Federal law requiring the same. Most of the early cages were in compliance with the load requirements of the law. Many decisions were made as where to locate and strengthen, the frame work of the equipment.

10. Preliminary mining development plans, surface facilities plans and an estimate of cost for the opening of a new mine in B-Canyon property. Mining plans were developed from the strike and dip computed from outcrop and drill holes into the coal seam. Surface facilities consists of an access road and railroad to a proposed plant location, water lines from available water source, mine office, shop, warehouse, bathhouse, ventilation plant, timber storage yard, rock dust bins, bulk oil tanks, substation, parking lot, mine to surface belt conveyor haulage, crusher and transfer plant, surface belt conveyor to unit train loading storage silo at the railroad, culinary water tank and facilities including fire protection system, sewer handling, treatment and effluent disposal facilities, underground mining equipment, underground and surface materials handling equipment and proposed land acquisition.

11. A recently completed project was preliminary survey, design, writing of specifications and supervision of the construction of a six tenths of a mile road to aid in development of a new mine in Colorado.

12. I am presently in charge of a drilling program to explore new upper coal seams in Colorado for opening a new mine. Preliminary plans and estimates have been completed by myself for surface and underground facilities and mining plans in this area similar to job listing 10, for the Utah property.

13. Other major projects which I have had engineering and supervisory responsibility during the planning, design, specification writing and construction are:

- a. Somerset Bathhouse specification and structural design.
- b. Geneva Mine—three mining districts dewatering pumps and pipe line systems and a major mine dewatering pumping system.
- c. Somerset shop and warehouse specifications and installation.
- d. Somerset unit train loading silo and belt conveyor installation.
- e. Somerset Elk Creek C-Seam mine track and mine opening while Somerset B-Seam mine was closed by a fire.
- f. Drill hole data evaluation to open a proposed mine in a new block of coal during the mine fire shutdown of Somerset coal Mine.

g. Design of concrete dams to flood fire area at Somerset mine during closure by fire.

h. Rehabilitation and opening of Somerset mine after the mine fire.

i. Teach aspects of the new Federal mine law pertaining to ventilation to mine supervisory personnel in Utah and Colorado.

j. Explosion door design for dryer plant reactor and duct at the Preparation Plant.

k. Numerous belt conveyor installations in Columbia, Geneva and Somerset mines and the deluge sprinkling system for conveyor drives as required by Federal law.

In all the projects listed under Engagement No. 5, many decisions were made that cannot be listed as my own because these were made in discussions while in engineering conference and group meetings, with mine superintendents and with the general superintendents. However, I feel my experience and training has influenced many of the decisions made during these meetings.

Engagement No. 6 - Part-time instructor for the College of Eastern Utah April to July 1974

For three months I taught night classes on Tuesday and Thursday evenings for two hours each night. This course was to prepare the applicants in the fundamentals required for passing the State Law to become mine shot firer, mine fire boss and mine foreman.

The subject material ranged from a study of general duties and organization of the State Mine Committee and Inspectors, mine gas laws, mine gasses and methods for their detection, the use and care of the flame safety lamp, the principles of mine ventilation including basic ventilation formulas and how to ventilate a mine, the use of explosives, transportation and electric power, first aid and mine rescue, principles of mine fires, and a review of samples of examination questions.

No 22

June 21, 1985

Received from New Tech Mining Corp.

Five & ^{no}/₁₀₀

Dollars

Permit Application Fee

\$ 5.⁰⁰

Betty B.

WILSON-JONES CO. U.S.A.



Verification of Applicant

State of California, County of Orange S.S.

I, Fred R. Hernandez the President of New-Tech Mining Corporation, herein, hereby certify that the material and information contained within the application for mining permit is complete and correct to best of my knowledge, information and belief.

[Signature of Fred R. Hernandez]
Fred R. Hernandez President

CORPORATE ACKNOWLEDGMENT

NO. 202

State of California
County of Orange } ss.

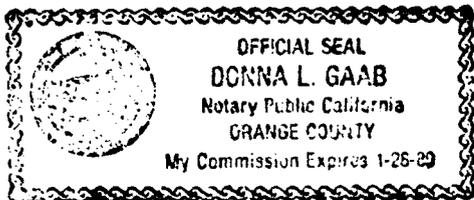
On this the 17th day of June 19 85, before me,

Donna L. Gaab

the undersigned Notary Public, personally appeared

Fred R. Hernandez

[] personally known to me
XX proved to me on the basis of satisfactory evidence to be the person(s) who executed the within instrument as President or on behalf of the corporation therein named, and acknowledged to me that the corporation executed it.
WITNESS my hand and official seal.



[Signature of Donna L. Gaab]
Notary's Signature

CERTIFICATION

STATE OF UTAH)
) ss.
COUNTY OF GRAND)

Except where otherwise indicated thereon, all maps and cross sections as submitted with this application were prepared by or under the supervision of Harvey W. Merrell, a Certified Professional Geologist, CPGS, 4488 by the American Institute of Professional Geologists who certifies to the correctness thereof.



Harvey W. Merrell
CPGS 4488

CERTIFICATION

STATE OF UTAH)
) ss.
County of Carbon)

I, Evan E. Hansen, do hereby certify that I am a Registered Land Surveyor and Professional Engineer holding certificates No. 3315 and No. 3354 as prescribed under the laws of the State of Utah, I further certify that I have reviewed the permit application, drawings and maps submitted by New Tech Mining for the Black Jack #1 Mine for a mining permit and that the material, calculations and information contained in the application is complete and correct to the best of my knowledge.

Evan E. Hansen

Evan E. Hansen P.E.

CERTIFICATION

STATE OF UTAH)
) ss.
County of Grand)

I, Richard O. Cozzens, a registered Professional Engineer of the State of Utah, having reviewed the Ventilation System and Methane and Dust Control Plan, and Roof Control Plan for the New-Tech Mining Corporation's Black Jack #1, located in Thompson Canyon, north of Thompson, Utah, hereby certify that the material and information contained in the written application for a mining permit is complete and correct to the best of my knowledge, information, and belief.

Richard O. Cozzens
Richard O. Cozzens, P. E.
(Professional Engineer #2648)

RECEIVED
FEB 07 1986

DIVISION OF
OIL, GAS & MINING

CHAPTER II

LEGAL, FINANCIAL INFORMATION

UMC 771.1, UMC 782.12- .21
UMC 800.11- .12

Prepared For
NEW TECH MINING CORPORATION
MOAB, UTAH

Revised
September 1985
By
EMPIRE ENGINEERING & LAND SURVEYING
86 North 200 East
Price, Utah
84501

REVISION STATUS Chapter II

Nearly every page of the original text has had a revision. Therefore, it is very difficult to preserve the original page numbers. None of the pages in this chapter will be marked revised and dated.

A heading sheet will be prepared and will carry a revision date for the entire chapter. The heading will not have a page number.

The entire exhibit 2-1 will still be included as previously submitted. A new Certificate of Insurance and two letters: Dated January 21, 1985 and September 5, 1985 has been added to exhibit 2-1 as indicated on the index for appendix Chapter II.

CHAPTER II LEGAL, FINANCIAL INFORMATION
PARTS UMC 771, 782 AND 800
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APPENDIX 2

CHAPTER II

UMC 771.1 SCOPE

New Tech MINING CORPORATION is applying for an underground coal mining permit on an existing non-operating mine. The mine will be renamed the Black Jack #1 and is located on private fee land. New Tech Mining owns the mineral rights on the property.

This application for a mining permit is submitted to the State of Utah, Department of Natural Resources, Division of Oil, Gas and Mining, in accordance with the Utah Coal Mining and Reclamation Act, Title 40, Chapter 10, U.C.A., 1953 (as amended); the applicable rules and regulations adopted thereunder (Part UMC 771.1, et. seq.); the Surface Mining Control and Reclamation Act of 1977 (P.L. 95-87), and applicable regulations adopted thereunder (30 CFR & 770, et. seq.), the Cooperative Agreement between the State of Utah and the United States Secretary of the Interior, and other applicable laws and regulations. The property encompasses 160 acres of private land located in the NE1/4, Sec., 29, T20S, R20E, SLM, Grand County, Utah.

UMC 782.13 IDENTIFICATION OF INTERESTS

The permit applicant is:

New Tech Mining Corporation
17280 Newhope Street
Suite #1
Fountain Valley, CA 92708

The Agent for service of process is:

Bernard C. LaFevre, Jr., Manager
New Tech Mining Corporation
59 1/2 South Main Street
Moab, Utah 84532

The applicant is a corporation in good standing in the State of Utah. The names and addresses of the officers and directors are shown below:

Fred R. Hernandez, President and Treasurer
25401 Cabot Road, Suite 216
Laguna Hills, CA 92653
(714) 966-0190

Carolyn Hernandez, Secretary
25401 Cabot Road, Suite 216
Laguna Hills, CA 92653
(714) 966-0190

The above-named individuals are the directors of New Tech Mining Corporation and are also the principal shareholders.

UMC 783.13(b)(3)

There are no partners or principle share holders in New Tech Mining Corp. that have operated or been engaged in underground or surface coal mining operations in the United States within the preceeding 5 years.

UMC 783.13(d)

The New Tech Mining Corp. has not had a coal mining permit subsequent to 1970, except for this permit aplication.

UMC 783.13(g)

There are no lands contiguous to the permit area that are available, at present, in which mining could be extended.

UMC 782.13(f) MSHA IDENTIFICATION NUMBER

42-01172

UMC 782.14 COMPLIANCE INFORMATION

New Tech Mining Corporation or any affiliates has had:

1. No Federal or State mining permits suspended or revoked;
2. Forfeited any mining bonds or other securities in lieu of bonds.

New Tech Mining Corporation has had eight (8) violation notices received in connection with coal mining activity in the past three years. The listing of these violation notices gives date, by whom, reason (or violation), action and fine levied.

1. Cessation Order # C83-5-2-1, April 19, 1983, Utah DOGM, conducting coal exploration without a permit.

Action: Stopped exploring lower coal seam. \$680.00 fine outstanding.

2. Notice of Violation N83-2-8-1, July 29, 1983, Utah DOGM, failure to contemporaneously reclaim land disturbed during exploration or mining operation.

Action: None \$520.00 fine outstanding

3. Cessation Order C83-2-1-1 October 7, 1983, Utah DOGM failure to contemporaneously reclaim land disturbed during exploration and/or mining operation.

Action: None paid \$1500.00 fine

4. Notice of Violation N84-2-7-1 May 7, 1984, Utah DOGM, failure to conduct coal exploration in accordance with approved exploration plans. Natural channel drainages altered by road reconstruction without prior DOGM approval.

Action: paid \$90.00 fine

5. Notice of Violation 84-2-15-1 July 31, 1984, Utah DOGM, failure to comply with the approved exploration plan. Surface water monitoring plan.

Action: None until May 1985 when water monitoring was continued

6. Cessation Order C84-B-1-1 September 24, 1984, Utah DOGM failure to conduct coal exploration in accordance with requirements of the ACT UMC 815, the regulatory program and any condition on approval for exploration and reclamation imposed by the Division. Road Bladed on bench extending beyond approved exploration area located above the explosives magazine area.

Action: The disturbed area of road was "water barred" and closed to any vehicular traffic. \$1080.00 fine outstanding

7. Notice of Violation 85-8-7-2 May 1, 1985, Utah DOGM, failure to conduct surface water monitoring in accordance with the monitoring program approved by the Division.

Action: Started monitoring in late May - Reported actions to

Division with statement that lab result, will be sent to Division as soon as analyzed. Violation Dropped by DOGM

8. As above Failure to protect by barricade and post with signs to prevent access to temporarily inactive mine openings.

Action: Worker at mine site every day during the normal work week. Steel gate blocking road is locked at all other times.

Violation terminated with this action. The mine is not temporarily inactive.

UMC 782.15 RIGHT OF ENTRY AND OPERATION INFORMATION

Mineral Owners: New Tech Mining

- A) Copy of court order back to Lile's
- B) Copy of recorded Warranty Deed

Surface Owner of land within permit area:

Patsantaras Land and Livestock Company
3112 A 1/2 Road
Grand Junction, Colorado 81501

Owners of Surface Lands Contiguous to Permit Area
(782.13(e))

United States of America
Department of the Interior
Bureau of Land Management
324 South State Street
Salt Lake City, Utah 84111

DEED

J. Reed Lance and Zina C. Lance, husband and wife, of Moab, Utah, Grantors, hereby grant, bargain, sell, convey, transfer and assign to Glenn Lile, H. D. Lile and W. E. Lile, Grantees, of Moab, Utah, in consideration of the sum of one hundred dollars, and other good and valuable considerations, all of their interest in and to all of the coal, gas, oil and other minerals of whatsoever kind or nature in, upon or beneath the following described lands in Grand county, Utah, to wit:

The Northeast quarter of Section 29, Township 20 South, Range 20 East, S. L. M., containing 160 acres, more or less.

Together with the right of ingress and egress at all times upon and beneath and across said land as provided for in that certain warranty deed dated April 9, 1949, executed by the Grantors herein to Nick Patsantaras, as Grantee, wherein the surface rights to said lands were conveyed to said Nick Patsantaras, and the mineral rights reserved by Grantors, together with the right of ingress and egress upon and across said lands.

Together also with the following described mine equipment located on said property:

- 1 50 H. P. Buda Motor
- 1 250 Volt Generator
- 1 Electric Hoist
- 1 Battery charger
- Approximately 1000 feet of copper wire
- Approximately 1000 feet of 30 lb track
- 1 shortwall Goodman cutting machine
- 1 2 H. P. Motor
- 1 coal chute
- 3 coal cars
- 1 conveyor

All misc. tools and equipment.

Said property is subject to taxes for the years 1948, 1949 and 1950, which grantees by the acceptance of this deed agree and assume to pay.

Grantors by this deed intend to and do convey to grantees whatever interest they may have in the above property not herein specifically mentioned.

Witness the hands of said grantors this 30th day of November, 1950.

J. Reed Lance
Zina C. Lance

State of Utah,)
) ss
County of Grand.)

On the 30th day of November, 1950, personally appeared before me J. Reed Lance and Zina C. Lance, the signers of the above instrument, who duly acknowledged to me that they executed the same.

W. H. [Signature]
Notary Public, residing at
[Address], Utah.

My commission expires 12-31-50.

EXHIBIT 2-1

2-6A

WARRANTY DEED

H. D. LILE and LUCILLE LILE, Husband and Wife, and GLENN
E. LILE and BEATRICE RUTH LILE, Husband and Wife, grantors of
City of Moab, County of Grand, State of Utah, hereby CONVEY and
New-Tech Mining Company
WARRANT to ~~SAN-LUIS-MINING-COMPANY~~, grantee of City of Albuquerque,
County of Bernalillo, State of New Mexico for the sum of Ten Dollars,
(\$10.00) and other good and valuable consideration. The following
described tract of land in Grand County, State of Utah, to-wit:

The coal, oil, and gas and all other minerals
in the Northeast Quarter of Section 29, T20S, R20E,
SLP&M; together with the ownership, and occupancy
of so much of the surface of said land as may be
necessary or convenient for the use and enjoyment
of said mineral estate, including, but not limited
to, the following surface rights: ground for dumps,
rights of way for the erection and maintenance
of tramways and roads, and for right to remove
from the surface of said property such timber as
may be necessary for the use in mining operations.

WITNESS the hand of said grantors, this _____ day of February,
1983.

H. D. Lile

H. D. Lile

Lucille Lile

Lucille Lile
LML

Glenn E. Lile

Glenn E. Lile

Beatrice Ruth Lile

Beatrice Ruth Lile

State of Utah)
 : ss
County of Grand)

On the _____ day of February, 1983 personally appeared
before me H. D. LILE and LUCILLE LILE, Husband and Wife, the
signers of the above instrument, who duly acknowledged to me
that they executed the same.

My Commission Expires:

Notary Public
Residing in: Moab, Utah

... the collection of all ...

... the right to increase ...

... the right to ...

... the following address ...

... All funds collected shall be divided as per division order hereinafter provided.

... the amount of the ...

... See Exhibit "A" attached hereto.

... certified or registered mail ...

... the expense of the party ...

... without the written consent ...

... in its sole discretion ...

... shall be construed as plural ...

... the requirements of the Truth-in Lending ...

... I have read the foregoing agreement ...

New-Tech Mining Corporation
Sanyo Lumber Company
BY: [Signature] PRC 2-24-1983
Name: [Signature] date: 2-24-1983
Address: [Signature] social sec. no.
Name: [Signature] date:
Address: [Signature] social sec. no.
Name: [Signature] date:
Address: [Signature] social sec. no.
STATE OF Utah
COUNTY OF Grand

GRANTORS
Name: H. D. Life date: 2-24-83
Address: 541 Rosetree Lane, Moab, UT 522-16437
Name: Lucille Life date: 2-24-83
Address: 541 Rosetree Lane, Moab, UT
Name: Glenn E. Life date:
Address: 301 Freeman Rd. Central Pt. OR
Name: Beatrice Ruth Life date: 2-18-1983
Address: 301 Freeman Rd. Central Pt., 2-18-1983
Address OR social sec.
H. D. Life and Lucille Life, Husband & Wife

On the 24 day of February 83

Notary Public
Residing at Moab, Utah 84532

7-11-1983

We have receipt of Contract of Sale but the Warranty Deed has not yet been delivered.

FIRST SECURITY Bank of Utah, N.A.
[Signature]

I, the undersigned Clerk of the Seventh Judicial Court
in and for Grand County, State of Utah, do hereby certify
that the annexed and foregoing is a true, full and correct
copy of an original document on file in my office as such
Clerk.

WITNESS my hand and the seal of said Court this 24th

day of MARCH 1981

[Signature]
Clerk
County

L. Robert Anderson
Attorney for Plaintiffs
P. O. Box 275
Monticello, Utah 84535
Telephone No. (801) 587-2222

IN THE SEVENTH JUDICIAL DISTRICT COURT
OF GRAND COUNTY, STATE OF UTAH

H. D. LILE and LUCILE M. LILE :
husband and wife, and GLENN :
E. LILE and BEATRICE RUTH :
LILE, husband and wife, :
:
Plaintiffs, :
:

vs. :

DECREE

Civil No. 4451

EAGLE MINE SUPPLY COMPANY,
a Utah corporation; EXECUTIVE :
COAL CORPORATION, an Oklahoma
corporation; FIRST DOE; SECOND :
DOE; THIRD DOE; FOURTH DOE ;
FIFTH DOE; SIXTH DOE; SEVENTH :
DOE; EIGHTH DOE; NINTH DOE ;
TENTH DOE; also all other :
persons unknown, claiming any
right, title, estate or in- :
terest in, or lien upon, the :
real property described in :
Complaint of Plaintiffs :
adverse to Plaintiffs' owner- :
ship or clouding Plaintiffs' :
title thereto, :

Defendants. :

390854

Entry No. _____
Recorded 3-24-81 1:45 P.M.
Bk. 321 Pg. 136-138 Fee 6.50

Lilly Mae Noorlander

[Signature]
Recorder of Grand County *MSD*

This matter came on regularly for hearing before the
above Court, the Honorable Boyd Bunnell presiding and sitting
without a jury in chambers for Grand County, in the Court-
house at Monticello, Utah, on the 23rd day of March, 1981.
It appears to the Court as follows:

1. Defendants Eagle Mine Supply Company ("EAGLE") was
July and regularly served with Summons in the manner and
form provided by law and has filed a Disclaimer herein.
2. Defendants Executive Coal Corporation (EXECUTIVE"),
First Doe; Second Doe; Third Doe; Fourth Doe; Fifth Doe;
Sixth Doe; Seventh Doe; Eighth Doe; Ninth Doe; Tenth Doe;
also all other persons unknown, claiming any right, title,
estate or interest in, or lien upon, the real property
described in Complaint of Plaintiff adverse to Plaintiff

ownership or clouding plaintiffs' title thereto ("UNKNOWN DEFENDANTS"), have been duly and regularly served with Summons by publication and have failed to answer or otherwise plead to the Complaint of the Plaintiffs.

3. Based upon the foregoing, the default in the premises of EXECUTIVE and UNKNOWN DEFENDANTS was ordered entered.

4. L. Robert Anderson appeared as counsel for plaintiff and the defendants did not appear either in person or by counsel except through the disclaimer described in paragraph 1 above. The Court heard the evidence produced by plaintiff and finds that all of the material allegations of plaintiffs' Complaint are true and sustained by the evidence.

NOW THEREFORE, it is hereby ordered, adjudged and decreed as follows:

1. Plaintiffs are the true and lawful owners of all of the coal, gas, oil and other minerals in and under the following described tract of land ("PROPERTY") situated in Grand County, State of Utah, to-wit:

Township 20 South, Range 20 East, SLM.

Section 29: NE $\frac{1}{4}$

TOGETHER with the right to the use and occupancy of so much of the surface of the above described land as may be necessary or convenient for the use and enjoyment of said mineral estate, including, but not limited to, the following surface rights: ground for dumps, rights of way for the erection and maintenance of tramways and roads, and the right to remove from surface of said property such timber as may be necessary for use in mining operations.

2. That the Contract of Sale ("CONTRACT") covering PROPERTY which was recorded in the Recorder's Office of Grand County, State of Utah ("RECORDER'S OFFICE"), on March 12, 1980, in Book 305 at Pages 226-241 and the Escrow Agreement ("ESCROW AGREEMENT") with the Moab Office, First Security Bank of Utah, N.A., ("BANK") dated February _____, 1980, are terminated and plaintiffs are hereby released from all

obligation in law and in equity to convey the above described property to any of the defendants under CONTRACT and ESCROW AGREEMENT, that all payments which have been made on CONTRACT and ESCROW AGREEMENT have been forfeited to plaintiffs as liquidated damages for the nonperformance of the same by EAGLE and EXECUTIVE, and that plaintiffs are the owners of PROPERTY free and clear of all claims of defendants and are entitled to the exclusive possession of PROPERTY and a return of the documents held by BANK under ESCROW AGREEMENT.

3. Defendants EAGLE and EXECUTIVE have no right or interest in the above described property under any of the following instruments recorded in RECORDER'S OFFICE:

a. Option Agreement recorded on February 22, 1980, in Book 304 at pages 470-474 and in Book 304 at pages 475-479.

b. Quitclaim Deed recorded on March 12, 1980, in Book 305 at page 242.

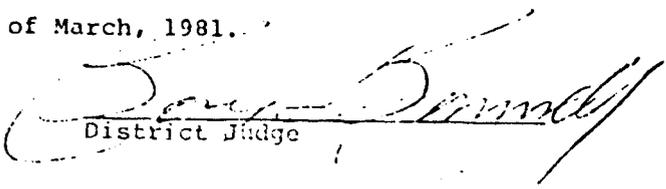
c. Notice recorded on May 21, 1980, in Book 307 at page 475.

d. CONTRACT described in paragraph 2 above.

4. Plaintiffs' title to the above described property is quieted against all of the claims and demands of all defendants, and each of them, all of which claims of said defendants are invalid and groundless.

5. Defendants, and each of them are hereby perpetually enjoined from setting up any claim to the above described property, on any part thereof, adverse to plaintiffs.

DATED this 23rd day of March, 1981.


District Judge

C E R T I F I C A T E

STATE OF UTAH)
 :
COUNTY OF GRAND)

Order No. 8561

THE SOUTH EASTERN UTAH TITLE COMPANY, a Licensed Abstractor of Titles within and for the foregoing County, State of Utah, hereby certifies that the foregoing abstract consisting of: One hundred forty six pages numbered 1 through 146 is a true and correct abstract of the following since inception:

1. All instruments that appear of record in the Office of the County Recorder of said County and State referring to the land described in the last caption sheet of this abstract.

2. All subsisting judgment filed or entered in the office of the Clerk of the Seventh Judicial District Court within and for said County, State of Utah, and all Federal Tax Liens filed in the County Recorder's Office entered within the past 8 years against any of the following:

H. D. Lile	Executive Coal Corporation
Lucille M. Lile	Patsantaras Land and Livestock Corp.
Glen E. Lile	Pete P. Clathis
Beatrice Ruth Lile	Dixie K. Clathis
Eagle Mine Supply	

3. All unredeemed tax sales that appear of record in the Office of the Treasurer of said County.

This Certificate does not include: (1) Taxes on personal property not listed with the said land on the assessment rolls; (2) Mining claims not indexed in the regular tract index; and (3) Chattel Mortgages.

IN WITNESS WHEREOF, This Certificate has been executed this 15 day of April, 19 81, at 8 o'clock A..M.

SOUTH EASTERN UTAH TITLE COMPANY
Licensed Abstractor

By *Pogo Holland*

~~XXXXXXXX~~
Pogo Holland

Owners of Surface Lands Contiguous to Permit Area
(782.13(e))

Patsantaras Land and Livestock Company
3112 A 1/2 Road
Grand Junction, Colorado 81501

Owners of Mineral Rights Contiguous to Permit Area

United States of America
Department of the Interior
Bureau of Land Management
324 South State Street
Salt Lake City, Utah 84138

New Tech Mining owns the mineral rights to the NE1/4 Section 29, T20S, R20E, SLM and has the rights to access and timber as needed for mining operations as set forth in the deed that separated the surface rights from the mineral rights as indicated in Exhibit 2-1 (page 2-6A). This warranty deed dated April 9, 1949 from Reed Lance to Nick Patsantaras, reserves all mineral and oil rights "together with rights of entry and rights of way for the purpose of prospecting, searching, exploring, mining, and the right of free access between wells, mines..."

FOR SURFACE RIGHTS ONLY !

Reed Lance Deed of Oil, Gas, and Mineral to H.D. Lile and W.E. Lile dated 30th November 1950. Mineral Rights HD & WF Lile to New Tech Mining Corp. warranty, deed of Mineral Rights dated February 1983.

UMC 782.16 RELATIONSHIP TO AREAS DESIGNATED UNSUITABLE FOR MINING

In consultation with concerned federal land agencies and the Division of Oil, Gas and mining, no lands within or adjacent to the permit area have been identified as areas unsuitable for mining.

References:

Mr. Colan P. Christensen
Bureau of Land Management
Moab, Utah 84532

Mr. Cy Young
Division of Oil, Gas and Mining
Salt Lake City, Utah

No facilities or operations will be conducted within 300 feet of an occupied dwelling.

UMC 782.17 PERMIT TERM (also 786.25)

This application for a mining permit is for a five-year term.

The anticipated starting date for commencing mine operation is January 1, 1986, with 100,000 tons anticipated to be mined in the Ballard or "B" seam during the year. Mining in each of the following years, as shown in different colors, is at a rate of 100,000 tons per year. Refer to Plate 3-11, for the "B" seam production plan by years and shown in color. About May 10, 1988, the "B" seam will be mined out as planned. Production is from entries and crosscuts only. There will be No Pillars mined.

Prior to the completion of mining in the B Seam, some time in the early part of March 1988, portals into the Chesterfield or "C" Seam will have to be driven and such other work necessary to pick up the production decline in the B Seam. Production in the C Seam will continue at 100,000 tons per year, as shown in color. Refer to Plate 3-12, for C Seam Production Plan by years.

The date of completion for mining under this permit is December 31, 1990. At this date 83% of the coal available with advance mining is mined out leaving 17% more to be mined before pillar recovery could begin. During mining under this permit the coal market will be considered because of the affect it will have on mining.

New Tech Mining Corp. has applied for this coal mining permit to cover mining in all three (3) seams, during the 5 year, permit if necessary to satisfy the Coal market demand. Production is based upon 100,000 tons per year. However, the coal market is a fluctuating market. Should the market for coal increase the mine intends to change the daily and yearly production output to match the demand. Should this accomplish the mining of the B and C seams before the permit expires. It would then become necessary to drive the rock incline entries from the B Seam to the Palisade or "P" Seam to maintain the increased production through the remainder of the mining permit.

The anticipated starting date, as was stated, is January 1, 1986. Should the preparation, the study and the approval of this permit extend beyond this date, the yearly mining plans will have to start with the approval date and end on, or near, that same date for each succeeding year throughout the five year permit which would end on that same date. However, if it should be desired to keep the mining plans according to the calendar years. Then for each working day (Monday through Friday) occurring within the delay period from January 1, 1986, until the approval date, the tonnage reduction would be 452.5 tons per day. The tonnage lost in 1986, would then be mined from January 1st, until the end of permit date in 1991. (See Chapter VI, item 6.1)

The computations used for showing the amount of mining done in each seam for each year, as shown in color on the maps Plates 3-11 and 3-12, are as follows:

General Data:

Coal in place weighs 80 pounds per cubic foot.
This weight amounts to 25 cubic feet removed for each ton of coal mined.
Entries are driven on 75 foot centers and 20 feet wide.
Crosscuts are also on 75 foot centers and 20 feet wide.
Entries and crosscuts are the same in each seam and are superimposed in each seam.
100,000 Tons anticipated minimum mining each year.

