



STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

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August 28, 1985

Mr. Allen W. Smith, President  
North American Equities  
1401 17th Street, Suite 1510  
Denver, Colorado 80202

Dear Mr. Smith:

Re: North American Equities, Blazon #1, Mine, ACT/007/021, Folder No. 3,  
Carbon County, Utah

Please find enclosed staff comments in response to your proposed reclamation plan submitted under your cover letter dated August 8, 1985, received by the Division of Oil, Gas and Mining August 14, 1985. This submittal adequately addressed many reclamation aspects for this mine as noted in the attached comments. Some additional data are still required in order to finalize the reclamation plan, and these also are enumerated in the attached comments. You should be aware that an opinion on your proposal to place excess development waste in the Clear Creek Strip Pit was requested from the Office of Surface Mining (OSM) July 12, 1985. I have repeatedly telephoned this agency regarding this request and to date have not been advised when approval might be forthcoming. If North American Equities interests are in reclaiming Blazon #1 during the 1985 field season, I recommend you consider submission of an alternate plan addressing UMC 817.71, as I can not guarantee if and when OSM can concur with your off-site storage request. Should OSM provide approval in the meantime we would certainly consider your original proposal.

Submission of the requisite information noted, in the attached, will facilitate approval of a reclamation plan. We have come along way in developing this plan and I appreciate North American Equities commitment to reclamation of the Blazon #1 site. Please advise if additional information are required.

Sincerely,

A handwritten signature in cursive script that reads "L. P. Braxton".

L. P. Braxton  
Administrator  
Mineral Resource Development  
and Reclamation Program

jvb  
cc: Allan Czarnowski, ACZ  
S. Linner  
0198R-11

North American Equities  
Blazon #1 Mine  
ACT/007/021  
Carbon County, Utah  
August 28, 1985

REVIEW OF RECLAMATION PLAN

Original Comment

UMC 784.13 Reclamation Plan: General Requirements - RH, DC/RS

- (b)(1) The applicant has not provided a schedule for the reclamation of the lands within the proposed permit area. The reclamation plan requires a detailed timetable of each major step in the reclamation plan. This can be accomplished by providing a bar chart on a weekly schedule for the reclamation construction. Timing can be accomplished by notifying the Division within 30 days of commencement of the reclamation construction work.
- (b)(2) The applicant has not provided a detailed estimate of the cost of the reclamation of the operations. A detailed cost estimate of the reclamation of the operations is required with supporting calculations for the estimates. Supporting calculations shall include estimated quantities required for demolition and cleanup, coal spoils regrading and removal, general earthwork and grading, and revegetation. Productivity estimates shall be used to determine the size of the equipment and the number of hours required in order to perform the various tasks. Cost estimates should be derived from the Blue Book Rental Rate book and the Means Cost Data book as needed. These references are used as the standard by the Division in determining reclamation costs.
- (b)(3) The applicant has provided a plan for backfilling and grading with contour maps and sections that show the anticipated final surface configuration of the permit area. However, the applicant shall address the following concerns in order to comply:

Determination of Completeness - JRH

Refer to comments under UMC 817.101.

Original Comment

UMC 784.13 Reclamation Plan: General Requirements - LK

- (b)(5)(i) Page 13 does not indicate that Mr. Otani wants the sediment ponds left. A reclamation plan of these structures or a demonstration that the requirements of UMC 817.49 are met must be supplied.

- (ii) Seed mix needs to be revised. In addition to low seeding rate, the mix includes several introduced species that the applicant has not provided justification for their use (see UMC 817.112).

Attached I have noted on the proposed seed mix several changes which would make it acceptable (grasses and forbs only). The proposed woody plant seeding rates are extremely low and are not expected to provide the 2677 woody plants per acre (reference area stocking) and will need to be increased greatly. This could be done by adding additional species, supplementing the seeding with transplants or greatly increasing the seeding rate.

- (iii) On page 28 it states "chisel plowing or disking the area along the contour if possible". Does the "if possible" refer to doing these tasks, or to doing them on the contour. Please clarify.

Page 29 refers to broadcast seeding after mulch is applied and anchored. This is not acceptable. For best results, broadcast seeding should take place prior to mulching.