Coal Seams Data and Calculations:

Ballard Seam: Coal height is 42 to 48 inches. The average of 45" or 3.75 feet was used.
Volume per foot mined = $20 \times 3.75 \times 1/25 = 3.0$ tons per foot.
Volume per 75 feet of entry = $75 \times 3 = 225$ tons.
Volume per 55 feet of crosscut = $55 \times 3 = 165$ tons

Therefore at 75 feet of entry advance with connecting crosscuts the tonnages used on Plate 3-11, Production Plan B Seam, are as follows:

Two entries and crosscut = 615 tons.
Three entries and two crosscuts = 1005 tons.
Four entries and three crosscuts = 1395 tons.
Five entries and four crosscuts = 1785 tons.
Six entries and five crosscuts = 2175 tons.
Seven entries and six crosscuts = 2565 tons.

Chesterfield Seam: Coal height is 60" or 5.0 feet which was used.

Volume per foot mined = $20 \times 5 \times 1/25 = 4.0$ tons per foot.
Volume per 75 feet of entry = $75 \times 4 = 300$ tons.
Volume per 55 feet of Crosscut = $55 \times 4 = 220$ tons.

At 75 feet of entry advance with connecting crosscuts the tonnages used on Plate 3-12, Production Plan C-Seam, are as follows:

Two entries and crosscut = 820 tons.
Three entries and two crosscuts = 1340 tons.
Four entries and three crosscuts = 1860 tons.
Five entries and four crosscuts = 2380 tons.
Six entries and five crosscuts = 2900 tons.
Seven entries and six crosscuts = 3420 tons.
Eight entries and seven crosscuts = 3940 tons.

Palisade Seam: No mining under the anticipated minimum tonnage per year is planned and no "Production Plan P Seam", map is included. However, should the coal market increase production until mining does occur in the P Seam the following production figures will be used:

Palisade seam height is 48 inches or 4.0 feet.
Volume per foot mined = $20 \times 4 \times 1/25 = 3.2$ tons per foot.
Volume per 75 feet of entry = $75 \times 3.2 = 240$ tons.
Volume per 55 feet of crosscut = $55 \times 3.2 = 176$ tons.

At 75 feet of entry advance with connecting crosscuts the tonnages for the various number of entries are as follows:.

Two entries and crosscut = 656 tons.
Three entries and two crosscuts = 1072 tons.
Four entries and three crosscuts = 1488 tons.
Five entries and four crosscuts = 1904 tons.
Six entries and five crosscuts = 2320 tons.
Seven entries and six crosscuts = 2736 tons.

The drawing "Mine Plan P Seam" plate 3-8A, is included for comparison and reserve purposes.

A declining market could result in the opposite or reverse situation. But it is not planned for this to occur.

UMC 782.18 PERSONAL INJURY AND PROPERTY DAMAGE INSURANCE

The liability insurance coverage required by UMC 806.14 is provided by a policy issued to the applicant New Tech Mining Corporation. The applicant will maintain the full force of insurance coverage for the life of the permit or any renewal thereof.

The insurance coverage, is shown in appendix #1, has no date of coverage. The date of coverage is to begin when the permit is approved and the mine is opened. The anticipated date of effective coverage and start of mining is January 1, 1986. See 782.17 above. The Division will be notified in the event of cancellation of the policy by the insurer. See letter, following insurance policy, dated 9-5-85, from Kelling Insurance Agency, to whom it may concern; RE: Liability coverage and approval of permit.

UMC 782.19 OTHER LICENSES AND PERMITS

NAME AND ADDRESS OF ISSUING AUTHORITY	LICENSE OR PERMIT	I. D. NUMBER AND DATE OF ISSUE
BLM	Rights of way, power	N.A.
Utah Div. of Health	Construction permit for sed. pond	Bob Adamson
Grand County	County Road Use	May 24, 1983
Grand County	County Road Use	Sept. 2, 1985
Grand County	Business License	May 19, 1985
Grand County	Install concrete sump	Aug. 27, 1985
State of Utah	Corporation	April 26, 1983
State of Utah, D. of H.	Intent to Approve- Coal Mine	Aug. 28, 1984
State of Utah, D Of H.	Approval Order- Air Pollution	Oct. 15, 1985
MSHA - Denver, Colo. Health	Ventilation system etc. Plan	Nov. 9, 1983
MSHA - Denver, Colo.	Roof Control Plan	March 20, 1985
EPA - Region VIII - Denver, Colorado NPDES Application Pending		

UMC 782.19(c) APPLICATIONS FOR OTHER PERMITS OR LICENSES

Are as follows:

1. MSHA, Denver, Colorado Waiver of Bath House Facility
CFR30-75.1712-4 & -5.

This application for waiver of a Bath House Facility at the mine, is to locate change room and bathing facilities in the town of Thompson, as per Chapter 3, UMC 784.12, item 1.7 Sewage System. pg. 3-23.

2. MSHA, Denver, Colorado Reopening of deactivated coal mine
CFR30-75.1721

A notification to MSHA, of the reactivation of an existing coal mine, with the approximate date of actual opening, with preliminary plans, some of which have been submitted, to be submitted thereafter, and prior to opening, as follows:

(b) Preliminary Plans:

- (1) The name and location of the proposed mine and the MSHA, I.D. number 42-01172;
 - (2) The name and address of the mine operator(s);
 - (3) The name and address of the official in charge of health and safety;
 - (4) The identification and height of coal bed(s) to be developed;
 - (5) The system of mining to be employed;
 - (6) A proposed roof control plan, as per 75.200-5, (enclosed appendix 3);
 - (7) A proposed ventilation, methane and dust control plan, as per 75.317-18-2, (enclosed appendix 3);
 - (8) A proposed plan for sealing abandoned areas, as per 75.330-1;
 - (9) A proposed program for searching miners for smoking materials, as per 75.1702;
 - (10) A proposed plan for emergency medical assistance and emergency communication, as per 75.1713-1 & -2;
- (c) Training Plans Submitted to Training Center Chief:
- (1) A proposed Training Plan as per 48.3 and 48.23
 - (2) A proposed plan for training and retraining certified and qualified persons, as per 75.160-1.

3. NPEDES Permit

This permit would be for discharging the effluent from two, or more, sedimentation ponds into (a) the ephemeral drainage through the permit area and (b) Thompson Creek drainage. (permit application copy in chapter VII-B, UMC 817.52(b)(1)(a)).

UMC 782.20 LOCATION OF PUBLIC OFFICE FOR FILING OF APPLICATION

This application will be submitted to the Division of Oil, Gas and Mining and the applicant will simultaneously file a copy of the application for public inspection at the office of the:

Grand County Clerk
Grand County Courthouse
125 East Center
Moab, Utah 84532

UMC 782.21 NEWSPAPER ADVERTISEMENT (also 786.11(a))

At the back of this chapter is a copy of the newspaper advertisement which will be published in a local paper of general circulation in the vicinity of the permit area at least once a week for four consecutive weeks. The applicant will place the advertisement in the paper the same time the permit application is filed with the Division. Proof of publication will be filed with the Division within four weeks after the date of publication. The proof of 1983, publication is at the back of this chapter in Appendix 2.

UMC 800.11 PERFORMANCE BOND (also 805,806)

New Tech Mining Corporation has a cash bond Account # F2-3024-006 on deposit with the Utah Division of Oil, Gas & Mining in the amount of \$28,442.11 as of 6/11/85.

The Estimated costs by DOGM letter dated 11/3/83 from James W. Smith Jr. to New Tech Mining Corp was for Revised Bond Estimate of \$28,479.00 (this figure also included a 10% contingency of \$2,589.00)

The latest up to date calculations on the rehabilitation and reseedling of the disturbed area is shown in Chapter 3 and shows that the cash bond on deposit with the DOGM is sufficient to cover the estimated reclamation costs of the total disturbed area of the mine project.

UMC 800.12 Certificate of Liability Insurance (805.14 & 806.14)

A copy of the Certificate of Liability Insurance which cover the minimum required coverage; the duration of the Insurance, notification of DOGM of any policy cancellation.

APPENDIX 2

Chapter II

CONTENTS

EXHIBIT 2-1, as follows:

page

2-6	Warranty Deed	9th day of April, 1949	#205205
2-7	County Deed	9th day of June, A.D. 1952	#209982
2-8	Deed	30th day of November, 1950	#216224
2-9	County Deed	9th day of June, A.D. 1952	#216223
2-10	Deed	30th day of November, 1950	#216224
2-11	Warranty Deed	February, 1983	
2-12		24th day of February, 1983	
2-13	Certificate	Decree-Civil No 4451 pg. 1	#390854
2-14		Decree-Civil No. 4451 pg. 2	
2-15		Decree-Civil No. 4451 pg. 3	
2-16	Certificate	15th day of April, 1981 Order No. 8561	
New	Certificate of Insurance 6-19-85 Package Policy Kelling Insurance Agency		
New	Letter 9-5-85 Kelling Insurance Agency		
Proof of Publication			
New	Letter January 21, 1985, The Times-Independent Certification of Publication		
Business License No. 2728			
Certificate of Authority - State of Utah			
26 April 1983			

KELLING INSURANCE AGENCY
 Business and Personal Insurance Planning
 BOX 1266, 88 EAST CENTER
 MOAB, UTAH 84532
 259-6192

NEW TECH MINING CORP.
 59 1/2 SOUTH MAIN
 MOAB, UTAH 84532

CONTAINED AFFORDING COVERAGES

- A ROYAL INSURANCE COMPANY
- B ROYAL INSURANCE COMPANY

GENERAL LIABILITY

A X NO NUMBER ASSIGNED

TO BE
 DETERMINED
 BY FINAL
 PERMITTING

500 500

ACCESS LIABILITY

B X NO NUMBER ASSIGNED

EMPLOYERS' COMPENSATION
 and
 EMPLOYERS' OTHER

1,000, 1,000,

SUBJECT TO PACKAGE POLICY TO BE ISSUED IN ACCORDANCE WITH INFORMATION BEING
 SUBMITTED TO ROYAL INSURANCE. MINE LOCATION: BLACKJACK #1 MINE, 5 1/2 MILES
 NORTH OF THOMPSON, UTAH

Cancellation: Should the insured cancel this policy, the cancellation date thereof, the name of the insured, the policy number, the certificate number, and the amount of premium upon the company.

30

6-19-85

STATE OF UTAH
 DIVISION OF OIL, GAS & MINING
 STATE OFFICE BUILDING
 SALT LAKE CITY, UTAH

Mitch Kelling

KELLING INSURANCE AGENCY

Business and Personal Insurance Planning

P. O. Box 1266

64 S. Main, Moab, Utah 84532

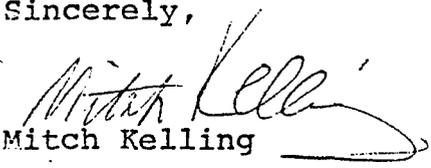
9-5-85

STATE OF UTAH
DIVISION OF OIL, GAS & MINING
STATE OFFICE BUILDING
SALT LAKE CITY, UTAH

To Whom It May Concern;

This letter is inform you that New Tech Mining Corp. has arranged to purchase insurance through Alexander & Alexander in Kansas City for a coal mine located 5 1/2 miles north of Thompson, Utah. This mine is referred to as Black Jack #1. The policy contains liability, products & completed operations, & underground coverage. This policy has not been finalized yet as the company is waiting to write the policy, make it effective till when the state of Utah decides to issue their permit to mine. As soon as they are given notice that they can mine we will put the insurance into effect. In the event this policy ever cancels or lapses for any reason the state of Utah will receive 30 written notice prior to the cancellation. If you should need any further information regarding this matter please don't hesitate to contact me directly.

Sincerely,


Mitch Kelling

MITCH KELLING
P.O. BOX 1266
MOAB, UTAH 84532

(801) 259-6192 (days)
(801) 259-8020 (nights)

**KELLING INSURANCE
AGENCY**

BUSSES
COMMERCIAL
AIRCRAFT
AUTO


OUTFITTERS
WHITEWATER

GENL. LIABILITY
FIRE
LIFE
HEALTH

January 21, 1985

The Times-Independent
P.O. Box 129
Moab, Utah

NOTICE: New-Tech Mining Corporation, 59½ South Main, Moab, Utah 84532, hereby announces its intent to file an application for an Underground Coal Mining Permit for the Black Jack No. 1 Mine with the Division of Oil, Gas and Mining under the laws of the state of Utah and the office of Surface Mining.

A copy of the complete application is available for public inspection at the Grand County Clerk's Office in the Grand County Courthouse, Moab, Utah 84532

Written comments on the application should be submitted to the State of Utah, Division of Oil, Gas and Mining, 4241 State Office Building, Salt Lake City, Utah 84114.

The area to be mined is covered on the U.S.G.S. 15 minute Topographic Quadrangle map of Thompson, Utah.

There are 160 acres of fee land involved in this permit.

NE¼, Section 29, Township 20 South, Range 20 East, SLM.

Mineral rights purchased from: H.P. and Lucille Lyle; Glenn E. and Beatrice Lyle, February, 1983.

Published in The Times-Independent, Moab, Utah, July 14, 21, 28, and Aug. 4, 1983.

I Samuel J. Taylor, do hereby certify that this is a true and correct copy published in the The Times-Independent on July 14, 21, 28, and Aug. 4, 1983.


Samuel J. Taylor

Subscribed & sworn before me
this 21st day of January, 1985.

William F. Taylor
Notary Public

My Commission expires Nov. 5, 1985.

RECEIVED
FEB 07 1986

DIVISION OF
OIL, GAS & MINING

CHAPTER III

OPERATION PLAN

UMC 784.11- .12

Prepared For
NEW TECH MINING CORPORATION
MOAB, UTAH

Revised and Rewritten

September 1985

By

EMPIRE ENGINEERING & LAND SURVEYING

86 North 200 East
Price, Utah
84501

CHAPTER III

OPERATION & PLAN
UMC 784.11-.12

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For Chapters III and III-A

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1. Letter August 26, 1983, Coal Mine Safety and Health District 9. Re: Black Jack #1 Mine, I.D. No. 42-01172 Ventilation System and Methane and Dust Control.

November 9, 1983, Coal Mine Safety and Health District 9. Re: Black Jack #1 Mine, I.D. No. 42-01172 Ventilation System and Methane and Dust Control

With Attachment of letter - September 30, 1983, and copy of revised Ventilation and Methane and Dust Control Plan.
2. Letter March 20, 1985 Coal Mine Safety and Health District 9 Re: Black Jack #1 Mine, I. D. No. 42-01172 Roof Control Plan

June 3, 1983, Coal Mine Safety and Health District 9. Re: Roof Control Plan, Black Jack #1 Mine, I. D. No. 42-01172.

With Attachment of Roof Control Plan
3. Letter June 13, 1983, Thompson Water Improvement District, giving permission to use water.
4. Letter August 27, 1985, Grand County Granting permission to install sump in county right-of-way.
5. Letter September 28, 1985, THOMPSON MOTEL Thompson, Utah. Permission to locate Shower Type Trailor into a trailor park.
6. Letter September 30, 1985, Grand County. Permission to use Grand County Sanitary Land Fill at Moab, Utah.
7. Letters (3 each) JBCO CONSTRUCTION Schedule of Equipment & Labor Rates
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CHAPTER III

OPERATION PLAN UMC 784.11-.12

UMC 784.11 OPERATION PLAN: General Requirements

The operation plan of the New Tech Mining Corporation consists of reopening a deactivated coal mine in the 160 acre permit area in Thompson Canyon. Four coal seams exist within the permit area. These seams are (1) the Carbonera Coal Seam, (2) the Chesterfield or "C" Seam, (3) the Ballard or "B" Seam and the Palisade or "P" Seam. The permit is for five (5) years with a minimum of 100,000 tons per year to be mined. Mining will commence in the reactivation and utilization of an existing mine in the B Seam, to be known as the Black Jack #1 Mine.

UMC 784.11(a) MINING PLAN

The Black Jack #1 Mine Mining Plan is based on geologic information and the presence of existing mines on the property. Good knowledge of the entire property is available from evaluation and analysis of the outcrop and underground workings of the previous mine operations in the area.

The mining areas are bounded by natural and imposed limits:

property boundaries - provide definitely located limits.
Erosion of coal seams or outcrop provide definite located limits.

Fault locations - there are no known faults that will prohibit mining in property boundary.

1.1 Orientation and Multiple Seam Considerations (783.25(c))

There are four seams of recoverable coal located on the property. They range from 42" to 60" thick. They are, top to bottom, Carbonera - 60", Chesterfield - 60", Ballard - 42" to 48", Palisade - 48".

The Carbonera seam outcrops close to the property line at 110 feet higher than the next lower seam and may not have enough reserve on the property to be economically feasible to mine. The Chesterfield, Ballard and Palisade seams represent 2.0 million tons of mineral reserves with 60% to 70% recovery. (see Table 6.2, Chapter VI) Mining limits in the mine are the 42" to 60" height of coal seams. All mining equipment is designed to operate within these limits. The interburden between the seams ranges from 20' to 48' of massive sandstone and shale.

Since the seams are overlaid, superimposed mining of entries and crosscuts has been undertaken to ensure that mining in the three seams will protect the integrity of the interburden between the coal seams. This superimposed mining is an industry accepted mining practice where multiple seams exist. However, it requires precise engineering control to be successful. A good coordinate survey control, which is in effect, is required to assure the success of multiple seam mining.

Mining will commence in the Ballard Seam, which is the center seam of the lower three seams. Since there is no retreat mining planned in this seam the massive sandstone roof should adequately protect the upper seam, prior to the completion of mining in the B Seam, in early 1988, portals will be opened in the C Seam directly above the portals in the B Seam. Mining will then continue in the C Seam until the end of the permit or mining is completed. Should the demand for coal increase production sufficiently to require mining in the P Seam, access to this seam will be by inclined rock tunnel slopes from the B Seam as shown on Plates 3-6A and 3-8A.

Requirements by mining authorities (MSHA, DOGM, or both) to mine pillars for a greater percent of recovery will exclude any mining of the P Seam during this permit. Pillar recovery would have to begin in the C Seam first. The B Seam pillars would be recovered second with pillars left to protect the inclined rock slopes to the P Seam. The P Seam which would not likely be mined under this permit, would require the mining plan to include the pillar recovery.

1.2 Portals, Shafts and Slopes

Black Jack #1 Mine is a slope mine. Three (3) of the portals are in place from previous mining in the B Seam. Two (2) more portals will be opened by mining from inside the mine to outside to establish ventilation and haulage systems.

Mining in the C Seam will also be by portals which will be driven from the exposed outcrop. The portals and entries in the C Seam will be superimposed over the portals and entries in the B Seam. See plate 3-7A. Cribbing in the large opening of previous mining will be required.

Should mining occur in the P Seam during this permit, No portals will be opened. Access will be from inclined rock tunnel slopes from the B Seam. Slopes will be about 5.2 percent. No vertical shafts are planned for the mine.

1.3 Mining Methods, Room and Pillar

The mining plan consists of rooms and pillars for all three seams. See Plates 3-6A, 3-7A and 3-8A. However, coal production will consist of coal mined in entries and crosscuts only. No pillars are to be mined in any seams unless regulatory authorities require otherwise. Should pillar recovery be required, no pillars will be mined in the B Seam until after mining, including pillar recovery, is completed in the C or upper seam. Pillars need to be left in the B Seam to support the mine roof until mining the C Seam is completed. Refer to Chapter XII, Subsidence, for a more complete discussion of pillar recovery mining. Refer to Chapter XII, SUBSIDENCE, for a more complete discussion of pillar recovery mining.

1.4 Projected Mine Development, Mains, Submains Panels, Etc.

The mine layout, as shown on Plates 3-6A, and 37A, consists of a 5 entry system from the portals, north to the north property line barrier, east to the outcrop barrier, west to the west property barrier and south to the property line barrier. The barrier pillar along the North property line is 75 feet wide, along the west property line is 83 wide and along the south property line is 130 feet wide. The barrier along the outcrop should not be less than 25 feet to prevent openings to the surface.

Other mining consists of seven (7) entries driven to the east and west parallel to the North property line entries with a 280 foot barrier between them. Also seven (7) entries are driven east to the outcrop parallel to the south property line. There are seven entries driven north to the outcrop barrier from the entries along the south property line. These entries are to the right of a 6 foot fault. There are six (6) entries of various length driven to the east to the outcrop barrier from the west property line entries. A 280 foot barrier is maintained between these and the 7 entries along the south property line. All entries and crosscuts are on 75 foot centers. All entries and crosscuts are to be superimposed over or under each other in all

three seams. This will maintain column support for succeeding roof members, to prevent subsidence, provided that there is no requirement to mine pillars.

On Plates 3-6A and 3-7A, the 7 entries to the west, parallel to the north property entries, will be narrowd to 5 entries for 375 feet to allow for the inclined rock tunnels.

Other differences between superimposed mining in seams is due to mining towards the outcrop.

1.5 Retreat Mining

No retreat mining is proposed at this time.

1.6 Roof Control, Ventilation, Water systems, Dust Suppression, Dewatering, electrical, Etc.

Plans for Roof control, Ventilation and Methane and Dust Control have been submitted to MSHA and are in the Chapter 3 Appendix, at back of Chapter III-A.

No dewatering plans are proposed, there is no evidence of water in the mine. However, water will be taken into the mine for sprinkling for dust control. Accumulated water will be pumped to a sump for recycling for sprinkling.

No Electrical Plan is proposed at this time. When the mine is developed, the Electrical Print will be submitted.

2.0 Barrier Pillars

Barrier Pillars will be left between Sections and around Perimeter of outcropping and along property boundary lines shown in Plates 3-6, 3-7A and 3-8A and described in item 1.4 of this chapter.

2.1 Protection of Oil and Gas Wells

No oil or gas wells exist in permit area.

2.2 Protection of Surface Streams

There are no running streams located on the permit area. Drainage is addressed in the Hydrology Section. One spring fed stream is adjacent to the permit area. No adverse effects are anticipated at this time, as the stream bed is below and lower in elevation than the lowest seam floor. The stream bed is at an elevation of about 5680 and the P Seam outcrop elevation is about 5810 near the South East Corner of the permit area. Near the North East Corner the stream bed elevation is 5800 and the B Seam outcrop elevation is about 5825. The P Seam is about 30 feet below the B Seam. Therefore the top of the seam is near the stream bed at this point. Superimposed mining will be 150 feet west from the East property line at the NE permit corner and the stream bed is 300 feet East of the NE permit corner. Therefore, it is anticipated there will be no water problems within the coal seam nor any adverse mining effect on the stream.

2.3 Property Boundaries

The property boundaries are surveyed and located on plates 3-3, also located by Deed of trust and insured Title. Policy # 12,611-9 by First American Title Insurance Company, through Southeast Utah Title Company-Moab, Utah Office.

2.4 Outcrop Protection

All portals and entries are going into coal seams on outcroppings. No other disturbances are planned in outcroppings. Refer to mining along or toward outcrops in Chapter VI, for additional outcrop protection discussion.

3.0 Conservation of Coal Resource

The mining plan for Black Jack #1 Mine is designed to extract the maximum amount of coal in each seam with entry and crosscut mining only.

Should the regulating authorities require mining of pillars, the plan will result in a good rate of recovery of total resources while maintaining good, safe mining practices. See Chapter XII, Subsidence, for additional discussion.

3.1 Projected Maximum Recovery

The Projected Maximum Recovery for Black Jack #1 Mine at present planned is 44%. However, an increased market demand for coal or a regulating authority demand may change the mining plan to include pillar recovery. Retreat mining or longwall mining

will increase the projected maximum recovery to around 60 to 67 percent which is approaching the total mineable reserves in each seam. See Table 6.2 in Chapter VI.

3.2 Justification For Non Recovery

The non recoverable coal in Black Jack #1 Mine is taken up in pillars separating entries and crosscuts, and barrier pillars separating sections and main entries, and property line and outcrop barriers. Refer to Chapter VI, section 6.5.2, for a more complete discussion on non-recoverable coal.

3.3 Access To Future Reserves

The main entries in the Black Jack #1 mine, in all seams where mining during this permit is conducted, may be used as access entries to future reserves beyond, but adjacent to, the permit area unless the regulatory agencies require the mining of pillars. Should this occur the mining of pillars could preclude access beyond the permit area unless mains are left open to go into the adjoining property. Presently there are no plans, in this permit, to mine in the contiguous property and have so indicated elsewhere. Refer to Chapter XII, Subsidence, for a more complete discussion on future and adjacent coal reserves.

4.0 Equipment Selection

The height of the coal seams in Black Jack #1 Mine limits the size of underground mining and support Equipment.

4.1 Surface Equipment

There will be no surface mining in the permit area. Therefore, no surface mining equipment will be used at the mine. However, there will be support equipment for underground mining and equipment to maintain roads, ditches, etc., on the surface.

4.2 Underground Equipment

Several pieces of major ancillary equipment will be utilized at Black Jack #1 Mine to ensure safe and efficient operation of continuous miner and conventional mining units.

Black jack #1 Mine is basically a belt haulage mine. All coal is to be shipped out of sections and mains by a series of interconnecting belts. Men and materials will be carried on mobile battery or diesel mantrips and material haulage equipment.

The following table lists proposed equipment in Black Jack #1 Mine.

TABLE 3-1
MINING EQUIPMENT

CONTINUOUS MINING UNIT

1 Continuous Miner

2 Shuttle Cars

1 Roof Bolter

2 Rockdusters

1 Power Center

1 Feeder Breaker

SUPPORT EQUIPMENT

2 Battery or Diesel Material haulers

2 Battery or Diesel Mantrips

1 Portable Rockdusting Unit

2,000 ft. 42" Conveyor

2,000 ft. 36" Conveyor

2 Belt Drive Power Centers

1 Mechanics trailer

Welding Machines

CONVENTIONAL UNIT

1 Cutting Machine

1 Loading Machine

2 Shuttle Cars

2 Rockdusters

1 Power Center

1 Feeder Breaker

5.0 Mine Safety, Security, Fire Protection

Diligent adherence to Roof Control Plan, Ventilation and Dust Control Plan, and compliance with State and Federal Regulations plus training and retraining of personnel will ensure safe operation of the mine. Ref. - General Safety Orders Utah Coal Mines, Title 30 CFR 75.1721, Fire Protection for Surface and

Underground Facilities will meet all state and federal requirements.

Security for the property includes a gate on the access road to the mine that is locked when mine is not operating.

5.1 Fences and Gates

All hazardous areas will be fenced and posted, due to the ruggedness of the terrain surrounding Black Jack #1 Mine a total perimeter fencing is not feasible. The access road to the mine is equipped with a gate across the road that is closed and locked when there is no activity at the mine.

5.2 Fire Protection

Approved dry type chemical fire extinguishers will be placed at strategic locations throughout all facilities. They will be inspected and maintained on a regular schedule, in compliance with state and federal regulations. All personnel will be instructed in the use of fire extinguishers and evacuation of facilities. All exits within the mine will be marked, and an evacuation plan will be posted showing exit routes and assembly areas. All potentially hazardous areas will be posted.

No coal storage or refuse piles will be located on the permit area. All coal from the mine is loaded into a truck loading bin and hauled from the mine property. The coal seam underground will be protected by approved dry chemical fire extinguishers, also there will be a water fire fighting system

that runs from the portal along the belt line to the working sections. There will also be an automatic fire suppression systems on all underground belt conveyor discharge or transfer points and on face equipment. The water type dust suppression system will also help prevent fires.

6.0 Operations Schedule

The schedule for operations at Black Jack #1 Mine is to first complete the development of 2 entries. One entry is air intake and one entry will be the main haulage entry and will contain the belt conveyor to the coal bin. After this development is completed, clean up operations will be done on old workings, belt lines installed and development of 5 entry mains will continue from old workings to the property boundaries, sections will be turned off main entries. Plates 3-6A, 3-7A, and 3-8A. Refer to Chapter II, for Mining Schedule, Chapter VI, for additional discussion.