- (iv) The use of jute netting to anchor mulch on steep slopes (as proposed on page 32) does not provide favorable results. Mulch should either be anchored using a chemical tackifier or a nylon netting.
- (vi) The measures proposed to determine success of revegetation are not acceptable. While the applicant has apparently quoted UMC 817.116(b)(3)(ii), this standard would apply only to the 3.5 acres proposed to be used by Mr. Otani. The remaining 1.5 acres to be reseeded must meet the appropriate standards for fish and wildlife habitat (i.e., comparison with reference area or other approved standard at the appropriate statistical confidence levels).

The applicant must provide a detailed monitoring plan to monitor reclaimed areas throughout the 10 year liability period. This plan should include the various parameters to be monitored, sampling methodology and timing (year(s) and season).

If the area that is proposed for Mr. Otani's use is not used immediately, it should be seeded with a cover crop (i. e. yellow sweetclover and barley or wildrye) this fall.

Determination of Completeness - LK

UMC 784.13(b)(5), 817.97(d), 817.111, 817.116-.117 Revegetation

Several times N.A.E. has referred to UMC 817.116(b)(3)(ii) to justify not needing a success standard or planting woody species for reclamation of the Blazon #1 Mine. Please note that this regulation would apply only to the 3 acres proposed to be used by Mr. Otani (the area being used as "industrial or commercial land use"), not to the entire 5 acres. As stated in the previous review, this regulation requires commercial/industrial areas to be revegetated to control erosion if not utilized immediately for the intended land use, and that the intended commercial/industrial land use be implemented no later than 2 years from the time of reclamation. The 2 acres (the original 1.5 acres and the .5 acres of sediment ponds) to be seeded with the proposed seed mix is not "industrial use land". Reclamation must meet the criteria of UMC 817.111-.117. This includes planting of shrubs (UMC 817.97(d)(9) & (11), 817.111, 817.116(b)(3)(iv) and 817.117(c)); establishing an appropriate reclamation success standard (i.e. reference area); and providing an appropriate monitoring plan to assure the success criteria will be met. As stated before, the entire mine site was critical value wildlife habitat prior to mining and even though N.A.E. apparently does not agree, the small amount of acreage involved is very significant to the wildlife of the area.

Therefore, before this reclamation plan be considered complete, please provide the following information and plans in order to comply with the above sited regulations:

1. A shrub planting plan to establish a minimum of 2410 shrubs per acre (90% of 2677 reference area stocking. This may be done by direct seeding, using transplants, or a combination of both. This plan must identify the species and the amounts of seeds and/or seedlings per acre to be used, a schedule for seeding and/or planting and an estimated cost for bonding.
2. A commitment to use the established reference area as the standard for determination of reclamation success (as per UMC 817.116) for cover, production and woody plant density.
3. A detailed monitoring plan to monitor reclaimed areas throughout the 10-year liability period. This plan is to include the various parameters to be monitored, sampling methodology and timing (year(s) and season [this should include sampling for bond release the last 2 years of the liability period]).

Additional Comment - JSL

UMC 784.13 Reclamation Plan - General Requirements - JSL

The applicant states that approximately 1410 cubic yards of topsoil are available for redistribution and that 10 to 15 inches of topsoil will be placed on the reclamation areas. The applicant then states in the Postmining Topography Revegetation map that area D will receive six inches of topsoil and eludes that area E was not to receive any topsoil. The applicant now states that the topsoil will be placed over the sediment ponds. A detailed volume of soil redistributed to the reclaimed area must be developed. The volume of any substitute materials must be included in the soil mass volume tabulation. If the soil depth is not uniform in the distribution depth, please discuss the rationale. What will be the minimum soil depth?

Original Comment

784.14 Reclamation Plan: Protection of Hydrologic Balance - DC/RS

- (a)(1), The applicant needs to submit a plan of the measures
- (a)(3) (primarily interim sediment control) to be taken to ensure the quality and quantity of surface and groundwater during reclamation activities. These measures may include (but are not limited to), silt fences, straw bales, proximity to stream, timing of reclamation activities.