6.1 Annual Production Per Year For Permit Area

It is expected that with increasing emphasis on production, in a development section, an average production rate of 300 tons per machine shift for continuous miner and 200 tons per machine shift for conventional mining can be accomplished.

$452.5 \text{ tons per } 8 \text{ hour shift for } 1 \text{ shift per day} = 452.5 \text{ per day} \times 221 \text{ days per year} = 100,000 \text{ per year production.}$ Refer to Chaptr II, Mining Schedule, and VI for production schedule and reserves.

6.2 Operating Schedule - Days - Shifts

Projected operating schedule for Black Jack #1 Mine is one (1) production shift per day and one (1) maintenance shift per day, 221 days per year. Totals: 221 production shifts, 221 maintenance shifts, for a total of 442 shifts per year.

6.3 Operation Employment

Present employment projections are for eighteen (18) people at mine site.

7.0 Mine Permit Area

The mine permit area is 160 acres of privately owned property located in Thompson Canyon, Utah, approximately 5 1/2 miles north of Thompson, Utah, in Grand County.

7.1 Projected Mining By Year

1986	100,000
1987	100,000
1988	100,000
1989	100,000
1990	100,000
TOTAL	500,000 Tons

These projections reflect maximum tonnage mineable to adequately conserve resources.

7.2 Acreage and Delineation of Mine Permit Area

The Black Jack #1 Mine permit area is NE1/4 Section 29, Township 20 South, Range 20 East S.L.M., containing 160 acres. Plate 3-3, ref. Chapter II Exhibit 2-1.

8.0 Mine Plan Area

The area covered by the present mine plan is shown on Plates 3-6A, 3-7A, and 3-8A.

8.1 Projected Mining By Future Permit

At this time there are no plans to mine other leases or contiguous land from this permit area.

UMC 784.11(b) A narrative explaining construction, modification, use, maintenance and removal of the following:

- (1) Dams, embankments, and other impoundments are addressed in Chapter VII-A, UMC 817.46.
- (2) Overburden and Topsoil handling, storage areas and structures are addressed in Chapter VIII, UMC 817.21-.25.
- (3) Coal removal, handling, storage, cleaning and transportation areas and structures. The first three items are Not Applicable. Transportation is addressed in Chapter II, UMC 782.19; Chapter III, UMC 784.24; Chapter XI, UMC 817.95, .95(b)(1) and also in Chapter XIV.
- (4) Spoil, coal processing waste, mine development waste, and non-coal waste removal, handling storage, transportation disposal areas and structures. These items are addressed in Chapter III, UMC 783.19 and Chapter XII 817.61-.68, 817.71-.88, .89, .91-.93.
- (5) Mine Facilities are addressed in Chapter III, UMC 784.12(a) 1.3.
- (6) Water pollution control facilities are addressed in Chapter III, UMC 784.12(a) and Chapter VII-A, UMC 784.14(a), .15(b), UMC 783.17.

UMC 784.12 EXISTING STRUCTURES
SURFACE FACILITIES/CONSTRUCTION PLANS

Black Jack #1 Mine Project is the reactivation of an inactive mine, and most all of the earthen surface facilities are in place.

UMC 784.12(a) Total Area For Surface Disturbance

Total area of surface disturbance is four (4) acres. These four acres were disturbed from previous mining and will be used as is, except for grading for the reopening of the mine and during the time of operation, as requested in this permit.

1.0 Additional Areas For Surface Disturbance For Life
Of Mine

No additional surface disturbance areas are planned at this time. However, should it become necessary to disturb any additional land outside or alongside previously disturbed areas the department (D.O.G.M.) will be contacted for permission or for instructions to proceed to obtain permission.

1.1 Site Selection and Preparation

Site selection and preparation has been done by previous mining operations in the Chesterfield and the Ballard seam on this permit area. Plate 3-10

1.2 Portals

Three (3) portals for the "B" (Ballard) Seam where mining will start are presently existing. Two (2) more portals are

partially completed, these will be completed, and the main fan installed before mining starts. Ref. - 1.6- Ventilation and Dust Control Plan. Plate 3-6A. The "C" (Chesterfield) Seam Portals will be opened and mined to beyond the second crosscut before mining in the B Seam is completed. Mining can then be changed from one seam to the other without interruption in production. The "P" (Palisade) Seam will be mined from the "B" Seam through rock tunnel inclines following mining of the C Seam. Plate 3-7A, 3-8A.

1.3 Surface Buildings and Structures UMC 784.12(a)

All surface buildings except the maintenance shop will be portable or mobile i.e., office, lamphouse, and warehouse. The shop will utilize an existing concrete slab. Plate 3-10., a 100 ton surge bin will be erected to hold mined coal and load trucks. The truck scales and scale house will be installed upon the existing concrete foundation.

Existing structures and facilities on permit area are as follows:

- a. Roads and yards
- b. Security Gate
- c. Scales concrete foundation
- d. Power and cap magazine
- e. Concrete slab, about 24' x 48' for shop
- f. Portals:
 - Three in B Seam
 - Three in C Seam
- g. Misc. small concrete slabs
- h. Concrete walls and foundation used for diesel generator
- i. Concrete foundation for water tank → ?
- j. Five storm runoff catch basins → ?

These will be described and noted existing on the surface facilities and buildings listing for this permit. These existing items were constructed by previous owners and operators of the mines. Item 3 powder and cap magazines could have been constructed during the 1946 to 1954 mining by the Reed Lance mining. Some of the concrete slabs could have been built then also.

UMC 784.12(a) DESCRIPTIONS - NEW AND EXISTING:

Surface facilities and buildings to be used during this permit term are numbered and listed the same as on Plate 3-10. Existing structures, foundations or existing portions of the listed facilities and buildings will be noted and described along with the reconstructed or new facilities descriptions. These surface facilities and buildings consist of:

(Refer to Photographs of Existing Structures UMC 784.12(a)(2)).

1. Security Gate - An existing metal pipe gate on the mine access road about 900 feet from the Thompson Canyon road junction. The hinge post is a 6 inch metal pipe with a 6 inch supporting and brace post at 4 feet and at the bottom of hill side slope. The gate is 24' 6" long and consists of two-2 inch (2 3/8" O.D.) pipes at 2 foot centers. It is divided into four panels with vertical 2 inch pipe spreaders. There is a diagonal 2" pipe across the hinge panel from the low hinge. The gate is about 2

feet from the ground. The latch post is a 4 inch diameter pipe. The gate can be locked with the padlock in a pipe hood for weather and tamper protection. All posts are cemented in the ground.

2. Parking Area - An existing, graded and gravelled area of 70' x 42' and 35' x 15', located between the hilltop access road and the truck scale and at the foot of the undisturbed hillside to the east. It will be marked to provide clearance for haul trucks using the scale and to prevent blocking the hill top road. It will be used for management, employee and visitor parking.

3. Mine Office - A new facility consisting of a 12' x 48' trailer, purchased or rented, to be placed parallel to the hillside, on an existing pre-graded, graveled area between the parking lot and the scale house and between the scale foundation and the hillside. The trailer will be placed on concrete block supports and skirted. Entrance steps and landing will have adequate handrails.

4. Scales and scale house - An existing concrete foundation, constructed for scales, is 12 feet wide and 93 1/3 feet long, including a 10' 6" approach pad on the up canyon end and an 11 1/6 approach pad on the down canyon end. The scale pit is 6 1/4" deep with two end benches and six spreader walls 1 1/6"

high. The walls are 8 inches wide. the scale house foundation is a 6" thick concrete slab 6 1/6 wide x 7 1/6 long and located near center of scale foundation. This scale and house will be rebuilt to weigh coal haul trucks.

5. Portable chemical Toilets - New units, purchased or rented, to be placed in four (4) locations, as shown on Plate 3-10, to best serve mine personnel. Toilets will be self contained, approved type, as used in the industry. They will be serviced as needed.

6. Lamp Trailer - A new 12' x 20' foot trailer, purchased or rented, will be located on the lower yard of disturbed area near the road to the B Seam portal bench. It will be supported on concrete blocks and skirted. Entrance steps and landing will have hand railings.

7. Fuel Tanks - Two new, 8,000 gallon diesel fuel, surface type, storage tanks, purchased or rented, will be located on the existing hilltop bench, as shown on drawing, near the existing concrete generator foundation. An earth berm will be placed around the tanks to contain fuel spills.

8. Diesel generators - two new diesel generators, purchased or rented, will be located as follows:

✓
3132

a. The larger will be located on the existing concrete foundation on the hilltop bench to serve all mine electrical needs except fan. ✓
fan

The existing concrete foundation consists of four large support piers of approximately 2 feet wide x 10 feet long within a 24' x 35' rectangular concrete building stem wall of about 8 inches thick. Hard packed earth, stained with diesel fuel oil, surrounded the four large piers at the level of the piers and wall. This existing foundation has been covered with a new 6" thick, reinforced 24' x 35' concrete slab.

b. The second generator will be located on an existing 10' x 10' x 6" concrete slab located on the Chesterfield or "C" Seam bench near the sealed, existing mine portal and nearly over the B Seam fan entry. This generator will furnish power for the mine fan or fans only.

9. Water Storage Tank - A new 8,000 gallon, surface supported, tank, to be purchased or rented, will be located on the hilltop bench about 50 feet NW of the diesel generator and near existing small Catch Basin. It will be located on or near a pair of existing concrete piers of about 2" wide x 6" long. Water will be hauled by tank truck until the condition of an existing 1 1/2" plastic pipe is determined and repaired. Water will be obtained and hauled or pumped from the existing Thompson ✓

City culinary water collection box located in Thompson Canyon near the New Tech road junction. Water will be used for the surface facilities and piped to an underground sump and used for mine sprinkling and fire suppression. Refer to text 1.6 Water Supply System.

10. Powder and Cap Magazines - these are existing facilities on the lower yard canyon road to the West and just off the map, plate 3-10. They are located on drawing SC-1. Both magazines are excavated in the solid rock ledge as follows:

a. Cap magazine - A chamber, 4.1 feet wide by 2.8 feet high arched and 3.0 feet deep, excavated into the ledge. The opening is a concrete wall with a 1/4" steel by 1.25 feet wide x 2.9 feet high door that can be locked. It is nearer the mine yard and across the canyon road and about 25 feet from a small existing catch basin.

b. Powder Magazine - A chamber, 7 feet wide by 5 feet high by 8 feet deep, excavated into the ledge rock. The concrete walled opening contains a 1/8" steel plate on 3/4" thick plywood door about 2 1/2' wide x 6' foot high that can be locked. It is about 25 to 30 feet up canyon from the cap magazine and around a bend making it not visible from the cap magazine.

11. Service Shop and Shed - The service shop will be a new pre-fabricated metal building constructed on an existing concrete slab foundation. It is located, as shown, on the C Seam bench about 80 feet west of the sealed mine portal.

The existing concrete foundation consists of a 6 inch thick slab of concrete 30 foot wide by 48.7 feet long on the rock ledge bench. The walls around the perimeter of the slab are 0.7 foot wide x 1 foot high with door openings on each end. A trapezoidal slab extends 12 feet from the foundation on the portal end door and a rectangular slab extends 5.5 feet from the foundation at the rear door.

The small shed is an existing aluminum sided and roofed storage building 10 feet wide by 7 feet deep and 9 feet high. It is located adjacent to the back door of the service shop building. There is no concrete foundation. It is fastened to the ledge rock. It will be used for repair parts storage. See plate of shop foundation. Also refer to Photographs at end of Chapter III.

12. Mine Portals - There are five existing mine openings in the outcrop in the B Seam and three existing mine openings in the C Seam outcrop. There will be two additional new openings driven in the B Seam and five new openings driven in the C Seam under this permit.

The existing openings are described as follows:

B Seam - see plate 3-6A. In the B Seam five openings from the outcrop bench penetrates the coal seam. These were driven in 1975, with the opening of the West Pac Mine and from right to left are as follows:

(1) This portal is 4 feet high x 17 feet wide with only timber support as the massive sandstone provides a good roof and overhang. See photo graphs pages 5 and 6.

(2) The second opening is not used as a portal. It is about 15 feet wide and opens to 16 feet wide about 25 feet in where it connects to #3 opening. It has been recently walled over with a door to create a mine office and is not used as a portal. It is about 6 feet high.

(3) This portal, about 30 feet from the office opening, was the main portal for previous mining. It consists of a 17 foot wide x 8 foot high arched opening lined for 20 foot with a steel ribbed arched portal structure. See photo graphs pages 5 and 6.

(4) This portal is 17 feet wide by 7 feet high and will be used for the mine ventilation fan to be installed. The fan consists of a 7 foot diameter exhaust fan with 14 feet of duct.

(5) This opening in the outcrop is about 13 feet wide by 4 feet high by 40 feet deep. It does not make a connection within the coal seam and will not be used. See plates 3-6A and 3-11.

C Seam, see plate 3-7A. In the C Seam are three existing openings in the outcrop. These three mine portals were developed by the Clark Coal Mine (Reed Lance Mine) that conducted mining from 1946 until 1954, from this seam. These openings are located and described as follows:

(1) Two openings on 75 foot centers were driven from the outcrop, see plate 3-7A, as shown in the NE Corner of the property on the Chesterfield Seam outcrop. These openings have been closed with a pair of wire mesh doors in a 7.5' wide x 7.9' high opening within a concrete wall. See photograph 1, Page 5.

(2) The other opening and a separate mining area is located near the center of the permit area above the old West Pac Mine. This portal opening has been closed with wire mesh doors in a 7.5' x 7.9' opening within a concrete wall. See photograph 1, page 5.

The new mine openings are as follows:

B Seam, see plate 3-6A, - Two portals and entries are to be driven from the outcrop on 75 foot centers and to the right (east) of the existing entries to connect with entries in the previous mining. These are to serve as a fresh air intake and a haulage way.

C Seam - See plate 3-7A, five new portals and entries will be driven in the C Seam during this permit to accommodate mining in the C Seam. The old portal will not be used. Three of these portal entries will be driven on the right (east) of the present, existing entry. They will be super-imposed over the B seam portals.

Two others will be driven to the left of the existing entry. However, because of the angle and configuration of the previous mining in the B Seam they will not be entirely super-imposed. they do line up with the mine projection beyond the existing mining in either seam.

There are no existing or new portals planned within the Palisade or "P" Seam that lies below the Ballard Seam and no mining within this seam is planned during this permit without advance permission from D.O.G.M. See chapter 2, UMC 782.17. Then any mining in this seam will be through rock tunnel inclines from the B Seam. See plate 3-6A & 3-8A.

13. Coal Surge Bin - This is a new facility for the New Tech mine and consists of a used 100 ton capacity steel, rectangular bin that has recently been installed on a new concrete slab foundation. Advance permission to install this bin was obtained from D.O.G.M.

The bin is 32.5 feet high and consists of a 10 foot high section of vertical walls that are 17' wide x 19' long. The sloping walls of the bin are 5 1/2 foot vertical. Clearance under the bin is 17 feet.

The concrete foundation consists of three reinforced concrete slabs of 12 inches thick, as follows:

The center slab upon which the bin rests is 27.2 feet wide and 33.4 feet long. The truck approach slab is 14 feet square and adjoins the 33.4 feet side at 9.7 feet from the ends. The exit slab is 14.2 feet square at 9.6 feet from each end. See photographs 2 and 3 on page 4.

14. Service and Access Roads and Yards - completed existing facilities as follows:

a. The main access road extends 940 feet from the county road junction to the security gate, 400 feet to the parking lot and junction with the hill top road, 670 feet to the junction with the road to the Ballard Seam bench and 340 feet to the powder magazine for a total of 2360 feet. The road extends beyond the powder magazine and will remain after closure of mine to serve the canyon and stock users. The road widens at the junction to the hilltop road and parking lot and B Seam bench to about 200 feet wide to form the main yard. It contains the parking lot, office trailer, scales, and the 100 ton storage - truck loading bin.

b. The hill top road extends 380 feet S.E. from junction to a bench and switch back to N.W. along the ridge 380 feet to a junction with the Chesterfield Outcrop bench road, then along the ridge 190 feet where it becomes a sidehill bench and yard 100' wide for another 320 feet for a total of 1270 feet more or less. The bench yard contains the fuel oil

tanks, generator foundation and the water tank. Photos 1 & 2, page 1.

c. The road to the B-Seam bench is 120 feet long.

d. The road along the B-Seam outcrop extends 90 feet to the east in front of the portals and to the left 245 feet along the outcrop to the west a total of 335 feet.

e. The C-Seam outcrop road extends 750 feet from hill top road junction to a junction with a steep road connection with the B-Seam bench and 1100 feet more along outcrop to beyond the slope for a length of 1850 feet. It widens to 100 feet at shop area.

f. The road from B-Seam to C-Seam bench is about 70 feet long. Other existing facilities - See Existing Facilities listing.

g. Small concrete slabs - there are two existing small concrete slabs on the property. The one on the C Seam bench (see picture of shop foundation) will be used for the fan diesel generator. The other is on the B Seam bench in front of the old haulage portal (3rd from right) where coal was dumped onto a surge pile and picked up by front end loader for loading trucks. This slab will not be used and will be removed during reclamation. This slab is shown on some photos as listed above.

The photographs are enclosed in the back of Chapter III, as indexed.

h. Refer to item 8, Diesel Generators, existing foundation description.

i. Refer to item 9, Water Storage Tank, existing foundation description.

j. Storm Runoff Catch Basins - There are presently five (5) small, existing storm runoff catch basins on the permit area. These were previously constructed to serve as sedimentation ponds and were approved by the following persons, as quoted from a prior submittal of this permit request:

*✓
new letter*

"Ms. Sandy Pruitt (Mining Field Specialist, D.O.G.M.) approved of the sedimentation basins on an inspection of the Black Jack #1 mine permit area, June 7, 1984."

"Mr. Frank S. Atencio (Program Specialist, O.S.M.) also approved of the sedimentation structures on an inspection conducted June 21, 1984."

These existing structures will herein after be referred to as catch basins.

A more recent study, by Empire Engineering and Land Surveying personnel, of these catch basins indicate they are not suitable for the purpose for which they were constructed. They are too small, poorly located, were probably excavated by a backhoe and the slopes are too steep and the crest width of the narrow part of the impoundment is very inadequate. They have no principal overflow and no means of decanting. Because of the narrow crest, steep sides and locations they would be most difficult to rebuild and

stabilize. Therefore, Two (2) new sedimentation ponds are planned and will be described in chapter VII-A, Hydrology SEDIMENT CONTROL MEASURES, UMC 817.45 TO .46.

A description of these five existing catch basins is given and also a reference to the location of the two new sedimentation ponds #1A and #2A. The description of existing structures is as follows.

1. Catch basin #1, is located on the north edge of the access road, before the security gate and at the property line. It will no longer exist or be referred to as it is within the area of excavation for the new sedimentation pond #1A, which will be described in Chapter VII.

2. Catch basin #2, is located on the West edge of the road in the lower yard at the junction to the hilltop road, the parking lot and the scales. This catch basin has no principal pipe overflow and is inadequate for size and would present a problem to rebuild and stabilize the dam. The overflow depression will be filled so excess storm runoff after filling the basin will flow down the access road and into Sedimentation Pond #1A.

The depression and area will be used for a collection site for mine waste that will be loaded periodically and hauled to the sanitary land fill at Moab. (Refer I,C 784.19, Underground Development Wasted, Chapter III-A)

3. Catch basin #3, is located at the powder and cap magazine. This excavation is very small but can serve a purpose. It serves an area for which a small area exemption is being requested. It will not be reclaimed until the permit area is reclaimed. It will be used to collect runoff and silt during the permit term. The overflow spillway empties into an existing natural depression or basin on the ephemeral stream. The natural basin is the upper of five (5) natural basins on this drainage structure. ✓
#32

4. Catch basin #4, is a very small crescent shaped excavation on the east side of the switch back on the hilltop road. Any overflow from this existing basin will flow into a new pond No. 2A, to be constructed about 50 feet SE at the end of the flat area at the switch back. This catch basin will be reclaimed during the permit area reclamation along with pond 2A. ✓

5. Catch basin #5, is a small excavation at the water tank and generator area at the edge of the bench on the end of the hill top road. It is not adequate in size, any overflow is into the drainage of sedimentation pond No. 1A. Therefore this excavation will remain as a runoff catch basin and will be reclaimed during the permit area reclamation. ✓

The two new sedimentation pond facilities, #1A and #2A, will be sized to contain a 10 year 24 hour storm and silt storage under the worst possible conditions. Refer to Chapter VII-A, for design and capacity requirements.

1.4 Coal Handling, Processing, Preparation and Storage

Coal is loaded on a series of interconnecting underground belts dumping into a surge bin outside the portal area, from which trucks will be loaded to haul the coal off the property. No preparation plant is planned at this time. There will be no storage of coal on the permit area except for the 100 ton truck loading bin. See photographs of bin pages 4 and 5.

1.5 Electrical Power System

Present plans call for two portable power generators of sufficient capacity to operate the facility. One generator to supply power for fans, the other to supply power to the rest of the facilities. No transmission lines or substations are planned at this time. Mine feeder cables through a borehole into the mine, will comply with state and federal regulations. Ref. - General Safety Orders Utah Coal Mines CFR Title 30.

1.6 Water Supply System

Arrangements have been made with Thompson Water Improvement District to purchase water to operate the facility. Water will be either pumped or hauled from a spring or pipeline to an 8,000

gallon water tank and dispersed to the mine and surface facilities from the tank as needed.

New Tech Mining Corporation has obtained permission to construct a concrete sump on the county right-of-way in Thompson Canyon. The purpose of this sump is to receive water from the Thompson Water Improvement District and to pump from the sump to fill a truck for use at the mine. This truck haul will continue either on a permanent basis or until the pipe line is installed. (Refer to letter from Grand County dated August 27, 1985, in appendix 3).

An underground sump will be built to contain additional water required for dust suppression in the mine. As face water develops from sprinkling water it will be recycled through the sump and reduce the demand on surface water. Refer to letters from Thompson Water Improvement District, in Appendix 3.

1.7 Sewage System and Bathing System

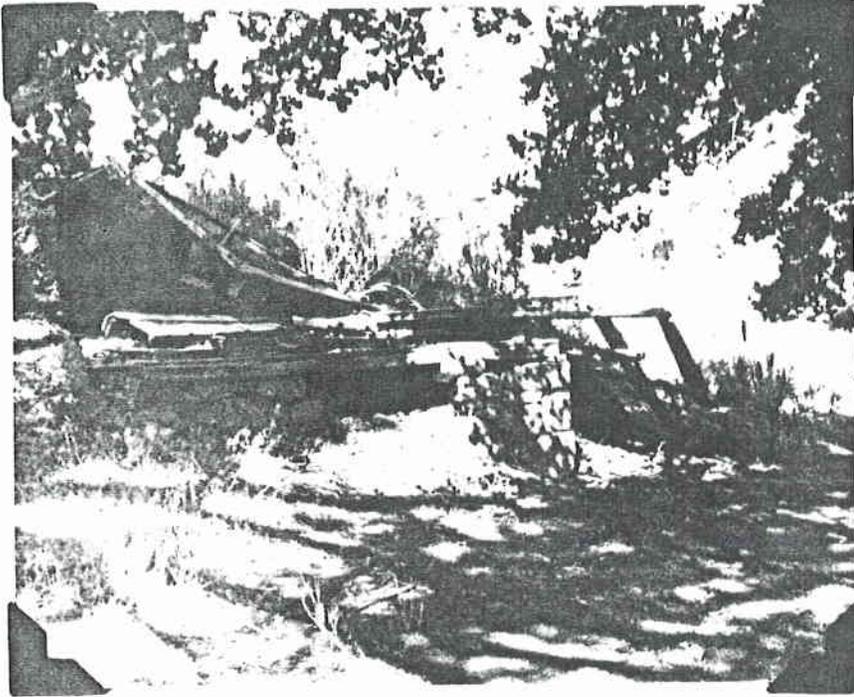
The use of portable chemical toilets will be used in lieu of an on site sewer system. These toilets will be located to accomodate the mine personel assigned to operate the facilities.

The use of a trailer to be located on the motel property in Thompson will be used for change room facilities for mine employees who will be transported to and from the mine. (See letter of intent from Thompson Motel, Thompson, Utah, in Appendix 3, at the back of Chapter III-A.

MC 784.12(a)(2) PHOTOGRAPHS - Existing Structures:

The next 8 pages contain photographs of the existing structures as outlined in Chapter III, UMC 784.12, and photographs of the new 100 ton coal bin that has been erected and the new concrete cap placed over an existing generator foundation.

EXISTING STRUCTURES



1

OLD HOMESTEAD BUILDING ON
PATANTARAS PROPERTY

450 feet north of the North East Corner
of permit. Location shown on Drawing
NT-1.



2

CULINARY WATER COLLECTION BOX THOMPSON
WATER IMPROVEMENT DISTRICT

Located on Thompson Creek and adjacent to
the county road (behind and about the
level of the persons head). It is 180
feet above the access road junction to the
permit area and 310 feet east of the east
property boundary.

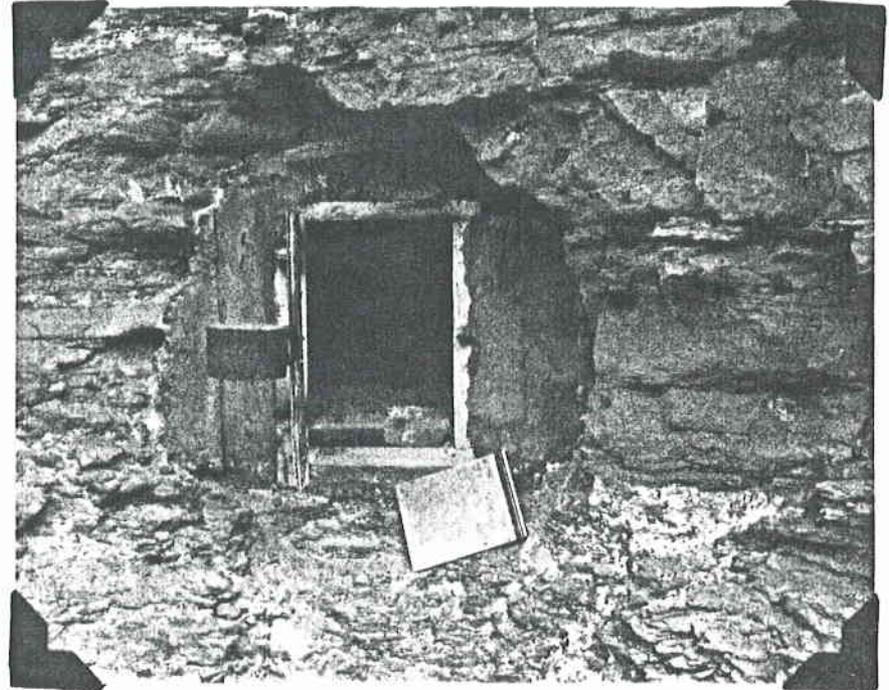
Location shown on Drawing NT-1 and on
Drawing SC-2

Repairs by Thompson Water Improvement
District following a flash flood from
high country up the canyon.