Determination of Completeness - DC

The applicant must submit a plan of the sediment control measures to be taken to insure the quality and quantity of the surface and groundwater during reclamation activities. The Division requires a plan of control measures to be used in the event that siltation or sedimentation problems occur. A plan must be submitted detailing the methods to be used to prevent any sedimentation impacts to the existing water resources.

Original Comment

UMC 784.14 Reclamation Plan: Protection of Hydrologic Balance &  
UMC 817.52 Hydrologic Balance: Surface & Ground Water Monitoring  
- DC/RS

- (b)(3) The applicant must submit a monitoring plan (including collection, recording and reporting of water quality and quantity data) for the reclamation phase and post mining phase in accordance with the DOGM water monitoring guidelines (enclosed). The applicant must sample Mud Creek at stations upstream and downstream from all construction activities. The applicant must sample on a weekly basis for Setttable Solids (SS) and Total Suspended Solids (TSS) and submit monthly to the Division all data.

Determination of Completeness - DC

The applicant must submit a monitoring plan for the reclamation phase and post-mining phase in accordance with the DOGM water monitoring guidelines. Continued evaluation of the water monitoring data by the Division will determine the duration of the monitoring program. The Division may approve termination of the monitoring program prior to bond release upon demonstration that mining activities have not or will not impact the existing water resources in the area.

Original Comment

UMC 784.15 Reclamation Plan: Postmining Land Use - RH

In general, the existing location of facilities used for mining operations are suitable for the proposed post mining land use. However, the Division recommends that the following changes be made or considered as part of the reclamation plan. Item numbers are referenced to Map 2, RECLAMATION PLAN.

1. Item 30) - Main transformer pole. It is recommended that the transformer pole be moved to the lower bench area adjacent to the building. This would provide for a more aesthetic appearance of the site and ease in maintenance of the utility in comparison with its present location on the hillside above the lower pad. No services or equipment remain which would require power above the lower pad.
2. Item 7) - Substation access road. With the power pole transformer moved to the lower bench, no future use of the substation access road is apparent and it should be reclaimed.
3. Item 34) - Water main. Problems with the water main may occur during re-establishment of the drainage channel. Contingencies should be made for the relocation of the water main in the event that the line is disturbed or damaged during construction. The reclamation plan should also address what measures will be take to protect the water line from exposure by erosion of the drainage channel.
4. Item 14) - Culvert D - 24" diameter CMP. Removal of the upper half of the culvert will require design of a headwall facility to carry the water under the lower pad. In the event that the culvert cannot be designed to handle the 100-year, 24-hour event, it is recommended that the culvert be completely removed and that open channel flow be established. Consideration during design of the headwall for the culvert should also include the potential for mud and debris flows in the ephemeral channel. The reclamation plan should consider what maintenance requirements will have to be met by the landowner in order to prevent a blocked culvert from such an event. UMC 817.133(c)(6) requires that the proposed use will neither present an actual or probable hazard to public health or safety.

5. Item 12) - Culvert B - 84" diameter CMP. The pre-existing mine plan indicates that the culverts in Mud Creek were designed for the 50-year, 24-hour event. In the event that the culvert is not adequately sized for the 100-year, 24-hour event or cannot be redesigned to meet the peak flow, NAE should consider removal of this culvert. Removal would allow for re-establishment of open channel flow from the ephemeral channel currently diverted by culvert "D". Additionally, the possibility of relocating culvert "B" next to culvert "C" which in tandem may provide the required discharge capacity should be investigated.

Determination of Completeness - JRH

The applicant has maintained that no additional reclamation work would be achieved if the transformer pole were move to the lower bench area. The applicant has sufficiently responded to this suggestion and the transformer pole will be allowed to remain in its existing location.

The operator has ensured that the existing water line will not present problems during re-establishment of Little Snyder Canyon drainage. If the line does present problems or is damaged, the operator will repair or replace those sections. These comments are considered adequate.