EXISTING POWDER AND CAP MAGAZINES



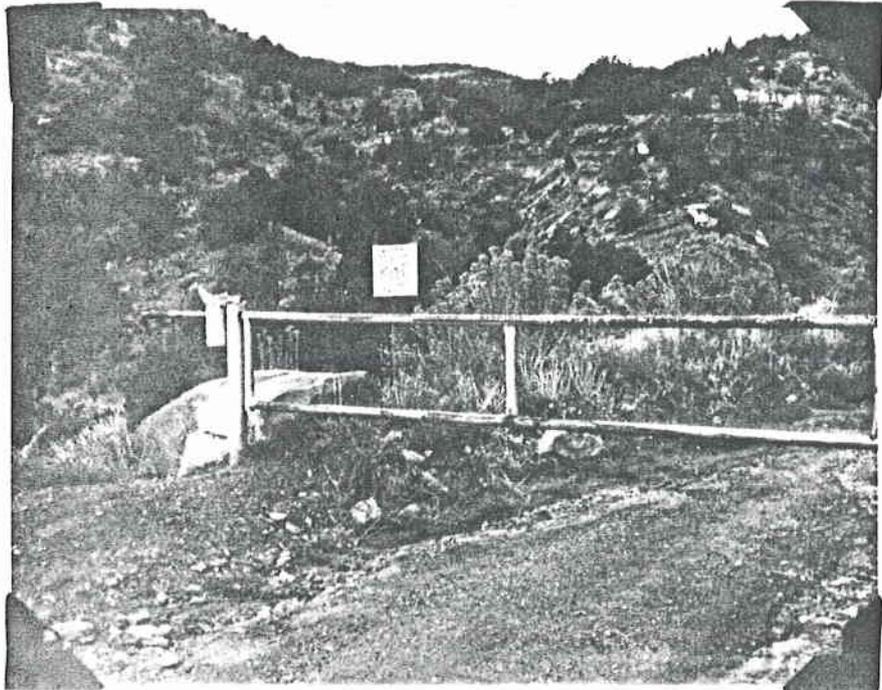
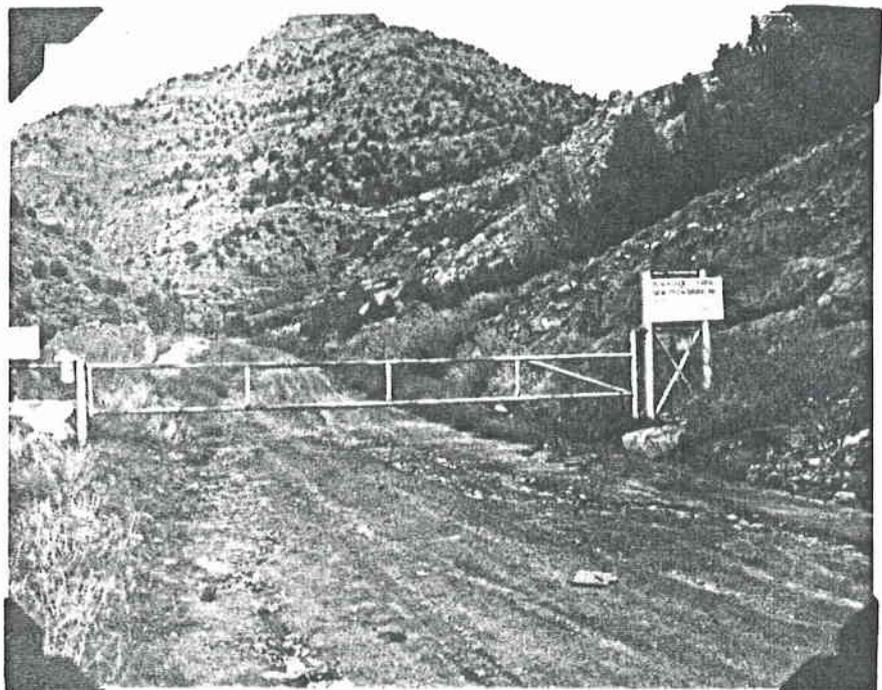
POWDER MAGAZINE



CAP MAGAZINE
(Note Letter size clip binder)

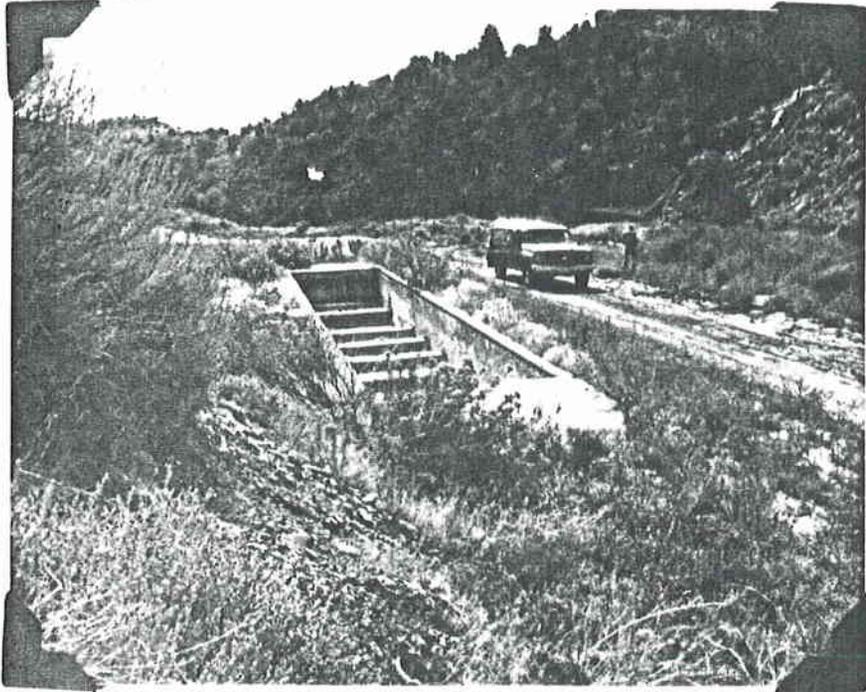
The powder and cap magazines are located along the ephemeral stream to the west of the main yard lower bench. The locations are shown on Drawing SC-1, Drainage Runoff Control, on the small area exemption, Area C. They were probably constructed during the 1946 to 1954, mining operation conducted by Reed Lance Mining Company.

MINE PROPERTY SECURITY GATE ON ACCESS ROAD

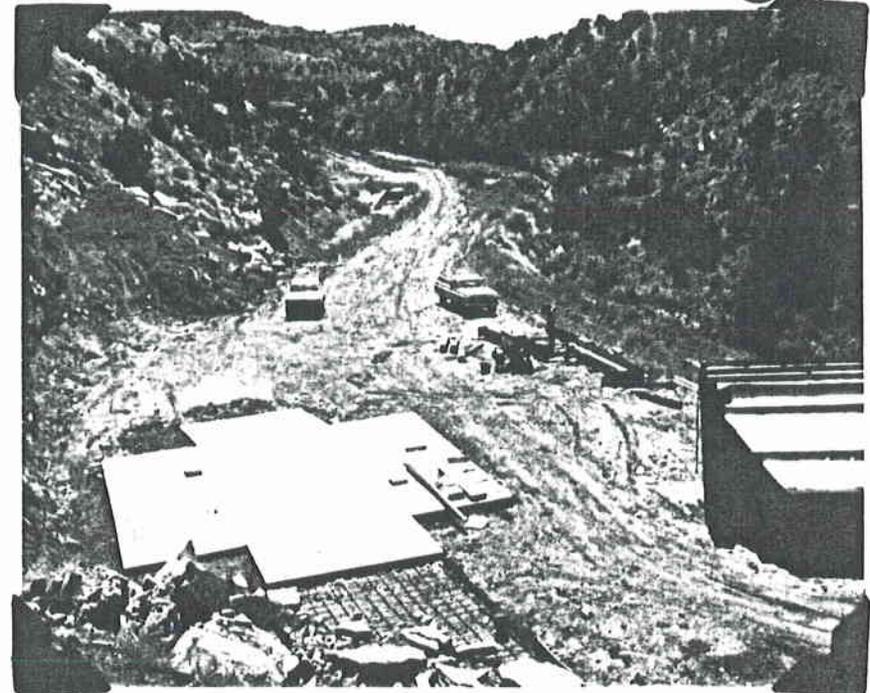


The Security Gate is located on the access road to the mine property about 800 feet above the junction with the county road. It is shown on drawing SC-2.

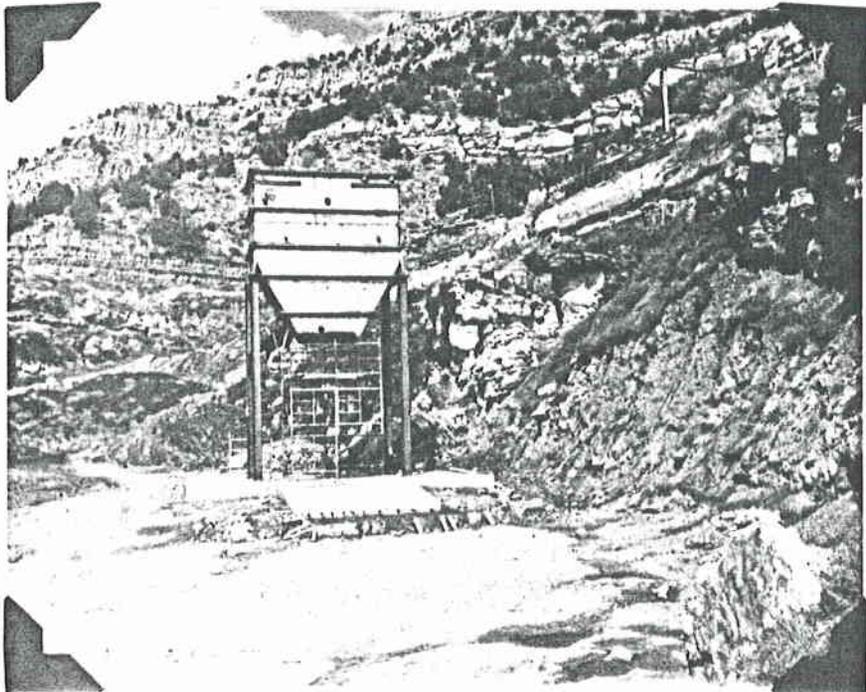
All photographs are looking up road toward the mine facilities yard.



1. Scales Foundation - to south



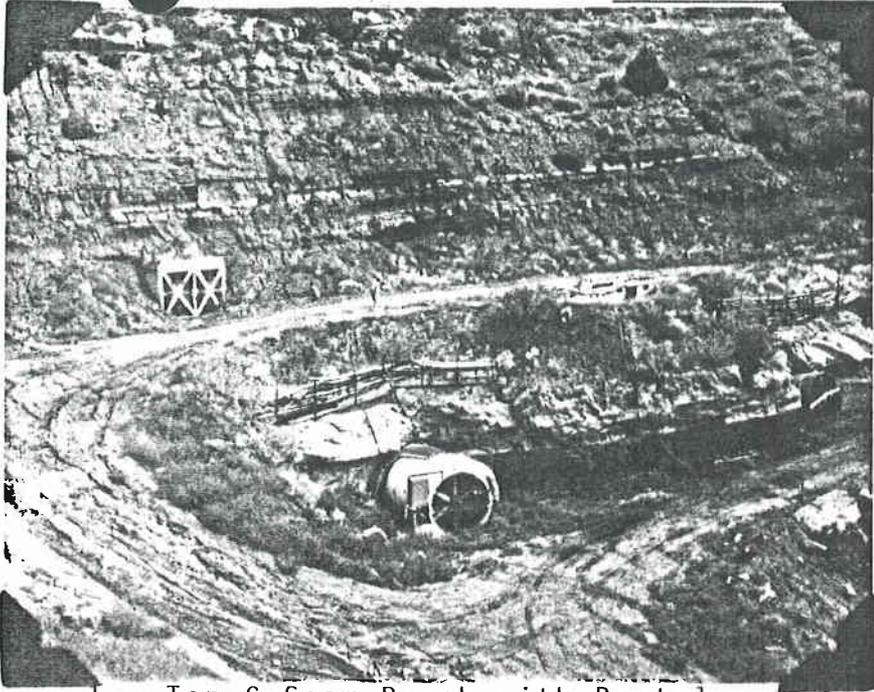
2. Coal Bin Foundation - to south east



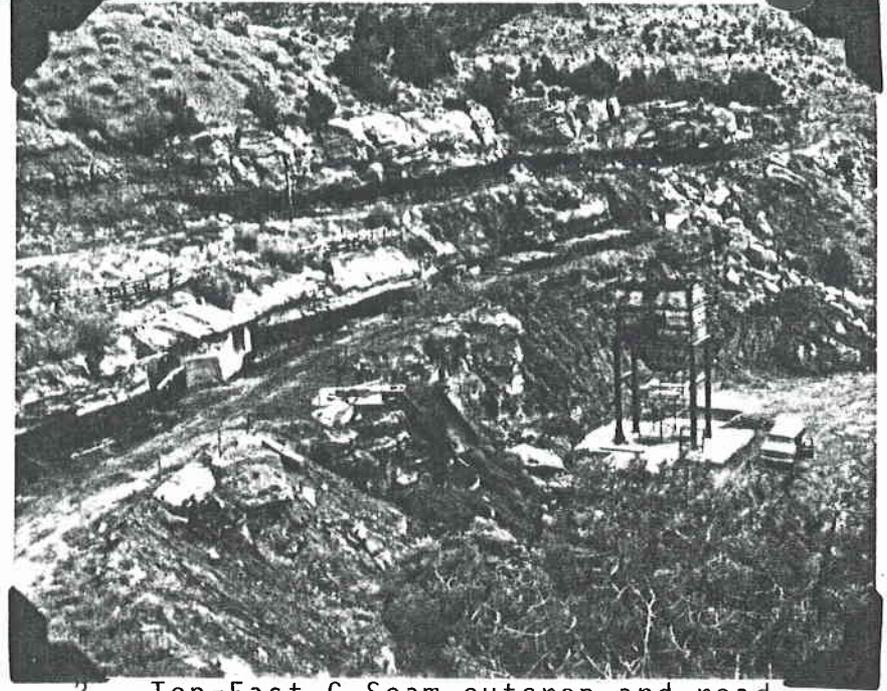
3. Coal Bin - to north west

NEW TECH MINING CORPORATION LOWER,
MAIN YARD AND FACILITIES

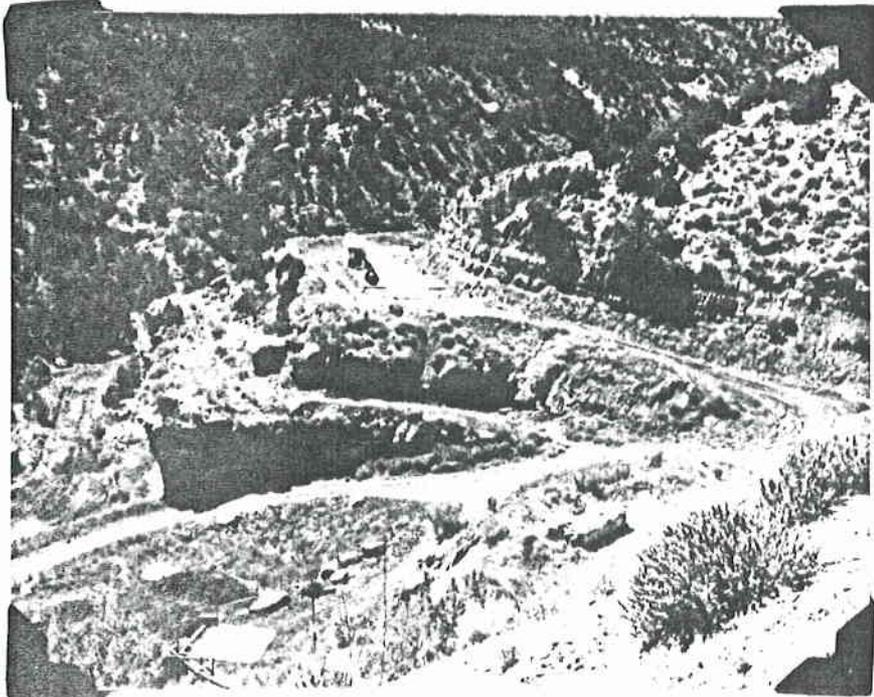
1. Scales Foundation, catch basin #2 between man and vehicle and exposed P Seam coal seam over man's head.
2. Coal bin foundation under construction. coal bin to right, scales foundation top center and access road beyond scale foundation. Looking south east.
3. Erected coal bin, B Seam roof rock to right of top of bin. Coal pile, background left, from previous mining.



1. Top-C Seam Bench with Portal
Lower-B Seam Bench with Fan



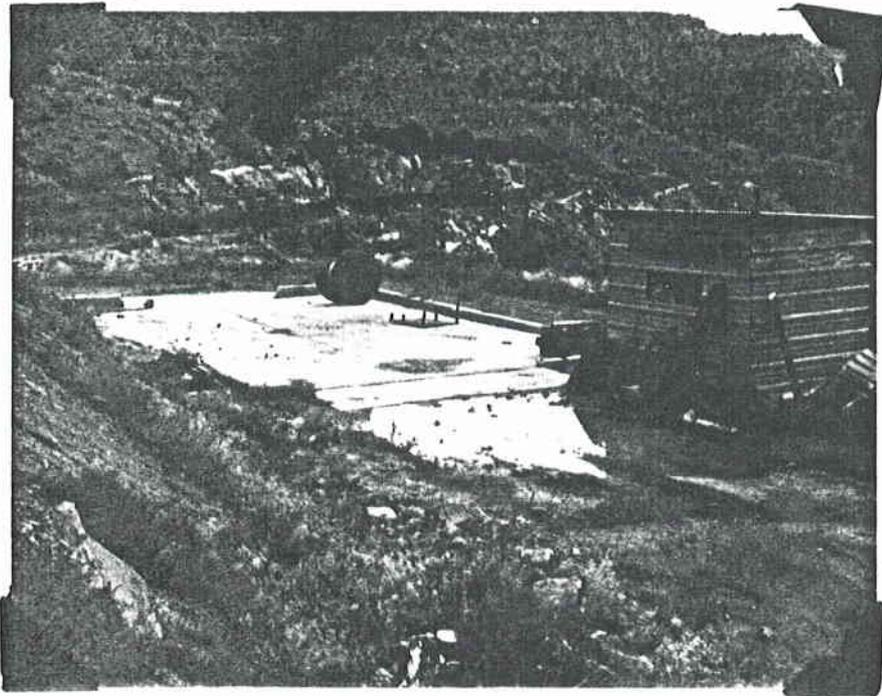
2. Top-East C Seam outcrop and road
Lower-East B Seam Bench yard



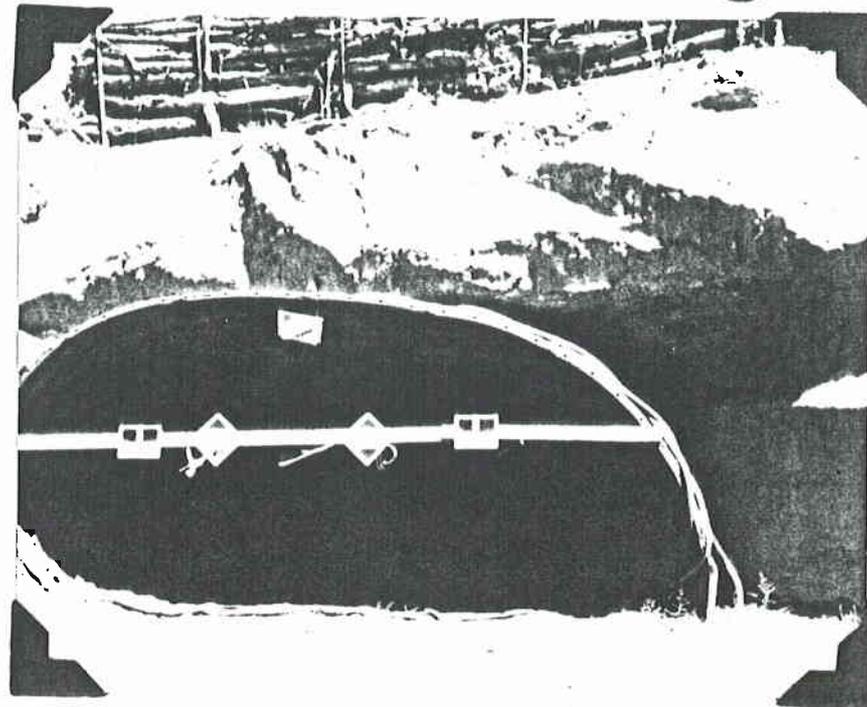
3. Top-west C Seam bench-shop foundation
lower-west B Seam bench

NEW TECH C and B SEAM BENCH YARDS

1. Top bench is C Seam with temporary Sealed portal. Note coal outcrop over mans head. Lower bench with fan is B Seam showing coal seam and portal structure to right.
2. East end of C and B Seam benches. Note exposed C Seam coal along road. Also B Seam coal, portal, concrete seal at office and timber pile. The coal bin is on the lower main yard.
3. West ends of C and B seam benches. The shop foundation and small shed is on the C Seam. Note coal outcrop on B Seam bench and vegetation growth. Also note connecting road from lower yard to B seam bench and to C Seam bench. Powder & cap magazines beyond road on left edge.



1. Shop Foundation & Shed - C Seam



2. Arched, Steel Portal Structure
B Seam



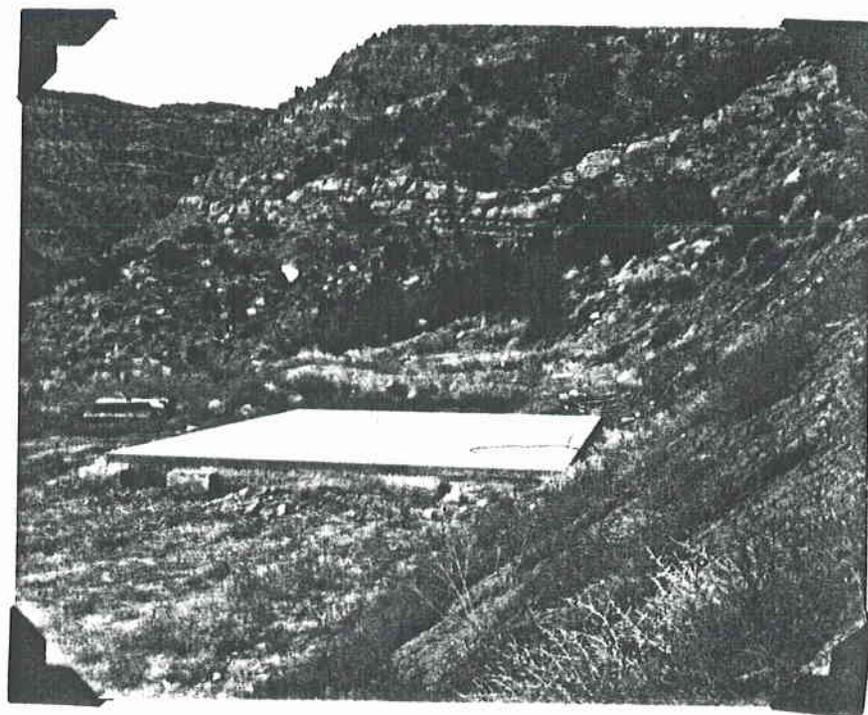
3. B Seam Bench - Timber storage

NEW TECH MINE FACILITIES STRUCTURES

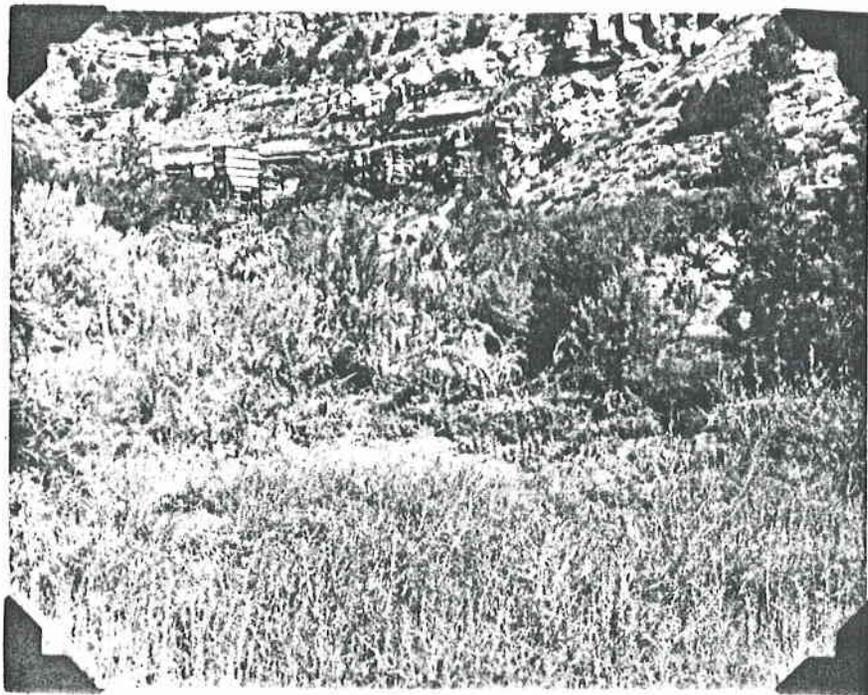
1. Existing shop foundation and shed. C Seam coal outcrop and road east above foundation. Note thick ledge over seam.
2. Arched, steel portal in B Seam. Note sandstone roof member. Timber crib above portal to support C Seam bench and to stop falling rocks.
3. B Seam bench yard and timber pile. Note thick sandstone roof over B Seam and thick sandstone ledge over C Seam. C Seam coal exposed over right mans head.



1 Existing Generator Foundation



2 Existing Generator Foundation

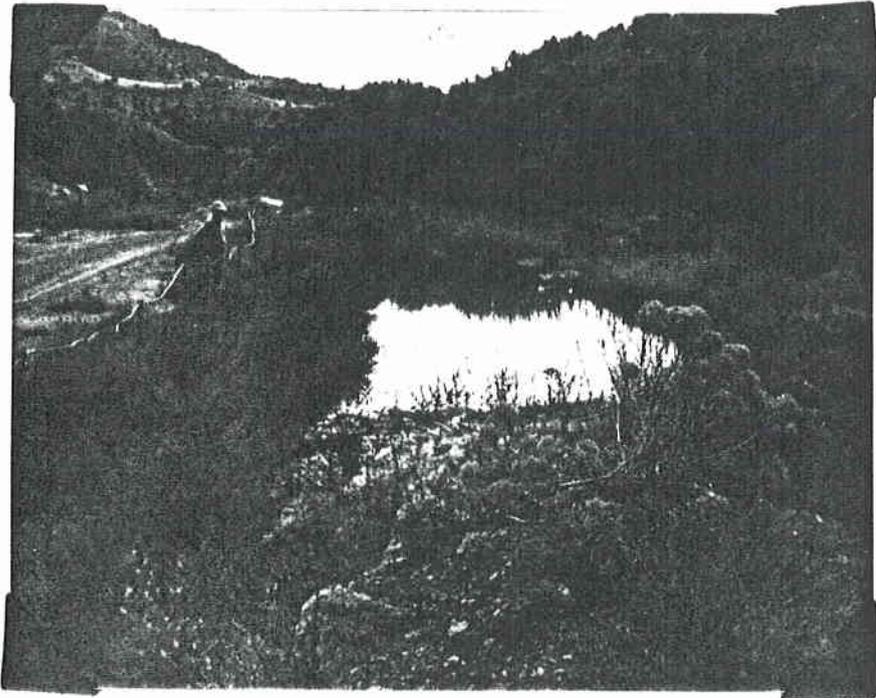


3 Ephemeral Stream Bed

NEW TECH HILLTOP FACILITIES YARD

1. Looking south east at new concrete cap on existing generator foundation.
2. Looking north west at generator foundation, 8,000 gallon water tank, existing concrete foundation, about 20' beyond. Two 8,000 gallon fuel tanks to be this side of generator foundation.
3. Looking north west from bottom of ephemeral stream bed. Note coal bin in top left. Access road gate to right of picture. road slightly visible at top right.

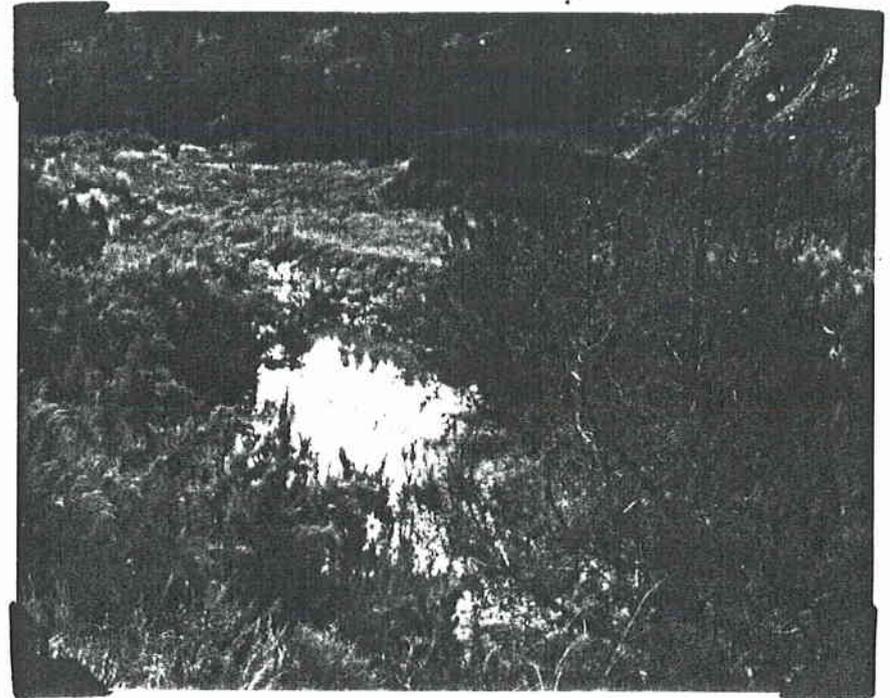
EXISTING CATCH BASIN #2



1

Storm Runoff Impounded in existing catch basin #2, by the scales. This basin will not be used as a sedimentation pond. It will serve as a collection area for mine waste to be hauled to the Grand County Sanitary Land Fill at Moab, Utah. The overflow from this basin will flow into sedimentation pond 1A.

NATURAL DRAINAGE BASIN #4



2

Storm Runoff Impounded in a natural basin in the ephemeral drainage through the mine permit area. This is basin number 4 of 5 natural basins existing within the permit area on this ephemeral drainage.

CHAPTER III-A
RECLAMATION PLAN

UMC 784.13-.26
UMC 817.11

RECEIVED
FEB 07 1986

DIVISION OF
OIL, GAS & MINING

Prepared For
NEW TECH MINING CORPORATION
MOAB, UTAH

Revised and Rewritten

October 1985

By

EMPIRE ENGINEERING & LAND SURVEYING

86 North 200 East
Price, Utah
84501

CHAPTER III-A
RECLAMATION PLAN

UMC 784.13-.26
UMC 817.11

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REVISION STATUS Chapter III-A

This Chapter III-A, RECLAMATION PLAN, is the last half of the original Chapter III. Nearly every page of the original text has had a revision, an addition, or a reference added. Therefore, it is very difficult to preserve the original page numbers. None of the pages in this Chapter III-A will be marked revised and dated.

A heading sheet will be prepared and will carry a revision date for the entire chapter. The heading will not have a page number.

The Table of Contents for this Chapter III-A, will be numbered 3A-i, 3A-ii, etc. and will include the Revision Status page.

The pages of the text, for this Chapter III-A, will begin with number 3A-1, 3A-2, etc. and in numerical order through the text with a lower case alphabetical prefix following the page number (except Sedimentation Pond Specifications) or at the back of Chapter III-A in an Appendix 3, that will serve both chapters III and III-A.

CHAPTER III-A

RECLAMATION PLAN

UMC 784.13-.26

UMC 817.11

UMC 784.13 RECLAMATION PLAN: General Requirements

The Reclamation plan shall conform, as listed herein, to all requirements in sections 40-10-17 and 40-10-18 of the Act, sub chapter k and to UMC 784.13 to UMC 784.26 in this part.

UMC 784.13(a) Reclamation Plans

The mining operation is planned for only one general vicinity and the presently disturbed area covers the area needed for roads, mine yards and surface facilities that will be required. It is unlikely that any major disturbed area will become not needed, during continuing operations, but if that condition would arise then the reclamation of that area, not needed, would start as soon as possible. The two old mines located in the C Seam near the NE part of the property are closed at the present time. The disturbance was from previous operators and there are no immediate plans to rehabilitate the area as it might be needed for ventilation purposes when mining the C Seam.

There will be a contemporary reclamation plan started as soon as the mining operation has started. The plan is to reseed the embankments, diversion, and outcrops of the two new sediment ponds as soon as the correct time and season arrives. The seeds will be the fast growing varieties such as yellow Sweetclover and

Salina Wildrye. The disturbed area of the uncovered Palisade Seam will be rehabilitated, covered and reseeded, at the earliest time possible. This area will be reseeded with the grasses, forbs and shrubs as recommended in Chapter 9. See Plate 3-10. Also shown on 3-10, is the Chesterfield coal seam exposure. Shown on drawing SC-2, is the covering of the exposed C Seam coal on the hill top area and the topsoil storage pile within a bermed basin to prevent storm runoff. The covered C Seam coal will be bermed with a drive in and will be utilized for substitute soil stockpile. The covers on the P and C Seam exposed coal will be 2.0 feet thick. There will also be three excess excavation piles from the two sedimentation ponds. These will all be reseeded.

There were samples obtained in several locations of the existing soils (disturbed areas, non-disturbed areas and berms) as found in Figure 8-1A and the results reported in table 8-2. (both in Chapter VIII). The areas were all disturbed by the previous mine operators and there will be no planned new disturbed areas during the proposed mining operation.

The only new "Substitute Soil" that will be obtained is that which is caught and removed from the sedimentation ponds and placed in a stockpile for further use in reclamation work. This stock pile will be signed and will be protected from surface drainage a berm placed around the pile. This "Soil Substute"

pile will be reseeded as soon as possible with the seed mixture and amounts of fast growing grasses and forbs as recommended in Table 3-4 for the Range Site II. A cross section of the substitute soil pile will be four times as wide as is the height.

The soil substitute pile will be sampled and analyzed for nutrients and for toxic content. Prior to its use in reclamation necessary remedial action will be taken if it is required. The analysis will include: the PH determination, net acidity/alkalinity, phosphorus, potassium, and texture class and any other analysis required by the D.O.G.M. These tests will be done by a qualified laboratory using standard methods approved by the D.O.G.M.

The "substitute topsoil" (silt removed from the sediment ponds) will be analyzed and evaluated as to the nutrients that need to be added to the undesirable items that need to be neutralized or removed prior to the use of this material for reclamation. The analysis of these sediments will be compared to the soil analysis shown in Table 8-2.

The backfilling and grading will be done by using a motor grader, a medium sized track type dozer and a front end loader with backhoe. The berms at the side of the roads and the outer edge of the roads if needed will be pulled back onto the yards and roads to achieve the original contours as much as possible.

The compacted areas such as the roads and yards will be scarified using the road grader and rippers on the tractor if needed. The Soil Substitute will then be distributed where needed.

There is no overburden at this mining operation. So there is no action to take.

The seed bed preparation and contouring will be done by using a small farm type tractor with discs, plows, seed drill, harrow and furrower. The disturbed area will be disced along the contour and in the steep areas of the roads. Ditches or water bars will be placed across the road at intervals of not less than five feet vertically. The ditches will be cut either by hand or by using a blade on a tractor or grader. These ditches will be at least six inches deep and water bars will be about six inches high.

The grass and forb seed will be planted in the fall when the seed will utilize the late fall moisture. The seed will be planted by using a drill seeder or by hand broadcasting in the steep areas. The seeded areas will be harrowed or raked by hand.

The seeded areas will be mulched using one ton of hay per acre and will be crimped with a disc and a farm tractor.

The shrubs and trees will be planted in the spring following the planting of the grasses and forbs. The containers of shrubs and trees will be planted by hand and placed in a random distribution of varieties of species.

There will be no terracing done in the reclaiming of the disturbed areas. There will be contouring done when discing, planting and ditching. The ditching will be done by plowing 6" deep ditches on contours and will be spaced at no more than 5 feet in elevation between ditches or furrows. This contouring and ditching where steep will slow the water runoff, causing percolation into the soil, which will help conserve the water for plant utilization. ✓

The contour ditching on the yard surfaces, level roads and benches will be done using a farm tractor with plow, and the contour ditching of steep roads will be done with a grader or by hand. ✓

Any gullies developing in the reclaimed areas more than 9 inches deep will be regraded and reseeded to protect the area from erosion. ✓

UMC 784.13(b)(1) Schedule of Reclamation

The time table for revegetation reclamation will start as soon as possible after the mine has been closed down and structures removed and the surface owner contacted to determine what roads he wants kept open for his business use with his livestock operation. The revegetation will start in the late fall season after the mine site is cleared up.

A schedule for the reclamation work and monitoring is shown in Table 3-3 appendix 3 and will start as soon as the weather permits after the cessation of the mining operation and in the right season.

UMC 784.13(b)(2) COST ESTIMATE FOR RECLAMATION

Revegetation Costs Per Acre

TABLE 3-4

Range Site II

Grass Seed:

Salina wildrye	1 lb. @ 2.00/lb	\$ 2.00	380
Western wheatgrass	5 lb. @ 3.25 /lb	16.25	625
Indian ricegrass	3 lb. @ 13.00/lb.	39.00	564
		<hr/>	
		57.25	<u>1569</u>

Forbs:

Lewis flax	1 lb. @ 10.00/lb.	10.00	290
Yellow sweetclover	2 lb. @ .40/lb.	.80	520
Smallflower globemallow	2 lb. @ 4.00/lb.	8.00	1000
Palmer penstemon	1 lb. @ 18.00/lb.	18.00	610
		<hr/>	
		36.80/ac	<u>2420</u>

Shrubs & Trees:

Big sagebrush	200/acre @ .70/per	140.00	3989 <u>916</u>
Fourwing saltbrush	200/acre @ .70 "	140.00	
Shadscale	200/acre @ .70 "	140.00	
Green mormontea	200/acre @ .70 "	140.00	
Winter fat	250/acre @ .70 "	175.00	
		<hr/>	
		735.00/ac	

SUBTOTAL 829.05

Fertilizer:

Ammonic nitrate	50 lb. @ 6.62	6.62
Treble superphosphate	50 lb. @ 8.13	8.13

		14.75
Mulch	item @ 60.00	60.00

TOTAL 903.80

Labor to reseed, plant, mulch
and Fertilize & farm tractor/acre

1282.50

TOTAL/ACRE 2,186.30

The Costs of revegetation based on Table 3-4 for a total of four (4) acres will be \$8,745.20 and the recontouring work needed prior to revegetation will be \$19,508.00 for a total of \$28,253.20.

UMC 784.13(b)(2)

1. REMOVE SURFACE EQUIPMENT

Remove all buildings and surface piping, wiring, etc.

		TIME	COST
Labor - 3 men	30.80/hr	100 hrs.	\$3,080
Front End Loader	33.00/hr	15 hrs.	495
Equipment - truck	35.00/hr	20 hrs.	700
Compressor/hammer	18.00/hr	20 hrs.	360
Cutting Torch	9.00/hr	10 hrs.	90
D-8 Cat w/ripper	90.00/hr	8 hrs.	720

		TOTAL	\$5,445

INSTALL PORTAL SEALS

Seal off five entries (only five entries will be open at one time).

Cinderblock, backfill and labor, including transportation of material, backhoe, and mortar will be \$1,000 per seal (see figure 3-1).

5 entries at \$1000	\$5,000

GRADE ROAD AND PADS, CHECK FOR AND NEUTRALIZE ANY TOXIC AREAS

Labor 2 men	25.00/hr	28 hrs.	700
Laboratory costs			825
Equipment:			
D-8 Cat	90.00/hr	8 hrs.	720
Grader cat	35.00/hr	12 hrs.	420
Front End Loader	30.00/hr	10 hrs.	300
(Cat. 566)			
Backhoe (Case 580)	20.0/hr	15 hrs.	300

		TOTAL	\$3,265

REMOVE CULVERT, RIPRAP STREAM

Backhoe \$40/hr	9 hrs.	\$ 360
Truck \$35/hr	20 hrs.	700
Labor, 3 men \$38.50/hr	35 hrs.	1,348
	TOTAL	<u>\$2,408</u>

RESEED, FERTILIZE AND MULCH (4 acres)

Seed, plants, mulch	\$3,556.20
Fertilizer	59.00
Labor: seed, plant, fertilize, mulch	5,130.00
	<u>\$ 8,745.20</u>

See Appendix 3 for costs quoted by JBCO Construction of Moab, Utah for comparison on revegetation and recontouring of property.

MONITORING

Monitoring the reseeding will be done in years 1,2,3,5,7, and, 10 in the month of July.

Labor, 6 yearly visits at \$150 each	\$ 900
Prof. & Supervision	1500
	<u>1500</u>
Reseeding contingency	1500
	<u>\$28,263</u>

GRAND TOTAL

The list of equipment needed for restoring and reseeding the disturbed land is as follows:

D-8 Caterpillar Tractor w/ripper	4 cu. yd. capacity
1200 Caterpillar Grader w/scarifier	1 cu. yd. capacity
Front End Loader Cat 566	4 cu. yd. capacity
Backhoe/Front End Loader Case 560	1 cu. yd. capacity
Tandem Dump Truck Ford 650	8 cu. yd. capacity
Farm tractor (Ford type) w/disc, harrow, seed drill & plow	

Two different contractors in the Moab area who do rehabilitation work for large oil field locations and are familiar with the Thompson Canyon Mine both stated that they could do the replacing of the roads and yards to an acceptable shape and do the recontouring in an estimated two days with a Cat tractor, a road grader, and a front end loader.

See Appendix 3, in Chapter III-A, for Cost Sheet of JBCO construction.

2. FORECAST OF PERFORMANCE BOND LIABILITY DURING PERMIT TERM AND FORECAST OF LIABILITY FOR LIFE OF MINE

At the present time there is still an active bond in an escrow account in the name of New Tech Mining Corporation with the Department of Natural Resources. As of June 11, 1985 the amount is \$28,442.11. With the amount of the bond on deposit being more than \$28,422.00 this amount is enough to cover all rehabilitation costs for the life of the projected mining operation. Rehabilitation costs are estimated to be \$28,263 (see page 3-36) (revision 8-85).

UMC 784.13(b)(3) FINAL ABANDONMENT

When the Black Jack #1 Mine is in final abandonment, all surface structures will be removed, the portals sealed and one sedimentation pond will be removed by backfilling and the area will be recontoured for erosion control and then reseeded. One sedimentation pond will be saved for livestock watering purposes. Monitoring of the revegetation program will continue during year 1,2,3,5,7 and 10. after planting or until released from bonding by D.O.G.M. (see fig 3-3). Additional information in Chapter VII, UMC 817.131 to .132 Cessation of Operations.

*Must save 817.131 U
permanently*

1.1 Sealing of Mine Openings

The portals will be permanently sealed by using a concrete block wall seal and then backfilled with a non-combustible material. Refer to Figure 3-1, in section 817.14, Casing and Sealing of Underground Openings in Chapter XII, which shows a typical portal seal design.

1.2 Removal of Surface Structures

Modular type buildings or trailers will be used for the surface facilities. They will be hauled away when no longer needed or at final abandonment of the mine. All other buildings and structures will be dismantled and removed. No structures or equipment will be left on the property. The concrete foundations and floors will be broken up and buried or removed at the time of abandonment.

1.3 Disposition of Dams, Ponds and Diversions

(The stream diversion conduit) will be removed and the stream channel riprapped to prevent excessive erosion. The one sedimentation pond will be filled and recontoured to best fit the environment and still maintain the maximum erosion control. Reseeding of the recontoured areas with plants and shrubs will be completed as soon as possible in the right season (see Table 3-3).

Refer to Chapters VII-A and VII-B for additional information on specific items.

1.4 Backfilling and Grading Plans

The backfilling of low spots in the disturbed area will be done with a grader and loader as required to distribute berms topsoil and substitute topsoil, if any, and to scarify the ground as much as possible. Also contouring for erosion control will be done.

1.5 Volume of Topsoil for Rehabilitations

Volumetric calculations for material needed (Topsoil or Soil Substitute) needed to place a six (6) inch layer on top of the reworked and recontoured mine yards, roads and loading work area are as follows:

Roads	Width 25' Length 3450' depth 1/2'	
		Total=1597 cu. yds.
Pads	width 75' length 700' depth 1/2'	
		Total 972 cu. yds
Load area	width 150' length 200' depth 1/2'	
		Total 556 cu. yds

		TOTAL VOLUME 3125 cu. yds

The berms along the roads have an average volume of 7 cu. ft. This will cover a strip 14' wide and 6" deep along the roads and along the yard and work area. (see Figures 3-2, 3-3, & 3-4)

Berms will furnish 1,127 cubic yards of topsoil, leaving 1,998 cubic yards to be acquired from scarifying and reworking roads and yard surfaces. If the material on the surface of roads will not meet the soil substitute standards, treatment with chemicals will be made so it will meet the standards required.

1.6 Removal of High Walls

High walls in the disturbed area and particularly around the mine portals are practically non-existent because of the massive sandstone ledge formations. High walls intermingled with the ledges will not be disturbed during reclamation. Benches, yard and road surfaces will be scarified, mulched and planted. High walls associated with roads are no steeper than existing undisturbed slopes and will not be disturbed except for some reseeding. The original surface disturbance occurred prior to the enactment of these regulations and except for road and yard surfaces, that have been addressed, have revegetated themselves and therefore will not be disturbed.

1.7 Contouring And Erosion Control

The mine yards and roads will be contoured and steep areas subject to fast water runoff in summer storms and snow melt runoff that have potential erosion problems will be contoured with water bars prior to revegetation, to prevent rapid erosion.

✓
exactly
what
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UMC 784.13(b)(4) SOIL REMOVAL AND STORAGE (UMC 817.21 & 817.25)

No additional surface disturbance is planned, except for construction of two new sedimentation ponds. However any additional disturbance of surface will first undertake the separation of the upper 6" to 12" of soil where present, This will be stockpiled for later use in the revegetation work of the

reclamation project. Topsoil removal, will be addressed and performed according to Part UMC 817.21 to UMC 817.25-Chapter VIII.

1.0 Soil Redistribution and Stabilization

The stockpiled topsoil or substitute soil will be uniformly distributed over the area to be revegetated by using a grader to get a uniform thickness of topsoil. This will be done after the backfilling and the recontouring of the surface is completed.

The soil will not need stabilization prior to revegetation and reseeding because of the very low precipitation of about 12 inches per year. The redistribution of the topsoil and earthwork will be done just a few weeks prior to the grading, recontouring and reseeding and mulching that will take place in the fall. The planting of shrubs will be done in the following spring. By doing this the soil will be stabilized as soon as reseeding is done.

2.0 PRESERVATION OF SOIL RESOURCES

There is very little soil available on the property; the steep rocky slopes with sandstone cliffs leave little room for soil development. The topsoil piles will be stabilized by reseeding the piles with fast growing plants such as Sweetclover.

For additional information turn to chapter VIII, SOIL RESOURCES, and refer to regulations UMC 817.21 to .25 -TOPSOIL.

3.0 PROJECTED IMPACTS OF MINING ON SOIL RESOURCES

The majority of the construction of roads, mine pads and utility areas has already been done by previous owners of the property. Therefore, very little impact will be made except for the construction of the two new sedimentation ponds as described in chapter VII-A, Sediment Control Measures.

4.0 Soil Preparation and Mechanics of Revegetation

The major individual steps required to accomplish the revegetation plan are:

- a. Surface structures removal
- b. Neutralization and removal of hot spots or toxic areas.
- c. Backfill and recontouring
- d. Install and repair drainage channels
- e. Seed bed preparation, plowing, discing, furrowing on contours.
- f. Mulching and fertilizing
- g. Seed planting
- h. Revegetation monitoring

Upon completion of the backfill and grading work surface preparation will begin. Soil samples will be taken at intervals throughout the disturbed area and adjacent undisturbed areas to correlate soil additive. Hot spots that are identified shall be neutralized or covered. Coal piles, such as presently exist, will be cleaned up.

The revegetation plan is to seed grasses and forbs and transplant woody plants. All disturbed areas will be graded to the most gradual slope possible. All areas with slopes too steep to allow mechanical harrowing will be dressed by hand as follows:

Steep slopes will be smoothed by hand making sure to fill in exposed rocky areas. Soil conditioners and fertilizers applied where needed, and mixed with soils by hand raking. To enhance both plant and root growth, a mixture of ammonium nitrate and triple super phosphate shall be applied at a rate of 50 pounds per acre each.

Prior to fertilizing, contour ditches 6" deep and water bars spaced 5' vertically will be installed along the slopes. It is reasoned that the benefits of ditching and water bars would include sediment control and increased soil moisture retention.

UMC 784.13(b)(5) REVEGETATION PLAN (UMC 817.111 to 817.117)

The disturbed area of the Black Jack #1 Mine totals about 4 acres. Elevation is 5800' and the general slope varies between 40 and 65 degrees. Average annual precipitation is less than 12 inches. The mining activities have occurred in two different Range Sites: Range Site II - Semidesert very steep loam (Utah juniper-pinon), and Range Site III - Loamy bottom.

The key plant species on each of these Range Sites is discussed in the vegetation section of this report (chapter IX).

1.0 Projected Impacts Of Mining On Vegetative Resources

The impact of mining will be minimal on any vegetative resources. The only vegetation resources other than food for livestock or wildlife would be a very few cedar fence posts or a very few small pinon trees that might be used for supports in the mine.

2.0 Mitigating Measures To Be Employed To Reduce Impacts On Vegetative Resources

No trees, shrubs or other plant life will be disturbed that is not essential for the mining operation. The revegetation will take place in stages when an area will have no further need to be used for the continued or future mining operation. Revegetation work will be started on a small plot of unneeded land. This will reduce both the size and the cost of the final reclamation work on the project as well as produce a good data base as to the success of the reseeding program as outlined.

3.0 Monitoring Procedures - Reference Area and Revegetation

A permanent one-acre Reference area is marked and a permanent post installed on two corners. A transect was run across this reference site giving data for future studies. (Appendix 3). The monitoring of the revegetation project will start as soon after the closing of the mine as the weather permits. The planting of grasses will be done in the fall and the seedlings will be planted the following spring. The

RANGE SITE II - Semi-Desert, Very Steep, Loam

TABLE 3-2A

Recommended Species for Revegetation After
Termination of Mining Within Range Site II

SPECIES	COMMON NAME	RATE OF APPLICATION in PLS
GRASSES		
Elymus salinus	Salina wildrye	1 #/acre
Agropyron inermis smithii	Western wheatgrass	5 #/acre
Oryzopsis hymenoides	Indian ricegrass	3 #/acre
FORBS		
Linum lewisii	Lewis flax	1 #/acre
Melilotis officinalis	Yellow sweetclover	2 #/acre
Sphaeralcea parviflora	Smallflower globemallow	1 #/acre
Penstemon palmeri	Palmer penstemon	1 #/acre
SHRUBS AND TREES		
Artemisia tridentata	Big sagebrush	200 /acre
Atriplex canescens	Fourwing Saltbush	200 /acre
Atriplex confertifolia	Shadscale	200 /acre
Ephedra viridis	Green mormontea	200 /acre
Ceratoides lanata	Winterfat	250 /acre

RANGE SITE III - Loamy bottom.

TABLE 3-2 B

Recommended Species for Revegetation After
Termination of Mining Within Range Site III

SPECIES	COMMON NAME	RATE OF APPLICATION in PLS
GRASSES		
	<i>Great Basin</i>	
Elymus cinereus	Salina wildrye	6 #/acre
Dryzopsis hymenoides	Indian ricegrass	3 #/acre
Sporobolus cryptandrus	Sand dropseed	0.15 #/acre
Agropyron dasystachyum	Thickspike wheat grass	4 #/acre
FORBS		
Linum lewisii	Lewis flax	1 #/acre
Sphaeralcea parviflora	Smallflower globemallow	1 #/acre
Melilotus officinalis	Yellow sweetclover	2 #/acre
SHRUBS AND TREES		
Artemisia tridentata	Big sagebrush	200 /acre
Atriplex canescens	Fourwing saltbush	200 /acre
Chrysothamnus nauseosus	Rubber rabbitbrush	200 /acre
Prunus virginiana	Chokecherry	200 /acre
Ceratoides lanata	Winterfat	600 /acre

UMC 784.13(B)(5)(iii) SEEDING AND TRANSPLANTING

Seeding will be accomplished by broadcasting or drilling methods and raked into the ground by hand, if needed. Each grass and forb Species will be planted at the indicated rate (Table 3-2A, 3-2B).

Containerized woody plants will be transplanted randomly among the different species at the indicated rate.

UMC 784.13(b)(5)(iv) MULCHING

Mulching or hydromulching shall use a liquid tackifier to ensure adherence of the mulch to the slope surface. Mulching rate will be 1 ton per acre when hay is used.

Level areas or areas where tractors are used, to crimp mulch, shall implement the same rate of 1 ton of hay per acre.

UMC 784.13(b)(5)(v) IRRIGATION

Seed beds shall be harrowed prior to seed planting. After seeding, hay mulch shall be crimped by use of disc harrow or by other means. This work will be done on the contour.

Transplants and tree planting will be done by hand.

It is anticipated that irrigation will not be needed at this time. However, if at the time of reclamation it is determined that irrigation is needed, an irrigation plan will be developed and approved in consultation with the DOGM.

UMC 784.13(b)(5)(vi) REVEGETATION MONITORING (UMC 817.116)

Revegetation monitoring shall determine if additional reseeding is necessary and what, if any, weed and pest control measures are needed to ensure successful revegetation. If reseeding is found to be needed the county agent and other State and Federal agencies will be contacted for advice on how to remedy the situation and to do any reseeding required.

The monitoring of the revegetation will occur in years 1,2,3,5,7, and 10 for cover and woody plant density. Years 1,2,3, for composition and woody plant survival and year 10 for production. Monitoring will use methodology approved by the Division at the time of reclamation.

Sampling will be done in the month of July.

UMC 784.13(b)(5)(vi) RECLAMATION MONITORING

The reclamation revegetation and reseeding will be monitored very closely, every 60 days, for the first growing season after planting. The second growing season the vegetation will be inventoried and evaluated bi-yearly to see if any reseeding is necessary. If no reseeding is needed then monitoring will be done, bi-yearly (in the summer season of each year).

In years: 2,3,5,7 and 10, if, during any of these monitorings, the vegetation is not up to expected standards, remedial action will be taken such as reseeding or other needs. To monitor the revegetation success of grasses and seedlings a transect will be set up for comparison to the Reference Area.

The survival rate of the plants and grasses will be noted the first summer and if the survival rate is too low the area will be reseeded as soon as possible.

The monitoring will be checked on year 3,5,7 and 10 prior to the release of the performance bond of the reclamation.

Refer to Chapter IX VEGETATION RESOURCES, for additional information and discussion.

UMC 784.14 PROTECTION OF HYDROLOGIC BALANCE (UMC 817.41)
(UMC 783.13)

The ephemeral watershed which drains the proposed Black Jack #1 Mine contributes very little water to Thompson Creek. Surface runoff patterns may be affected by surface cracking caused by subsidence. However, the no retreat mining plan under this permit should prevent any subsidence in the permit area. (see UMC 784.11(a)) paragraphs 1.3 and 1.5 of this chapter) Thompson Creek is below and to the east of the mine outcrops. Refer to UMC 784.20 of this Chapter. Therefore, Thompson Creek and the associated shallow aquifer system associated with Thompson Creek will not be subsided and the effect of mining on the overall hydrologic balance should be negligible.

Refer to Chapter VII-A and VII-B, HYDROLOGY, for additional hydrologic information.

UMC 784.14(a) PROJECTED IMPACTS OF MINING ON HYDROLOGIC BALANCE

Surface facilities for the proposed Black Jack #1 Mine will be located in a previously disturbed site formerly called Life Brothers Coal Company and West Pac Mine. Natural tributary flows, occurring from storm runoff, will be diverted around or across the proposed surface facilities (See chapter VII-B). Surface runoff from disturbed areas will be detained in sedimentation ponds prior to release. However, the area of surface disturbance controlled by sedimentation ponds will be small, about 1% of the small ephemeral watershed which drains the mine permit area. Because the coal seams dip to the northwest, away and down from the proposed portal, it is not expected that discharge of any water made in the mine will occur. Any discharges will be made in compliance with the NPDES permit program.

Taking into account the low mean annual runoff, diversion structures, and sedimentation structures, it is felt that the mining operation will have no significant impact on the surface water hydrologic system.

The discharge of water from within the mine, if any, should have no adverse impacts on the chemical quality of surface waters in the area. Although oil and grease concentrations may increase at the mine mouth, these constituents would be removed in

accordance to regulatory requirements prior to any discharge into adjacent streams. The high alkalinity and low acidity concentrations of surface streams in the area indicate that acid drainage problems should not occur from mining the area. *now?*
gradients not necessarily for concentrations

UMC 784.14(b)(1) CONTROL MEASURES TO MITIGATE IMPACTS
(UMC 784.16)

Runoff from all disturbed areas will be passed through sediment control facilities or protected from abnormal erosion. Any mine discharge will be monitored in accordance with NPDES permit standards, and State and Federal regulations. The effects of the mining operation on the surface water monitoring plan is described in Chapter VII of this report. In the event that monitoring shows that the surface water system is being adversely affected by mining activities, additional steps will be taken to rectify any impacts in cooperation with local, State and Federal regulatory agencies.

UMC 784.14(b)(3) MONITORING PROCEDURES TO MEASURE PROJECTED
(UMC 783.16) IMPACTS AND CONTROL

Surface water monitoring began in the fall of 1984 for baseline data collection at the locations shown on Figure 7-16. Stations were established to monitor water quality above and below where drainage waters from the mine permit area enter Thompson Creek.

The parameter list for laboratory analyses is presented on Table 7-3. Upon completion of the baseline data collection, the stations shown on Figure 7-16 will continue to be monitored quarterly (when accessible) throughout the operational phase of the mine. The quarterly monitoring during the mine operational phase will include flow and quality (parameters as in Table 7-3) to delineate seasonal variation and correlate discharge with changes in water quality. Future data may show that modifications of this monitoring schedule are justified. Any changes to the monitoring schedule (frequency or parameters) will be made only with the approval of Utah Division of Oil, Gas & Mining. Results of all water quality data will be submitted to that agency quarterly, with an annual summary.

Post-mining monitoring of surface water will continue at representative stations determined with the aid and approval of D.O.G.M. Water stations will be monitored biannually during high and low conditions. Monitoring will continue until the release of the reclamation bond or until an earlier date to be determined after appropriate consultation with local, State and Federal agencies.

Refer to Chapte VII-B HYDROLOGY, OVERLOAD FLOWS AND MONITORING, for additional hydrologic controls to be used at mine site.

UMC 784.15 POST MINING LAND USE (UMC 783.22(a))

The land use for the permit area has been for two purposes historically. These uses are: the grazing of the surface and the underground mining of the coal seams. The continuence of both of these land uses will remain during the mining operation. The land use will revert to grazing only after mining oiperations have stopped. *Watershed? Wildly? ↳ is no grazing now?*

1.0 Projected Impacts of Mining on Current or Future Land Use
(UMC 783.22(a))

The present disturbed areas of the property was done more than five years ago. The old Clark Mine (Reed Lance Mine) mined coal from the Chesterfield coal seam from 1946 to 1954, with the coal mainly used for local consumption. Later the "B" seam or Ballard Seam was opened up near the center of the 160 acres by West Pac Mines in 1978. There was a limited amount of coal produced before this company stopped production.

Grand County has a land use planning Ordinance #134 which includes the zone "G-1" in Grand County. For the area occupied by this permit.

The present use of the surface by the surface owner is to graze livestock in the spring, for a very limited time as the land is not very productive.

Checking with the U.S. Bureau of Land Management who manages the Federally owned land to the southwest, and partially to the north of the property, they stated that it would take 50 acres of

side canyon land to support one AMU (animal month unit), and the bottom land would take between five to ten acres for each AMU. The total grazing capability of the 160 acres would be 3 AMU for the side canyon, plus 1 AMU for the bottom land for a total of 4 AMU equivalent per month for the property.

2.0 Control Measures to Mitigate Impact (UMC 783.22(c))

The few acres that have been used in making access roads and yards for the mines would make very little difference in the amount of livestock grazing that could be utilized on the property. There is very little vegetation that would be of any economic value except perhaps cedar posts for fencing or perhaps some pinon pine for support timber in the mine.

The area lacks of good soils and has a very steep topography. The slope percentage ranges from 67% maximum down to an average of about 30%. Included in the slopes are the vertical sandstone cliffs with the intervening shale slopes. Every effort will be made to maintain the vegetation and soil condition so as to keep the livestock forage at a maximum during mining operation. No special measures other than safety will be implemented. The revegetation work will start as soon as an area is not needed.

When the coal mining operations on the property have terminated, the property will then be restored and reclaimed and then the primary use of the property will revert back to that of grazing livestock.

→ Range area (1) indicates not productive soil (unstable) = slope 1-8% in lower area

not applicable to soil survey - see Range area III description

→ see notes pp 37-28

and watershed protection

The present time the Patsantaras Land and Livestock Company of Grand Junction, Colorado, the owners of the surface rights on the NE1/4 Section 29, T.20S., R.20E., graze their livestock in the spring of the year on the property. There are grazing permits issued by the BLM on surrounding area owned by the U.S. Government. The rocky soil and outcrop conditions, the lack of rainfall and the steep slopes all restrict the productivity of plant life on the property.

3.0 Protection of Human Values

The small scale mine operation planned and the lack of any people living within five miles of the mining property should keep to a minimum any impact on humans other than the people employed at the mine operation or servicing the mine operation. The impact on these people will be a positive economic impact which is badly needed in the area due to the high rate of unemployment in the mineral industry in the area.

UMC 784.16 RECLAMATION PLAN - Ponds, Impoundments, Banks, Dams, and Embankments

The surface water runoff, sediment control measures, and sedimentation ponds are addressed in detail in Chapter VII-A; SEDIMENT CONTROL MEASURES.

UMC 784.16(a) General - There will be two (2) sedimentation ponds constructed on the permit area. These will be covered in detail in accord with UMC 817.46, in chapter VII-A and a Sedimentation

Pond Specification included as a separate item in 784.16(a)(1)(v) of this chapter, which is next.

There are no other water impoundments, or any processing waste bank, dam or embankment planned within the permit area.

The above referenced sedimentation pond designs are prepared under the direction of a registered professional engineer - refer to following drawings:

SP-1 SEDIMENTATION PONDS 1-A AND 2-A, DESIGN DETAILS.

SP-2 SEDIMENTATION POND 1-A, CROSS SECTION AND MISC. DETAILS.

SP-3 SEDIMENTATION POND 2-A, CROSS SECTIONS AND MISC. DETAILS.

UMC 784.16(a)(1)(v) SEDIMENTATION PONDS - GENERAL SPECIFICATIONS

These general specifications are included in this chapter, as an unnumbered insert, to follow this page.

UMC 784.17 PROTECTION OF PUBLIC PARKS AND HISTORIC PLACES

There are no public parks or historic places within the boundaries of this permit area.

Refer to Chapter V, HISTORICAL AND CULTURAL RESOURCES, for a more detailed discussion on these items.

1.0 Projected Impacts Of Mining On Human, Historical and Culture (UMC 783.12(b))

The Thompson-Sego area is an old coal mining-shipping center and has historically dealt with all the impacts that opening up a mining property might have on the community. There may be some impact on new employees, seeing the Indian writings in Thompson Canyon for the first time. However, this will be addressed in educational programs scheduled to be taught to the new employees.

2.0 Control Measures to Mitigate Impacts

There will be a mini-bus furnished for transporting the employees to the mine from Thompson. An education program to alert the employees as to the Federal and State laws on antiquities and defacing property will be undertaken.

UMC 784.18 RELOCATION OR USE OF PUBLIC ROADS

a) No coal mining will be located within 100 feet of the public road in Thompson Creek. In the NE corner of the property where the outcrop of the Palisade seam crosses the road the property barrier pillar keeps mining over 100 feet from the road.

b) The county road will not be relocated.

The use of the Public Road in Thompson Creek is addressed in Chapter 14.

UMC 784.19 UNDERGROUND DEVELOPMENT WASTE

The limited area in the mine site leaves little room for coal stockpiles or for accumulations and disposal of mine waste. Therefore, no coal storage or stock piles are planned in the mine permit area except for the 100 ton truck loading storage bin. All coal mined waste that contains No combustible material, such as roof falls fault crossing and incline tunnel material, that can be separated from the combustible coal material will be deposited within the mine in mined areas near or along the outcrop. Rock disposed of underground shall be in accord with regulation 30CFR 75.400 to 403.

All mine waste containing combustible coal fines, bony coal, combustible trash, broken timber, rockdust bags, line curtains, metal containers, plastics and all other combustible or metallic waste shall be removed from the mine. This material will be stored in the depression of existing catch basin No. 2, until a load is acumulataed that can be hauled off the property to a land fill.

The existing Catch basin No. 2, overflow will be blocked off so that any storm runoff that overflows the pond depression will flow down the bermed access road and into sedimentation pond No. 1A. Refer to Chapter XII, under regulations UMC 817.71-.74, 817.81-.88, 817.89, 817.91-.93, for additional discussion on mine waste disposal.

Permission has been obtained from Grand County to haul and dispose of garbage, waste and debris from the Black Jack #1 coal mine to the Grand County Sanitary Land Fill at Moab. (See letter dated September 30, 1985, in Appendix 3.)

UMC 784.20 SUBSIDENCE CONTROL PLAN

No subsidence is anticipated in the mine under the term of this permit since mining will be limited to entries and cross cuts only, and no retreat, or pulling of pillars, is planned to produce the tonnage desired. See UMC 784.11(a) paragraphs 1.3 and 1.5 of chapter III. However, the mining personnel of the Division of Oil, Gas and Mining have requested that subsidence be addressed. This has been done in Chapter XII, Subsidence and Other Regulations.

UMC 784.21 PROTECTION OF FISH AND WILDLIFE (UMC 783.20) (UMC 817.97)

There are no fish present in the ephemeral stream in Thompson Canyon and no protection is required. The limited wildlife found in the area will be protected as outlined in Chapter X.

1. Projected Impacts of Mining on Fish and Wildlife

There will be minor impacts on the wildlife during mining operation. The deer population that winters in the area will be effected by the traveling of vehicles on the roadway. The chukar population will probably move away from the human activity. The other vertebrates and birds will also be impacted to some degree with increased human activity in the area.

2. Mitigation Measures to be Employed to Protect Fish and Wildlife

The Black Jack #1 Mine is located in a steep rocky canyon with minimum of wildlife or domestic animals. Very little additional disturbances will be required during the projected life of the mine.

A summary of the guidelines that the company will follow are:

- a. All land clearings will be irregular in shape in contrast to straight edge.
- b. The company will set up an educational program for its employees at the mine that will teach the value of wildlife resources and to also teach what steps are necessary in order not to harass the wildlife.
- c. Teach employees not to bother young animals or female with young if they are encountered.
- d. Riparian or wetland habitats shall be maintained, any roads or road crossing will be constructed in a manner doing the least amount of damage.

- e. Revegetation will be in a manner and using the advice of State and Federal agencies as to seeds, plant fertilizers, etc., for replanting disturbed areas. This is addressed in detail in another part of this application. (Chapter IX).
- f. Pesticide, if used, shall be used with care so as not to cause problems with toxic poisoning of wildlife or birds. The type of pesticide used will be approved by the DOGM prior to the actual use.
- g. Powerlines if constructed will be constructed using guidelines approved by the DOGM for raptor protection.
- h. Coal haulers shall be especially careful in winter time to avoid any accidents with the deer population. This will be accomplished by reducing the speed of the coal trucks during the winter months.

3.0 Monitoring Procedures (UMC 783.20)

There are no plans to monitor the protection of fish and wildlife. The Division of Wildlife Resources will continue to monitor the area as they have in the past. If the Division should recommend a specific item to the company, the company will be happy to comply with the appropriate recommendations after consultation with the DWR & DOGM.

Refer to Chapter X - FISH AND WILDLIFE RESOURCES, for additional information and more detailed discussion.

UMC 784.22 WATER DIVERSION STRUCTURES

A diversion culvert will be constructed across the disturbed area. This culvert will carry the hillside runoff across the disturbed area and into the existing ephemeral drainage structure. This has been addressed in detail in Chapter VII-B, Undisturbed Area D.

UMC 784.24 TRANSPORTATION, ROADS, PARKING AREAS, RAILROAD SPURS

Approximately 5 1/2 miles of county road will be used in conjunction with the mining operation for transportation of coal away from the mine and for transportation of men, materials and mining equipment to and from the mine. Parking areas are located on the permit area. Railroad spurs and loading facilities are not applicable to this permit.

UMC 784.25 RETURN OF COAL PROCESSING WASTES TO ABANDONED UNDERGROUND WORKINGS

No coal processing wastes will be returned to the underground workings. See UMC 784.19, relative to mine waste disposal and to UMC 817.71-.74, 817.81-.88, 817.89, and 817.91-

UMC 784.26 PROTECTION OF AIR QUALITY (UMC 817.95)

All necessary methods will be used to keep the air quality within the permissible standards of the State and Federal agencies.

1.0 PROJECTED IMPACTS OF MINING OPERATION ON AIR QUALITY

The only impact on air quality of the mining operation will be the dust problem that vehicles and the coal trucks, hauling from the mine to the highway, will have. There may be a slight dust problem at the site where the conveyor system unloads the coal into the loading bin at the mine portal for later transfer to the haulage trucks. This will be reduced by using water spray at the critical spots.

UMC 784.26(a) Air Quality Monitoring Plans

There are no plans to monitor the air quality at this time.

UMC 784.26(b) Measures to be Employed to control Air Pollutants

The use of a dust suppressant on the roads, water or other approved chemicals will stop any dust problem that might arise. Applications requested by Grand County will keep the dust on the road and the mine site under control.

Refer to Chapter XI CLIMATOLOGY AND AIR QUALITY, for additional information and discussion.

UMC 817.11 SIGNS AND MARKERS

New Tech Mining Corp. will construct, post and maintain, for the duration of this permit, all signs and markers required under this part. Similar signs shall be uniform in design with a

minimum 2" lettering height to be used on all signs for easy reading.

*Buffer
Sign*

UMC 817.11(a)(3) Materials

Signs will be on 1/2 inch CDX plywood. The plywood will be painted two (2) coats of white enamel and the lettering will be black enamel. Posts will be a 2 1/2 inch galvanized pipe with 18 inches of bituminous coating on bottom of post and the top shall be flush with the top of the sign. signs less than 12 inches in height shall be fastened with two (2) 3/8 inch dia. carriage bolts, set at 1 1/2 inch from edge of sign. Sign boards over 12 inches height shall be fastened with three (3) 3/8 inch dia. carriage bolts.

UMC 817.11(b) Duration of Maintenance

Signs and markers will be maintained by the mining co. in posted and readable conditions throughout the permit term and until release of all bonds.

UMC 817.11(c) Mine and Permit Identification Signs:

Mine and permit identification signs shall contain the following format

NEW TECH MINING CORP.
59 1/2 South Main Street
MOAB, UTAH 84532
(801) 259-8961
MSHA Permit # 42-01172
DOGM permit # ACT/O19/004

There will be a 3 inch clear border on top and bottom with 2 inches clear on each end. The space between lines of lettering shall be 2 inches.

UMC 817.11(d) Perimeter Markers - Painted roof bolts will be used as perimeter markers around the perimeters of the disturbed area. These will be placed so adjoining bolts can be visually identified. Posts will be painted green with top 1 foot painted yellow.

UMC 817.11(f) Blasting Signs:

It is anticipated there will be no blasting of surface features or land except possibly during the regrading of existing roads, yards and benches. The use of signs and flags in this section and other safety provisions will be used. Refer to Chapter XII, regulations UMC 817.61-.68, Use of Explosives, for additional discussion.

UMC 817.11(g) Topsoil Markers:

The format will read "TOPSOIL STORAGE" and "SUBSTITUTE SOIL" and will use 2 inch high letters with 2 inches clear at top and bottom and at ends.

REFERENCES

- BLM, 1979 - Physical Resource Studies, Manual
4412 Section 14 Soil-Vegetation
Inventory Method; 8/10/79.
- SCS, 1976 - National Range Handbook, Soil Conservation
Services, July 13, 1976.

APPENDIX 3

For Chapters III and III-A

Table of Contents

1. Letter August 26, 1983, Coal Mine Safety and Health District 9. Re: Black Jack #1 Mine, I.D. No. 42-01172 Ventilation System and Methane and Dust Control.

November 9, 1983, Coal Mine Safety and Health District 9. Re: Black Jack #1 Mine, I.D. No. 42-01172 Ventilation System and Methane and Dust Control

With Attachment of letter - September 30, 1983, and copy of revised Ventilation and Methane and Dust Control Plan.
2. Letter March 20, 1985 Coal Mine Safety and Health District 9 Re: Black Jack #1 Mine, I. D. No. 42-01172 Roof Control Plan

June 3, 1983, Coal Mine Safety and Health District 9. Re: Roof Control Plan, Black Jack #1 Mine, I. D. No. 42-01172.

With Attachment of Roof Control Plan
3. Letter June 13, 1983, Thompson Water Improvement District, giving permission to use water.
4. Letter August 27, 1985, Grand County Granting permission to install sump in county right-of-way.
5. Letter September 28, 1985, THOMPSON MOTEL Thompson, Utah. Permission to locate Shower Type Trailer into a trailer park.
6. Letter September 30, 1985, Grand County. Permission to use Grand County Sanitary Land Fill at Moab, Utah.
7. Letters (3 each) JBOD CONSTRUCTION Schedule of Equipment & Labor Rates
8. Table 3-3 Reclamation Schedule - last page

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3-2	Typical Yard Cross Section for Reclamation	
3-3	Typical Pad	
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Mine Plan C Seam	3-7A
Mine Plan P Seam	3-8A
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Coal Mine Safety and Health
District 9

August 26, 1983

L. R. (Tex) Edmisten
New-Tech Mining Corporation
Western Plaza Mall, Suite 3
59½ S. Main
Moab, UT 84532

RECEIVED
FEB 07 1986

DIVISION OF
OIL, GAS & MINING

Re: Black Jack #1 Mine
ID No. 42-01172
Ventilation System and Methane
and Dust Control Plan

Dear Mr. Edmisten:

A review of the ventilation system and methane and dust control plan dated August 15, 1983, for the subject mine has been completed by MSHA in accordance with the provisions of Section 75.316, 30 CFR 75. The review indicates that revisions to the plan are necessary to formulate a plan suitable to the present conditions and mining systems of the mine and to insure the health and safety of the miners. The following items should be revised in or added to the plan:

1. You may eliminate all of page 3, 4, and 5, up to "Methane and Dust Control Plan", and replace it with: "All main fan installations shall meet or exceed the criteria in Section 75.300-2 and 75.300,3, 30 CFR, unless variance is granted by the District Manager".
2. When you purchase your main fan, you can either put the specifications in the plan or on the certified mine map.
3. When you purchase your continuous miner and loading machine, please complete the attached MMU sheets and submit them for approval.
4. State in the plan, "Permanent stoppings shall be erected between the intake and return aircourse and shall be maintained to and including the third connecting crosscut outby the faces of the entries. Whenever the third connecting crosscut is broken through, work shall be started on building the stopping as soon as possible and shall be continued in a reasonable and diligent manner until completed. Similarly, whenever a belt move is completed, temporary brattice shall be installed immediately and work shall be started on building the permanent stoppings as soon as possible and shall be continued in a diligent manner until completed".
5. Please differentiate between long-term stoppings (greater than 2 year life) and short term stoppings (less than 2 year life). Long term stoppings must be built with cinder/concrete blocks and all joints mortared, or layed dry and coated on both sides with any approved construction type sealant, 1/8" thick.

Short term stoppings can be built with cinder/concrete blocks; 1) mortared, 2) layed dry and coated on one side with 1/8" constructin type sealant, 3) layed dry and coated on both sides with a non-construction type sealant, 1/8" thick, 4) metal, (Kennedy type) stoppings with the perimeter coated with a sealant to prevent air leakage.

6. Include the minimum quantity of air reaching the face and the maximum distance the line curtain is maintained for idle and abandoned faces.

7. As soon as final mining plans are developed, a bleeder system/layout must be submitted and approved.

8. If roof bolting is done, indicate the minimum quantity of air to be maintained over the bolting machine during operation and the distance the line curtain is maintained from the machine or working face. Also, indicate the type of dust collection system used on the roof bolter (vacuum or wet head).

9. Enclosed are "Line Diagram of the Mine" and "Selection Sheet for Designated Areas" form which must be completed after the conveyor belt system is installed.

10. Include in the plan:

- a) Any corrective actions taken that result in the abatement of a citation or order for high respirable dust concentrations shall be incorporated into the ventilation system and methane and dust control plan.
- b) In accordance with Section 70.201(d), a record shall be kept of all corrective actions taken to obtain compliance and this record shall be made available to MSHA. When changes are made in the form "Dust Control Practices in the Face Area" for a particular MMU, an entire new form should be submitted. Note, these changes should be given to the area MSHA inspector although addressed to the District Manager, and they will only be forwarded by the inspector if compliance is obtained.

11. After the mine has been opened and surveyed, please submit three copies of a certified mine map as required by 30 CFR, 75.1200.

If assistance is needed in developing an acceptable plan, please contact Bill Knepp at this office. Phone 303-234-6298.

Sincerely yours,


John W. Barton
District Manager

JWB:KNEPP:rib:6298

cc: Price SDO (1)
Price FO (2)

DYPK

Coal Mine Safety and Health
District 9

V.P.

November 9, 1983

yield 11/15/83

L.W. Edmisten
New-Tech Mining Corporation
Western Plaza Mall, Suite 3
59½ South Main
Moab, UT 84532

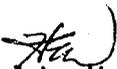
Re: Black Jack #1 Mine
I.D. No. 42-01172
Ventilation System and Methane
and Dust Control Plan

Dear Mr. Edmisten:

The ventilation system and methane and dust control plan dated October 3, 1983 has been approved in accordance with Section 75.316, 30 CFR. The plan is subject to revision at any time and shall be reviewed by the operator and MSHA at least once every six months. Before any changes are made in the approved ventilation system, they shall be submitted to and be approved by the District Manager prior to implementation.

This plan supersedes any previously approved plans and a copy of this plan shall be made available to the miners.

Sincerely,


John W. Barton
District Manager

JWIDOWS:df:11/9/83

cc: Price SDM (1)
Price FO (2)

Western Plaza Mall, Suite 3
59 1/2 South Main
Moab, Utah 84532
Telephone (801) 259-8961

September 30, 1983

Knepp

John Barton
District Manager
MSHA, District 9
P.O. Box 25367
Denver, Colorado 80225

RE: Ventilation and Methane
and Dust Control Plan
Black Jack #1 Mine
Thompson, Utah

Dear Mr. Barton,

In response to your letter dated August 26, 1983, please find enclosed a revised Ventilation and Methane and Dust Control Plan for the Black Jack #1 Mine, located in Thompson Canyon, Utah, for New-Tech Mining Corporation.

If you need any further information, please let me know.

Thank you,

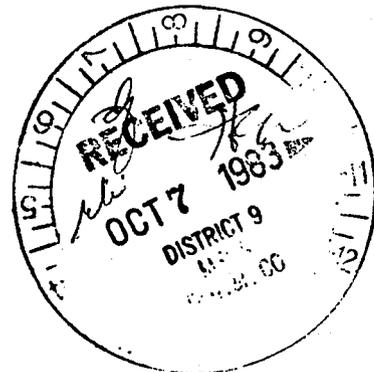
L.R. (Tex) Edmisten

L.R. (Tex) Edmisten
New-Tech Mining Corporation

TE/vk

cc: Tony Gabossi

Enclosure



Western Plaza Mall, Suite 3
59½ South Main
Moab, Utah 84532
Telephone (801) 259-8961

October 3, 1983

John Barton
District Manager
MSHA, District 9
P.O. Box 25367
Denver, Colorado 80225

Dear Mr. Barton,

Please find attached a map of the mine showing approved exploration area. The Division of Oil, Gas, & Mining has approved the green shaded area for exploration through faults, this coincides with our original plan submitted to MSHA.

If you have any comments or need additional information, please let me know.

Sincerely,

L.R. (Tex) Edmisten

L.R. (Tex) Edmisten
New-Tech Mining Corporation

TE/vk

cc: Tony Gabossi

Temporary-Portable
Fan Installation
Point A

Intake

To Be Mined

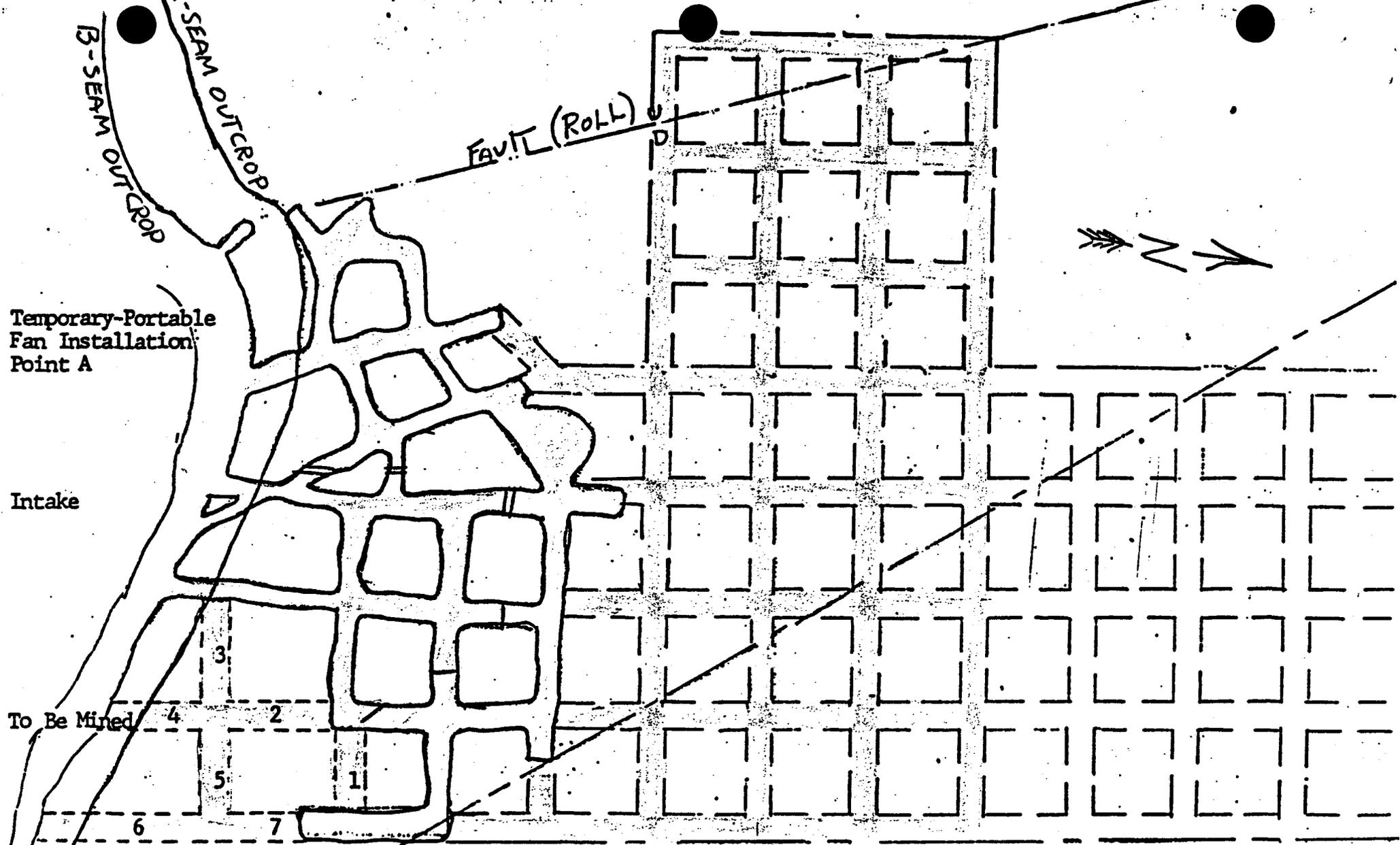
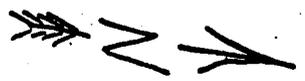
Point B
Main Fan Installation

KNOWN FAULT

FAULT (ROLL)

C-SEAM OUTCROP

B-SEAM OUTCROP



-  Area to be mined during exploration
-  Intake Air
-  Return Air
(Temporary Stoppings will be placed to get Maximum Air Circulation)
-  Permanent Stoppings already in place
-  Proposed Temporary Stoppings

VENTILATION SYSTEM AND
METHANE AND DUST CONTROL PLAN

BLACK JACK #1 MINE
NEW-TECH MINING CORPORATION
THOMPSON CANYON, UTAH

GENERAL:

Company Name: NEW-TECH MINING CORPORATION
Mine Name: BLACK JACK #1 MINE
ADDRESS: 59½ SOUTH MAIN, SUITE 3
MOAB, UTAH 84532
Telephone : (801) 259-8961
Identification Number: 42-01172
Operator's Name: JACK A. LAWRENCE
Operator's Title: President
Operator's Telephone No.: (801) 259-8531

Life of mine is greater than one year.

Number of Employees:	Surface	3
	Underground	12
	Total	15

Type of Face Equipment: Continuous Miner
Shuttle Cars
Roof Bolter
Undercutter
Face Drill
Loading Machine

MAIN FAN INSTALLATION

1. All main fan installations shall meet or exceed the criteria in section 75.300-2 and 75.300-3 30 CER, unless variance is granted by the District Manager.

METHANE AND DUST CONTROL PLAN

1. The following is dust control practices at:
 - a. Transfer points - No belt transfer points are shown on the plan. Future transfer points will have one or more water cone sprays to minimize dust.
 - b. Loading points - Belt loading points will be equipped with one or more cone sprays to minimize float dust.
 - c. Underground crusher - A Long Airdox Roscoe feeder breaker is planned ahead of the belt loading point. The feeder breaker will be equipped with two sprays at the breaker.
 - d. Underground dumps - No underground coal dumps are in this plan.
 - e. Along belt and track haulage systems - Accumulation of float dust along the belt lines will not be permitted. No track haulage is planned.
 - f. Along shuttle car runways - No accumulation of float dust or fine coal will be permitted along shuttle car runways and the floor will be kept damp. The floor of the mine is sandstone.
 - g. All other problem areas - No accumulation of float dust will be permitted in problem areas. Return air courses will be free of float dust and trickle dusters will be used in face areas.
 - h. Rock dusting in outby areas will be done with MSA Bantan type duster or equivalent.
2. All dust and methane control practices in the face areas shall include:

- a. The maximum distance the line curtain is installed from the area of deepest penetration to which any portion of the face has been advanced shall be 12 feet. Box cuts will be on the line curtain side of the entry. Maximum depth of the box cut will be six feet before the face is squared.
- b. The minimum quantity of air reaching each working face from which coal is cut, mined or loaded , will be 3000 CFM.
- c. The minimum mean entry air velocity in all working places where coal is cut, mined, or loaded, will be 60 fpm.
- d. The minimum quantity of air reaching the last open crosscut in any pair or set of entries or rooms and the minimum quantity of air reaching the intake end of a pillar line will be 9000 cfm.
- e. The dust suppression on the continuous miner is not known at this time.
- f. The dust suppression on the loading machine is not known at this time.
- g. No wetting agent is planned at this time.
- h. Any corrective actions taken that result in the abatement of a citation or order for high respirable dust concentrations shall be incorporated into the ventilation system and methane and dust control plan.
- i. In accordance with Section 70.201(d), a record shall be kept of all corrective actions taken to obtain compliance and this record shall be made available to MSHA. When changes are made in the form "Dust Control Practices in the Face Area" for a particular MMU, an entire new form should be submitted. Note, these changes should be given to the area MSHA inspector although addressed to the District Manager, and they will only be forwarded by the inspector if compliance is obtained.

3. Bleeder entries and pillar system ventilation is not included at this time.
4. The methane content in any return air course other than an air course returning the split of air from a working section (as provided in Sections 75.309 and 75.310) shall not exceed 2.0 volume per centum. The methane content in the air in active workings shall be less than 1.0 volume per centum.
5. All methane examinations will be made within 5 feet of permanent or temporary roof support.
6. No seals are proposed at this time.
7. No pillared or abandoned areas will be ventilated at this time.

SECTION AND FACE VENTILATION SYSTEM

1. Section and face ventilation is shown on drawing attached.
2. The method used to ventilate the belt haulage entry is shown on drawing attached.
3. Adjacent development section planned at this time will be conventional mining section.
4. No surge pile of coal behind the face loading equipment will be allowed.
5. The minimum quantity of air reaching idle or abandoned faces will be 3000 cfm. Line curtain will be maintained to 5 feet from face.
6. Roof bolting will be done on a spot bolting basis, minimum quantity of air passing over the bolter will be 9000 cfm, brattice line will be maintained to 5 feet of machine or face, the dust collection system is not known at this time.

STOPPING MATERIAL AND PRACTICES

1. All ventilating devices such as stoppings, overcasts, undercasts, and shaft partitions shall be of substantial and incombustible construction, installed in a workman

like manner and maintained in a condition to serve the purpose for which they were intended, and any stopping leaking air excessively shall be repaired immediately.

PERMANENT STOPPINGS

1. "Permanent stoppings shall be erected between the intake and return aircourse and shall be maintained to and including the third connecting crosscut outby the faces of the entries. Whenever the third conecting crosscut is broken through, work shall be started on building the stopping as soon as possible and shall be continued in a reasonable diligent manner until completed. Similarly, whenever a belt move is completed, temporary brattice shall be installed immediately and work shall be started on building the permanent stoppings as soon as possible and shall be continued in a diligent manner until completed". Steel man-doors are located at intervals of 400' or less. Wooden or other flammable material used as chinking or as a construction support that remains part of the stopping shall be treated with a USBM-accepted fire retardant or coated with a fireproof sealant.

TEMPORARY STOPPINGS

1. Temporary stoppings are constructed of approved brattice material, posts, and two-by-fours or of 12' wide extensible metal pans. Wooden or other flammable material used as chinking or as a construction support that remains part of the stopping shall be treated with a USBM-accepted fire retardant or coated with a fireproof sealant.

TYPE OF STOPPING USED

1. The following is submitted for the type of stopping used:
 - a. The material used in longterm stopping construction:
 - (1) Concrete blocks - hollow - 8"x8"x16"

- (2) Packaged mortar mix and water
- b. Stopping construction will be vertical staggered course construction.
- c. Short term stoppings will be constructed of concrete blocks or metal (Kennedy Type) pans.
- d. Permanent stoppings between intake and return air-courses and main line belt separation stoppings will be long-term stoppings with life greater than two (2) years.
- e. Belt separation stoppings in sections are expected to be short-term stoppings with life expectancy of two (2) years or less.

DIESEL EQUIPMENT

1. No diesel equipment is planned at this time.

AUXILIARY FANS AND MACHINE-MOUNTED DIFFUSERS UNDERGROUND

1. No underground auxiliary fans or diffusers are planned at this time.

MINE MAPS

The enclosed map is on a scale of 1"=100' and 1"=50':

1. The mine map has coded symbols and legend.
2. Limits of the property are shown. All present workings are proposed.
3. No oil or gas wells are on or near the property.
4. All known underground workings adjacent to, above, or below the line have been mapped and are shown.
5. No data available on Main Fan at this time.
6. All surface openings are shown as proposed including direction of airflow. Air quantity is unknown.
7. The only known fault is shown.
8. Mining projections for the first year are shown.
9. Detailed projections for the section is shown.
10. Underground workings with the proposed active section are shown.

11. The locations of stoppings, overcasts, air-lock doors, and man-doors are shown.
12. Measured volumes of air are not known.
13. Air velocity is not known.
14. Restricted location air velocities are not known.
15. There are no abandoned areas in the B seam.
16. All proposed locations are shown.
17. No proposed seals are shown.
18. Contour lines of coal seam will be shown when developed.
19. Escapeways will be designated by symbols when developed. Blue for intake escapeway and red for return escapeway.

L.R. Fox Edmister
COMPANY OFFICIAL

Mine MANAGER
TITLE

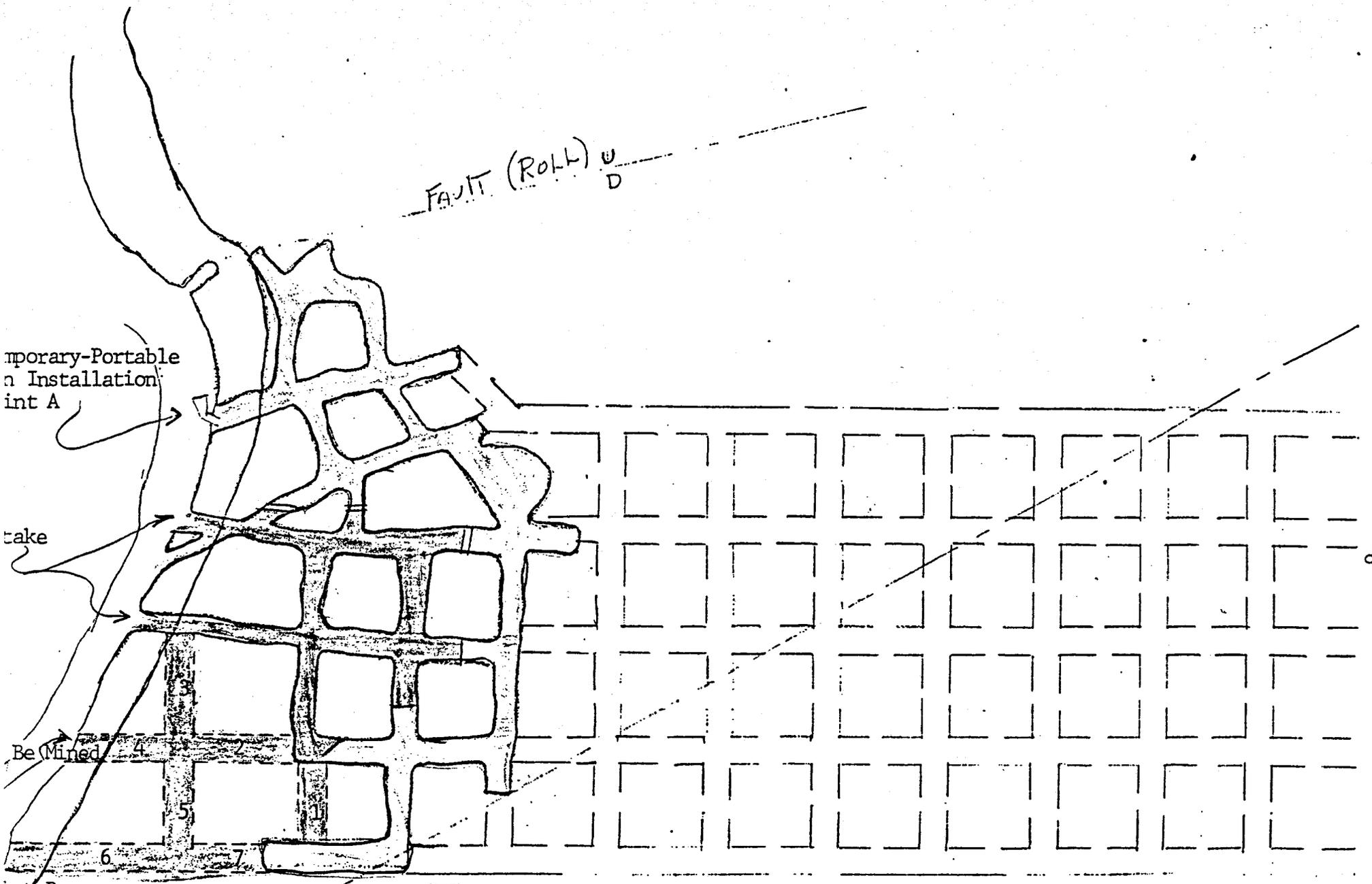
NEW-TECH MINING CORPORATION
59½ South Main, Suite 3
MOAB, UTAH 84532

10/4/83
DATE

APPROVED BY:

DATE

TITLE



FAULT (Roll) U/D

Temporary-Portable
Fan Installation
Int A

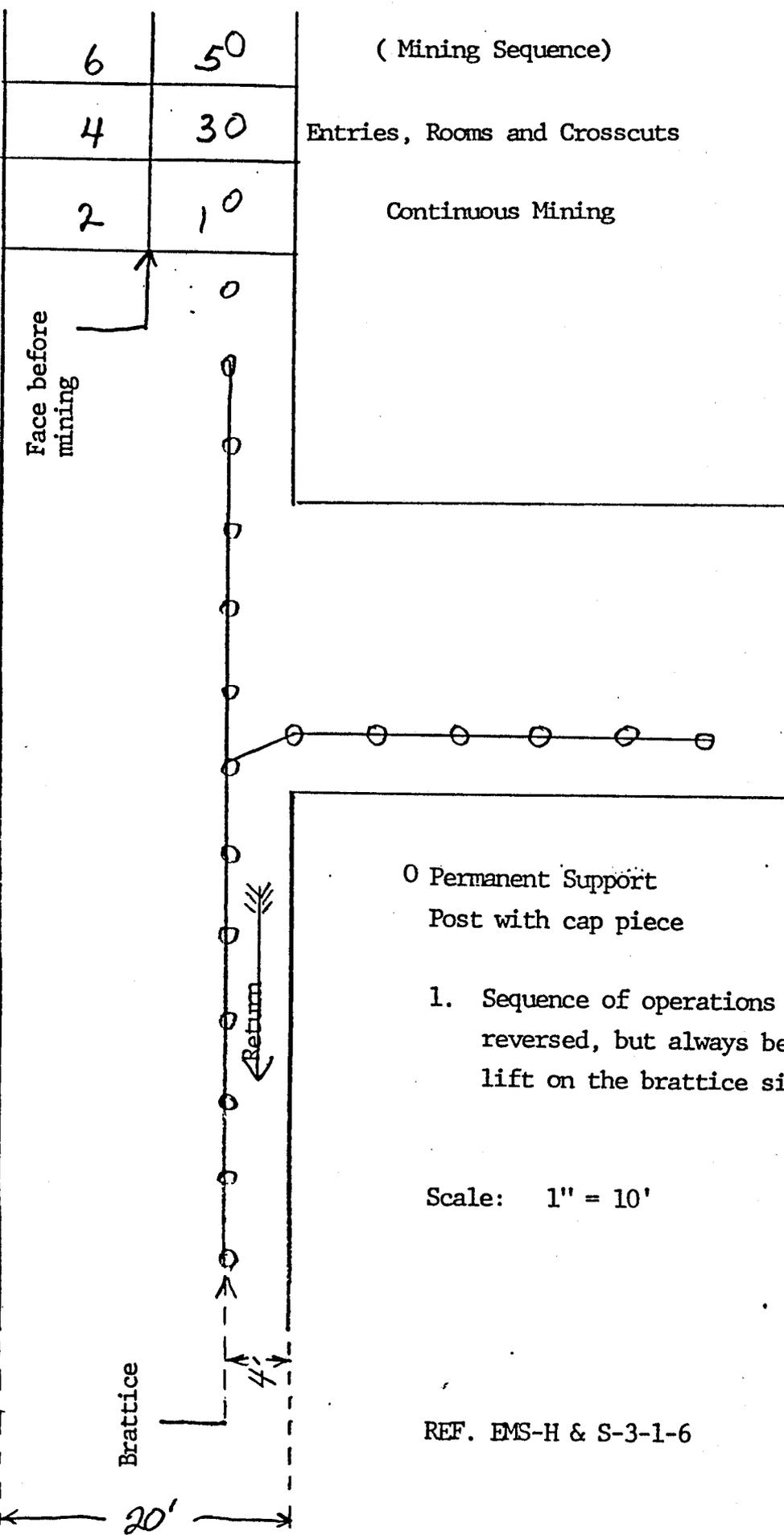
Intake

Area to be Mined

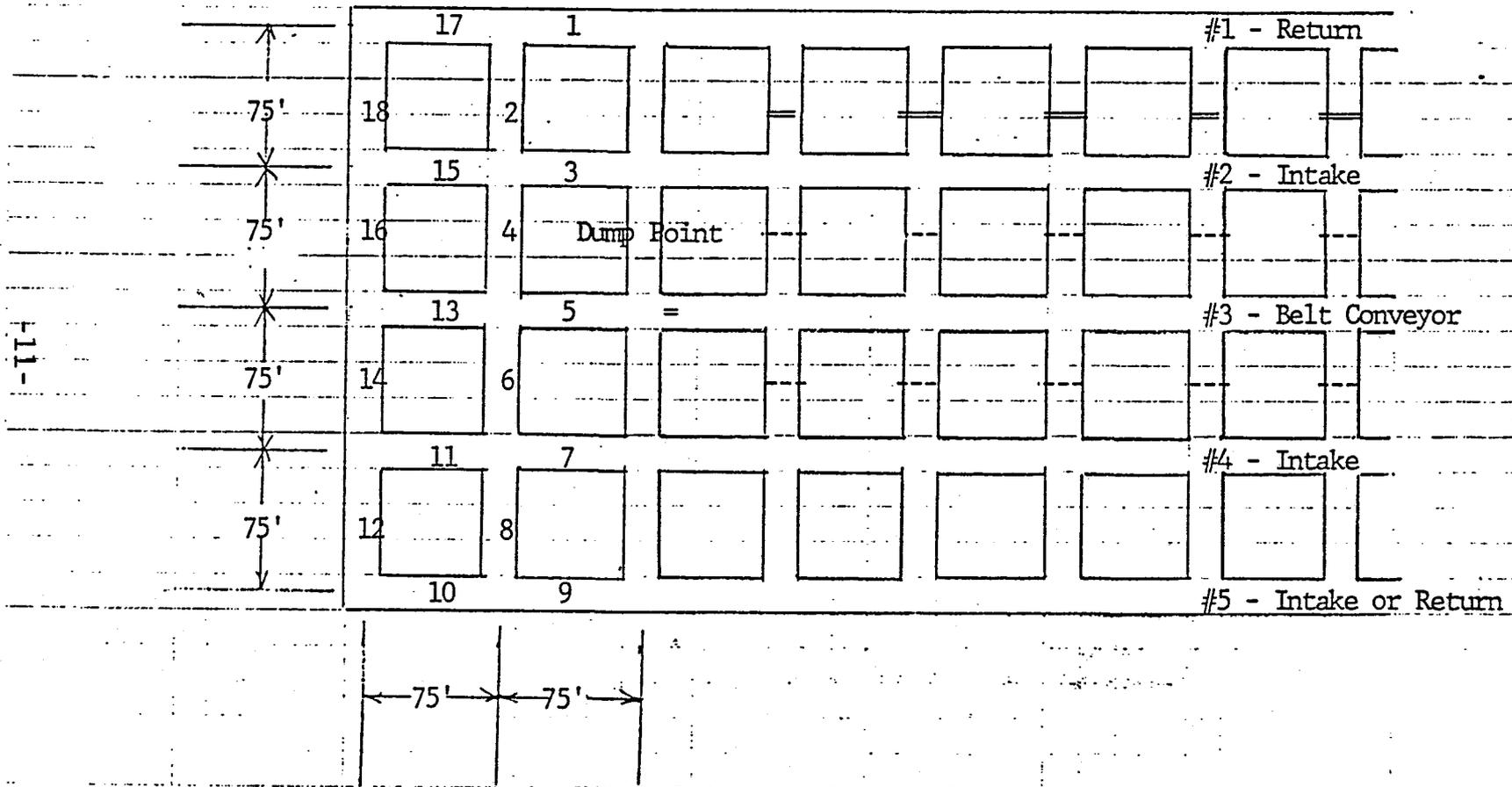
Int B
In Fan Installation

KNOWN FAULT

-  Area to be mined with Temporary Fan
-  Intake Air
-  Return Air
(Temporary Stoppings will be placed to get Maximum Air Circulation)
-  Permanent Stoppings already in place
-  Proposed Temporary Stoppings



← Direction of Advance



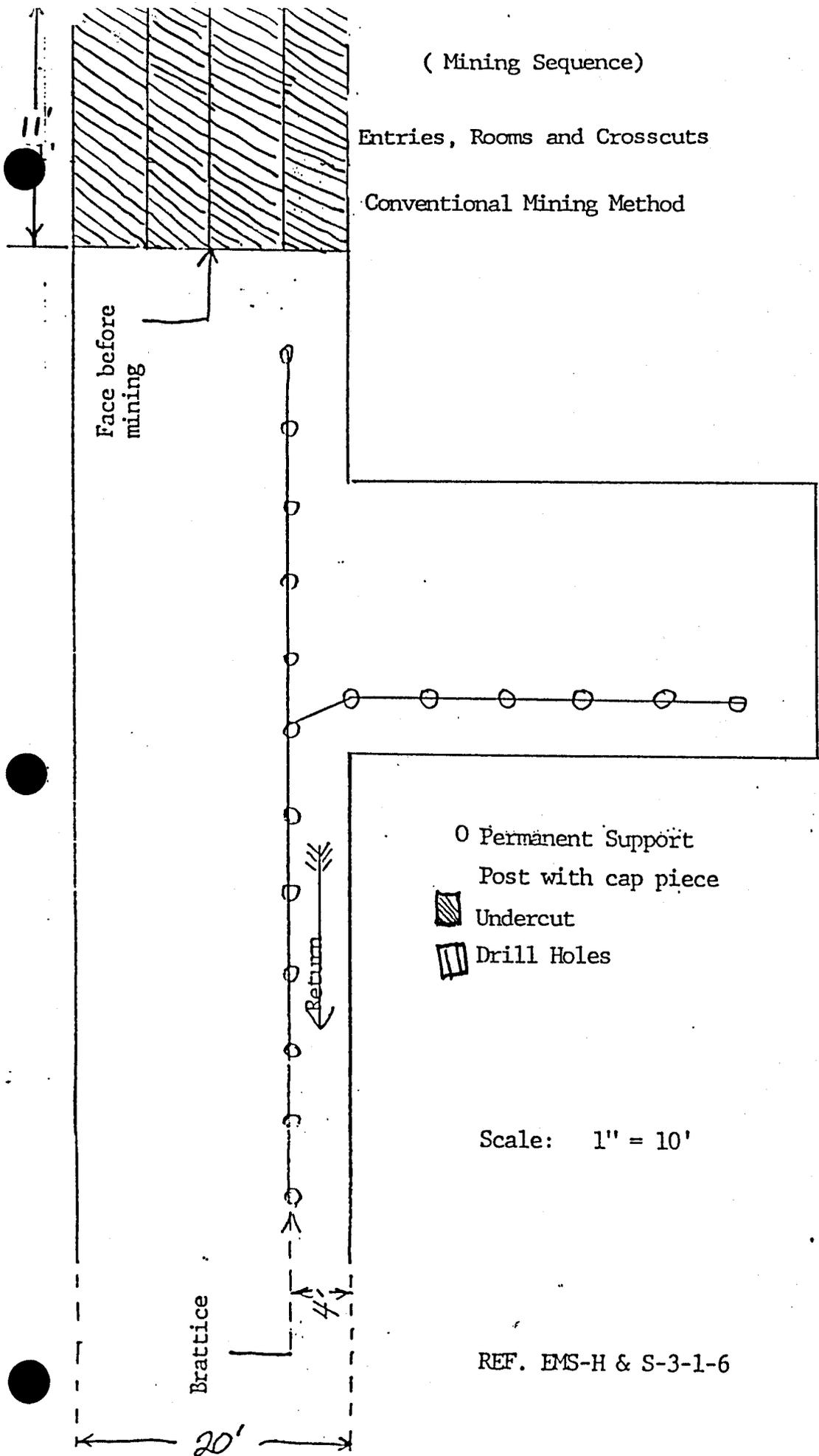
Typical Mining Sequence 1 thru 18
 Coal Height 48" Average
 Entry and Crosscut Width : 19' - 20'
 Centerline Distances: As Shown

New-Tech Mining Corporation
 Moab, Utah
 Entry Development Sequence
 BlackJack #1 Mine

(Mining Sequence)

Entries, Rooms and Crosscuts

Conventional Mining Method



Face before mining

Brattice

20'

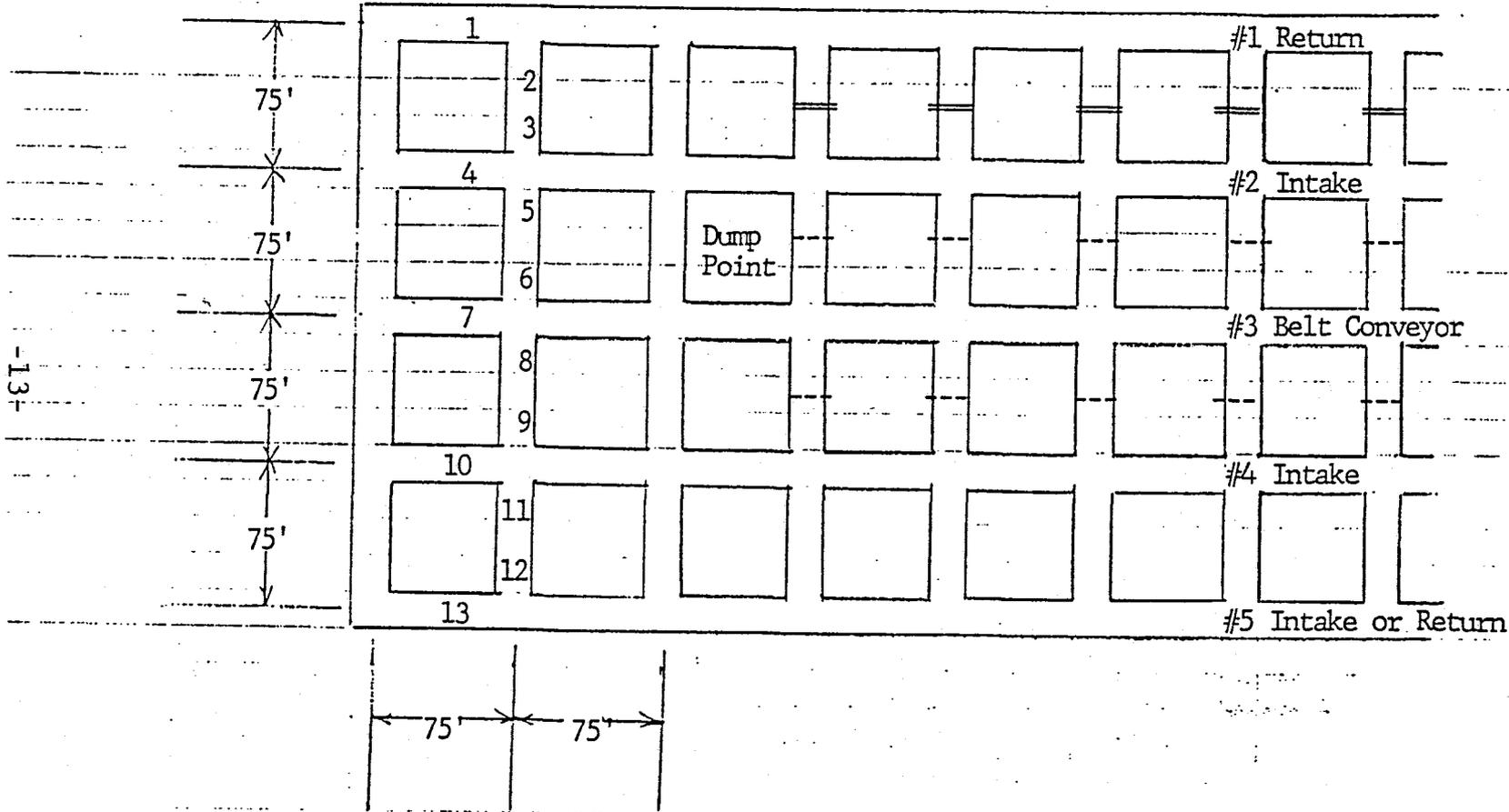
Return

- Permanent Support
- Post with cap piece
- ▨ Undercut
- ▤ Drill Holes

Scale: 1" = 10'

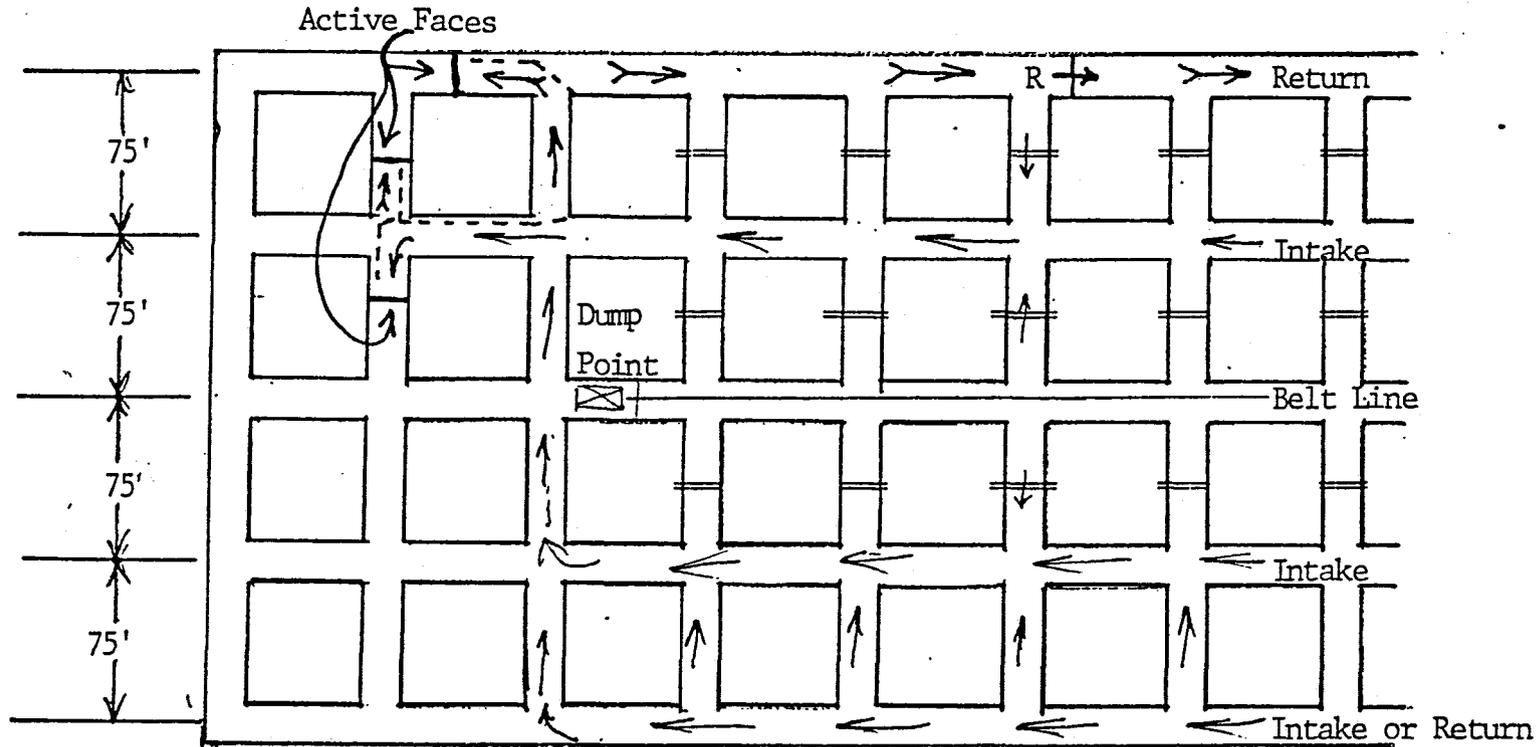
REF. EMS-H & S-3-1-6

← Direction of Advance



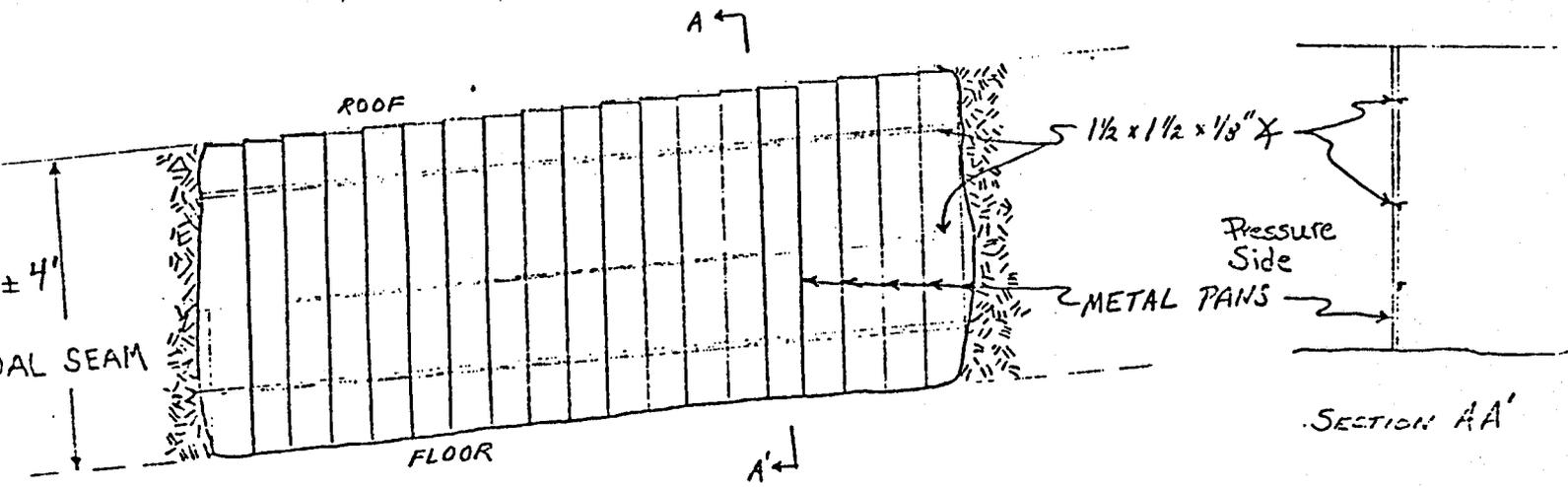
Typical Mining Sequence Conventional 1 thru 13
Coal Height 48" Average
Entry and Crosscut Width: 19 - 20 feet
Centerline Distances: As Shown

← Direction of Advance

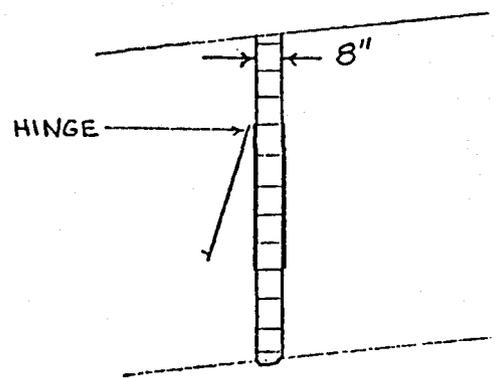
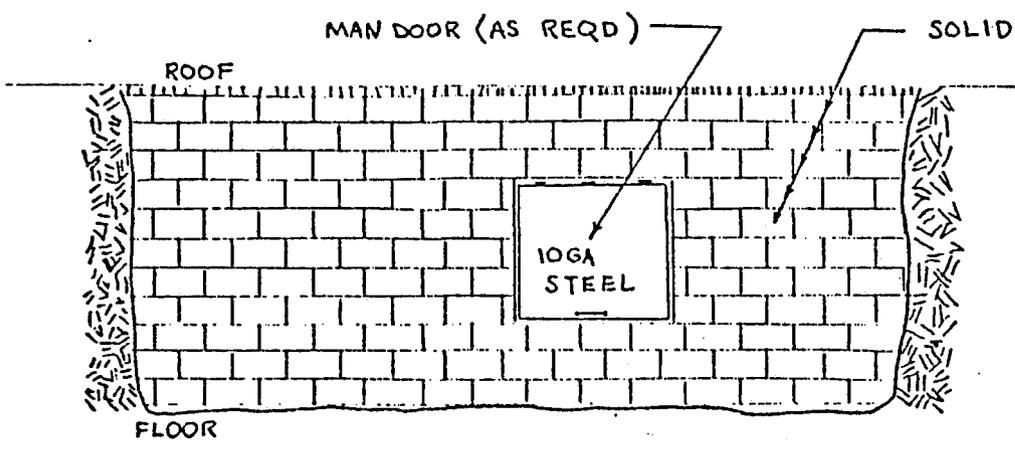
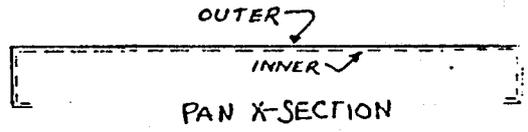


Typical Ventilation Map for Sections and Main Entries

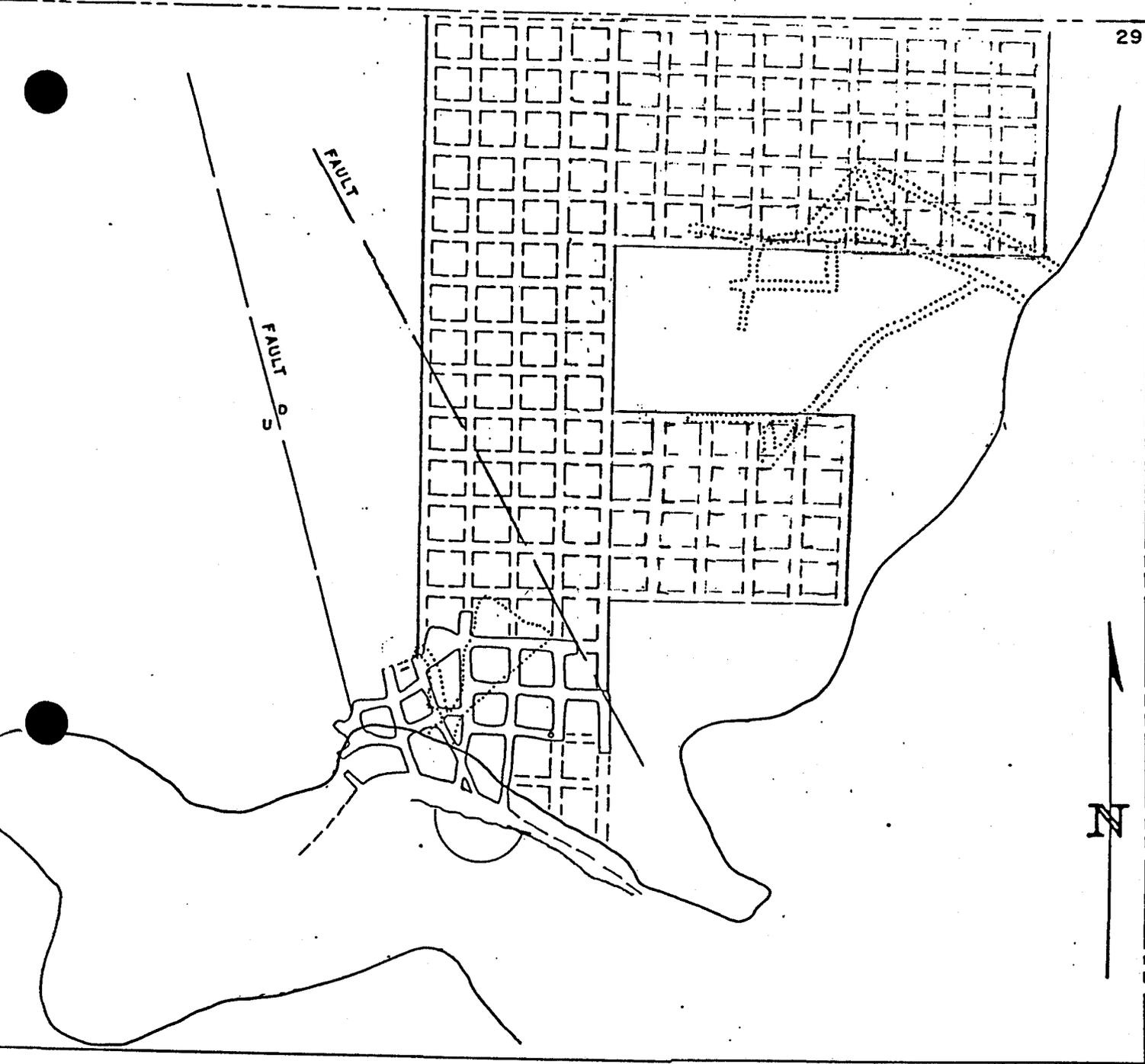
- R+ Regulator
- = Stoppings
- ⊕ Stopping With Door
- Check Curtain
- Brattice Line
- ← Intake
- Return



METAL STOPPING (TYP)



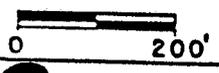
BLOCK STOPPING (TYP) WITH DOOR



-  FAULT
-  OUTCROP "c" COAL SEAM
-  OLD "c" SEAM MINE WORKINGS
-  PIPE FROM SURFACE
-  PRESENT MINE WORKINGS
-  PROPOSED MINE PLAN

NEW-TECH MINING
 THOMPSON CANYON COAL MINE
 EXPLORATION & MINING PLAN
 FOR
BALLARD COAL SEAM (B)

SCALE 1:1200



H.W.MERRELL 3/83

PLATE 2

RECEIVED

FEB 07 1986

DIVISION OF
OIL, GAS & MINING

Coal Mine Safety & Health
District 9

SEARCHED	INDEXED
SERIALIZED	FILED
MILB	3-21-1985

March 20, 1985

Mr. L. R. Edmisten
New Tech Mining Inc.
59-1/2 South Main, Suite 3
Moab, UT 84532

Re: Blackjack No. 1 Mine
ID No. 42-01172
Roof Control Plan

Dear Mr. Edmisten:

The presently approved roof control plan for the subject mine has been reviewed by MSHA personnel in accordance with Section 75.200, 30 CFR. Since the plan appears to be adequate, it shall remain in effect for another six month period.

Sincerely,

/s/ William A. Holgate

John W. Barton
District Manager

EJH

Coal Mine Safety & Health
District 9

June 3, 1983

Mr. L.R. Edmisten
New-Tech Mining Corporation
Western Plaza Mall, Suite 3
59½ south Main
Moab, UT 84532

Re: Roof Control Plan
Blackjack No. 1 Mine
I.D. No. 42-01172

Dear Mr. Edmisten:

The roof control plan received May 31, 1983, has been reviewed by MSHA personnel and cannot be approved for the following reasons:

1. Until mining has advanced to a point where an evaluation can be made by MSHA personnel to determine prevailing roof conditions, it will be necessary to use a mining cycle with a 20 foot cut and install full overhead support (i.e. roof bolts, crossbars, trusses, etc.) on no greater than 5 foot centers. Also, it is necessary to state what will be done to protect miners at the portal from possible rock falls during the development phase.

Sincerely,


John W. Barton
District Manager

MSHA:JSMiller:jft
cc: Price Subdistrict Manager
Price Field Office

Coal Mine Safety & Health
District 9

mlb
1-4
1985

January 4, 1985

MEMORANDUM FOR: Tony Gabossi
CMI Supervisor

THROUGH: J. L. Bishop
Subdistrict Manager

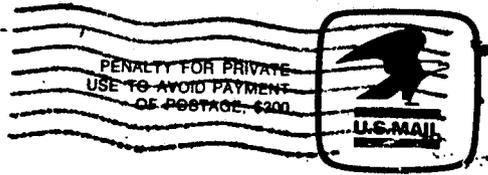
FROM: JOHN W. BARTON */s/ William A. Holgate*
District Manager

SUBJECT: Six Month Review of Roof Control Plan

The Blackjack #1, ID No. 42-01172, roof control plan is currently due for a six month review. Please submit any comments you may have concerning the roof and rib conditions within the mine. Your comments or those of any of your inspectors will be utilized to complete the review of the plan. A written response is requested by January 23, 1985.

No written response
Phone response 2-26-1985 by T.G.
Plan O K

U.S. POSTAL SERVICE
OFFICIAL BUSINESS



Postage Due (25¢)

U.S. Dept. of Labor
Mine Safety & Health Adm.
Office of the Adm.
Coal Mine Safety & Health
PO Box 25367
Denver Colorado 80225

ENTER MAILER'S ACCOUNT NO. HERE:

(All numbers, dates and letters)

THIS CARD IS FURNISHED:

For address correction, as requested.
(Your mailing piece was forwarded)

In lieu of Form 3579, see last space below.

Check if: NO Acct. No. ON MAIL Account No. ILLEGIBLE

Name of Addressee

Jack Lawrence

Old Address

SR Box 16 B

Post Office, State and ZIP Code

Blissville, N.M. 87004

New Address

New-Tech Mining
59 1/2 S. Main St.

Post Office, State and ZIP Code

Moad, Utah 84532

The address portion of your 2d, 3d, 4th or controlled circulation mailing piece was not readily detachable. Reason for non-delivery was:

MOVED, LEFT NO ADDRESS NO SUCH STREET REFUSED
 NO SUCH NUMBER UNKNOWN UNCLAIMED

Miller

NEW-TECH MINING CORPORATION

Western Plaza Mall, Suite 3
59½ South Main
Moab, Utah 84532
Telephone (801) 259-8961

One Towne Centre, Suite 132
6121 Indian School Road, NE
Albuquerque, New Mexico 87110
Telephone (505) 883-5828

May 27, 1983

John W. Barton
District Manager
MESA Health & Safety
P.O. Box 25367
Denver, Colorado 80225

Dear Mr. Barton,

Enclosed please find our Roof Control Plan that we are submitting for approval for the BlackJack #1 Mine, Federal ID# 4201172, located at Thompson, Utah, in order to comply with Section 75.200 of the CFR 30 Codes.

The manufacturer's name of the roof bolting materials can not be supplied at the present time, as we are not open to mine coal.

All roof bolting componets shall comply with the American Standards Institute specifications for Roof Bolting Materials in Coal Mines.

We are looking forward to hearing from you soon.

Sincerely,

L.R. (Tex) Edmisten
L.R. (Tex) Edmisten
New-Tech Mining Corporation
Western Plaza Mall, Suite 3
59½ South Main
Moab, Utah 84532
(801) 259-8961

TE/vk

Enclosure



ROOF CONTROL PLAN

General Information

Date; 04-18-83

Mine I.D. No. 42-01172

A. Company;

New-Tech Mining Corporation
Western Plaza Mall, Suite 3
59½ South Main
Moab, Utah 84532
Telephone (801) 259-8961

B. Mine;

Black Jack #1
Thompson Canyon
Thompson, Utah 84540

C. Location;

Mine located 5 miles North on U.S. Highway #70 in
Grand County, Utah, NE¼, Sec.29, T20S, R20E, S.L.M.

D. Two types of Roof Control plan are submitted for the four seams of coal on the property.

1. The Carbonera Seam Roof Control plan is a Combination Roof Control Plan.
2. The Chesterfield Seam Roof Control Plan is a Combination Roof Control Plan.
3. The Ballard Seam Roof Control Plan is for Conventional, plus spot roof bolting.
4. The Pallisade Seam Roof Control Plan is for Conventional, plus spot roof bolting.

E. The area is for the Total Mine.

F. The maximum cover for Thompson Mine is 1500 feet

	<u>CARBONERA SEAM</u>	<u>CHESTERFIELD SEAM</u>
Main Roof	Laminated SS & Shale	Laminated SS & Shale
Immediate R.	Sandstone	Sandstone
Coal Bed	5 Ft.	5 Ft.
Bottom	Sandstone	Sandstone
	<u>BALLARD SEAM</u>	<u>PALLISADE SEAM</u>
Main Roof	Solid Sandstone, 8'	
Immediate R.	Solid Sandstone, 8'	
Coal Bed	4 1/2'	See Note #1
Bottom	Sandstone	

Note 1. The Pallisade Seam is covered except for outcrop in sloughed areas. Geological studies show solid sandstone top. When portals are opened up and roof conditions are known, a revised Roof Control Plan will be submitted if necessary.

Note 2. Pillars will be Columnized in all four (4) seams to retain integrity of roof and bottom in all seams.

G.

Lloyd R. Edmiston
Company Official

Mine Manager
Title

Roof Control Investigator _____

Approved By _____ Date: _____

Title _____

ROOF SUPPORT MATERIALS

H. Roof Bolts:

Manufacturer
Minimum Length 4 ft. - Diameter 5/8 inch
Type Steel - A306 Grade 80 - Type Thread 11unc Rolled
Length of Thread 8" - Type Head Standard
Dimensions of Bolt Heads - 1-1/8 x 1-1/8 x 1/2
Square Unchamfered

I. Bearing Plates

Manufacturer
Dimensions - 6" x 6" x 1/4"

J. Washers:

None Used

K. Anchorage Unit:

Manufacturer
Type, Expansion 5/8" x 3" - Finished Hole 1-3/8"
Method of Drilling, Rotary - Dust Control - Vacuum
Installed Torque 250 ft.-lbs

L. Materials Used In Conjunction With Roof Bolts:

1' x 4' Steel Mats if necessary

M. Face and Haulage Equipment:

1. Continuous Miner
2. Shuttle Cars
3. Roof Bolter
4. Conveyor Belt
5. Material Handling
6. Coal Under Cutter
7. Loading Machine
8. Face Drill

N. Sequence of Mining and Installation of Supports Including Temporary Supports

Plan Drawing showing sequence of mining including pillar mining where applicable, sequence of installation and spacing of supports including temporary supports and maximum width of entries, rooms, intersections, crosscuts, and pillar lifts are attached.

Entry Width: 20 Ft. Max

Entry Centers: 75 Ft.

Crosscut Width: 20 Ft. Max

Crosscut Centers: 75 Ft.

Room Width: 20 Ft. Max

Room Centers: 75 Ft.

Room Crosscut Width: 20 Ft. Max

Room Crosscut Centers: 75 Ft.

O. Roof Support Materials - Conventional, Temporary and Supplemental

Length of Post: As Required

Diameter of Post: 1 inch for each 15 inches to length but not less than 4 inches - no split posts.

Type of Post: Round of solid straight grain wood with the ends sawed square and free from defects which would affect their strength.

Cap Blocks: 3" x 6" x 30" tapered.

Wedges: 6" x 12" tapered

Crossbars: Straight Grain solid wood with a minimum of 3 inches by 8 inches with varying length.

Planks: A minimum of 1 inch by 8 inches of varying length.

Cribbing Blocks: A minimum of 30 inches in length and varying cross section.

P. Resin Roof Support Material

No application for resin roof support material is made at this time.

Q. Pillar Mining System

No application for pillar mining roof control system is made at this time.

SAFETY PRECAUTIONS

1. This is the minimum roof-control plan and was formulated for normal roof conditions and the mining system described. In active working areas where subnormal roof conditions are encountered, indicated or anticipated, the plan shall be supplemented with either longer and/or additional roof bolts, posts, or crossbars. If changes are to be made in the mining system, the plan shall be revised accordingly.
2. The method of mining employed shall adequately control the ribs. If mining techniques are unable to prevent rib-roll hazards, an approved rib-support program shall be initiated. Rib supports shall be installed along all active roadways of the mine where rib-control methods are ineffective, and the program shall be incorporated into the cycle of mining.
3. All personnel required to install roof supports shall be trained by a qualified supervisor designated by mine management before being made solely responsible for such work. This training shall insure that such persons are familiar with the functions of the support being used, proper installation procedures, and the approved roof-control plan. A record of this training shall be kept at the mine. Within one week after receipt of the approved roof-control plan all revisions contained herein shall be fully explained to all workmen whose duties require them to be on a working section.
4. All components of the roof bolt assembly shall comply with the American Standards Institute "Specifications for Roof Bolting Material in Coal Mines".
5. Finishing bits shall be easily identifiable by sight or feel and the diameter shall be within a tolerance of plus 0.030-inch minus zero of the manufacturer's recommended hole diameter for the anchor used.
6. When wooden material such as planks, header blocks, or crossbars are used between the bearing plate and the roof for additional bearing surfaces, the use shall be limited to short-life openings (not to exceed 3 years) unless treated. Bearing plates used in conjunction with wooden materials shall be not less than 4 inches square or of equivalent area.
7. When testing roof or installing supports in the face area, the workmen shall be within 5 feet (less if indicated on sketch) of a temporary or permanent support.
8. Where miners are exposed to danger of falls of roof, face, and ribs the workmen shall examine and test the roof, face, and ribs before any work or machine is started, and as frequently thereafter as may be necessary to insure safety.

9. Where it is necessary to perform any work such as extended line curtains or other ventilation devices in by the roof bolts or to make methane tests in by the roof bolts, a minimum of two temporary supports shall be installed. This minimum is applicable only if they are within 5 feet of the face or rib and the work is done between such supports and the nearest face or rib. Other methods of providing temporary supports for this work will be accepted if equivalent protection is provided.
10. Where rebolting work is being done or crossbars are being installed, at least two rows of temporary supports on not more than 5-foot centers shall be installed across the place so that the work in progress is done between the installed temporary supports and permanent supports installed in sound roof. The distance between the permanent supports and the nearest temporary supports shall not exceed 5 feet.
11. Where loose material is being taken down, a minimum of two temporary supports on not more 5-foot centers shall be installed between the workmen and the material being taken down unless such work can be done from an area supported adequately by permanent roof supports.
12. All metal jacks shall be installed with a cap block between the jack and the roof unless an oversize bearing plate is provided (not less than 36 square inches).
13. Roof bolts shall be installed in the sequence shown in the drawings.

During each production shift at least one roof-bolt hole in each active working place shall be drilled to a depth of at least 12 inches above the anchorage horizon of the bolts being used to determine the nature of the strata.
15. The roof in the face of a working place shall be supported according to the approved plan before any sidecuts are started,
16. An approved calibrated torque wrench that will indicate the actual torque on the roof bolts by a direct reading shall be provided on each roof bolting machine.
17. The torque on the first and one out of every four roof bolts installed thereafter at any location shall be checked by a qualified person. Such tests shall be made immediately after each bolt to be tested is installed, and if the torque on any bolt tested is not within the approved torque range, the reason shall be determined and necessary corrections made immediately. If the required torque cannot be obtained, supplementary supports such as additional roof bolts, longer roof bolts with adequate anchorage, posts, cribs or crossbars shall be installed.
18. On a daily basis, spot-check on torques shall be made on at least one roof bolt out of every ten from the outby corner of the last open crosscut to the face. The results of these tests shall be recorded in the onshift examination book. The record shall show the number of bolts tested and the number above and below the required range. If the results show that the majority of the bolts are not maintaining at least 125 foot-pounds of torque or have loaded up to where they exceed 300 foot-pounds of torque, supplementary support such as additional cribs, or crossbars shall be installed.

19. Posts installed under roof that is disturbed or susceptible to sloughing shall have a wooden cap block, plank, or crossbar between them and the roof. Where crossbars or planks are installed they shall be blocked to equally distribute the load across their length.
20. Posts shall be installed tight on solid footing and at least one but not more than two wooden wedges shall be used to install a post.
21. Posts shall be of solid, straight grain wood with the ends sawed square and free from defects which would affect their strength.
22. The diameter of round posts shall be at least one inch for each 15 inches of length, but in no case less than 4 inches. No split posts will be used.
23. Wooden cap blocks and footers shall have flat parallel sides and be not less than 3 inches thick, 6 inches wide, and 30 inches long.
24. A supply of suitable roof support material including temporary supports sufficient to support the roof during one complete cycle of mining shall be provided as close as practicable to each working face.
25. The required temporary support shall be installed in each face within 30 minutes after the mining equipment has been removed.
26. An additional supply of supplementary roof supports material consisting of 20 roof bolts, at least 12 inches longer than the bolt length being used, and a minimum of 20 posts of proper length with sufficient cap pieces and wedges, shall be provided at the dumping point or within 500 feet of the faces, whichever is closer. Tools and equipment necessary to install such support shall also be available within this distance.
27. A bar of length suitable for prying down loose material shall be provided on all mobile face equipment, except haulage equipment.
28. A suitable roof sounding device shall be provided with all mobile face equipment. If face workmen who are not operators or helpers on such equipment do not carry a roof sounding device, such device shall be available within 50 feet of their working area.
29. The roof where falls have occurred shall be considered unsupported, and if persons are required to enter such areas, either to travel over the fall or clean it up, the roof shall be supported. Where falls or blasted roof materials are cleaned up management shall devise and have in writing at the scene of the fall a plan incorporating the following procedures:
 - a. Such work shall be under the direct , and unless the workmen are specially trained to do such work, constant supervision of a company official.
 - b. Adequate temporary supports on not more than 5-foot centers shall be set at the edge of the fall where work is to be started. A minimum of four posts or jacks shall be used.

- c. Temporary support mentioned above shall be replaced by permanent supports (roof bolts and/or posts) and advanced as cleanup work progresses.
- d. Bolting or timbering shall proceed from permanently supported roof to the temporary supports before other work is performed and roof supports be advanced as the cleanup work progresses.
- e. Where necessary to load material before support can be set, such loading shall be done from areas of permanent support with the operator and other persons in the area under supported roof at all times.
- f. Where feasible, permanent supports shall be placed in the entire fall area before loading starts.

30. All unintentional roof falls defined in Title 30, Part 80 CFR shall be investigated and the results of the investigation recorded in a book provided for that purpose. Such falls shall also be shown on a map of the mine.