Determination of Completeness - RS

The calculations presented in Exhibit 8 for the requested peak flow values are incorrect. The Division has calculated the values for drainage area A and C as follows:

Drainage area A:	
100 yr-24 hr peak flow:	1063.9 cfs
Drainage area C:	
100 yr-24 hr peak flow:	137.7 cfs

These values differ significantly from the values presented by NAE. It appears that incorrect values for the rainfall intensity (i) and the correction coefficient (c) were used in the calculation using the rational formula. The requirements of 817.44 require permanent diversions to be designed for the 100yr-24hr precipitation event. The Division will require that plans be submitted demonstrating the capacity of culverts A (if to be left), B, C, and D to pass this event or plans be submitted for their removal. NAE may contact the Division for details of the above calculations for submittal or submit modified calculations for the 100yr-24hr event.

Original Comment

UMC 817.13 Casing and Sealing of Exposed Underground Openings - DD

North American Equities shall discuss the current status of all exploration boreholes, whether permanently sealed or not. A time table shall be submitted outlining a schedule for each exploration bore hole to be sealed.

Unless transfer of water well under UMC 817.53 is approved North American Equities shall submit a schedule for sealing the existing well.

North American Equities will be required to seal the fan portal entry in accordance with UMC 817.50.

Determination of Adquacy - DD

This section has been addressed.

Additional Comment - JSL

UMC 817.22 Topsoil Removal

- (e)(1)(i) The applicant states that a soil substitute medium will be taken from the upper outslope of area E. The substituted material should be equal to or more suitable for sustaining vegetation than is the available topsoil. This determination will be based on the analysis of pH, organic matter (%), cation exchange capacity, saturation percentage alkalinity, total nitrogen, available phosphorus, sodium absorption ratio, potassium, calcium, magnesium, electrical conductivity and texture class.
- (e)(1)(ii)(b) The applicant must submit laboratory data that substantiate that the substitute material is the best available medium for reclamation. The applicant must state the volume of substitute material that will be used.
- (e)(1)(ii)(b) The applicant must submit laboratory data that substantiate that the substitute material is the best available medium for reclamation. The applicant must state the volume of substitute material that will be used.
- (e)(1)(ii)(c) The laboratory must use standard methods of analysis. The methods of analysis must be indicated.

Original Comment

UMC 817.24 Topsoil Redistribution - RH

The applicant needs to detail how topsoil will be placed uniformly and in a manner so as to prevent slippage on slopes steeper than equipment used will allow. Chisel plowing or disking along the contour is impractical for slopes exceeding 2:1.

Determination of Adequacy - JSL

- (b) Is the soil redistribution plan using the soil survey and volume of available soil to produce a final soil depth.

Additional Comment - JSL

UMC 817.25 Topsoil: Nutrients and Soil Amendments

The applicant states that the soil will be tested for nitrate - nitrogen and phosphorus. The test must be for total nitrogen and available phosphorous. Other analysis must include pH, calcium, magnesium, sodium, sodium adsorption ratio, electrical conductivity, texture and saturation percentage. These tests must be done by a Division approved laboratory. The laboratory must use standard methods of analysis. The methods of analysis along with nutrient recommendations must be indicated.

Original Comment

UMC 817.43 Hydrologic Balance: Diversion and Conveyance of Overland Flow, Shallow Ground Water Flow, and Ephemeral Streams - DC/RS

- (b) The applicant needs to provide calculations that show the disturbed drainage diversions (items #19 and #20 on Map #2 of the Reclamation Plan) are capable of passing the 10-year, 24-hour precipitation event.

Determination of Adequacy - RS

Review could not be completed for Ditches A and B. The drainage area for ditch B has not been delineated on map 11, and subsequently the Division can not determine a time of concentration value or the watershed area draining to this ditch. Exhibit 8 depicts ditch A (map 11) to be the mud creek channel and the supporting calculations for the peak flow value in that exhibit appear to be for that drainage area (area A). The application must depict clearly the area draining to these diversions and their exact locations before review can proceed. It is probable that the peak flow calculations presented in exhibit 8 for these diversions are incorrect. Refer to above 785.14 comments.

Original Comment

UMC 817.44 Hydrologic Balance: Stream Channel Diversions - DC/RS

- (b)(2) The applicant needs to provide calculations and designs which demonstrate all permanent diversions (items #12, #13, #14 and the Mud Creek channel on map #2 of the Reclamation Plan) are capable of passing the 100-year, 24-hour precipitation event. The applicant must submit plans demonstrating channel stability at this flow.

- (c) The applicant must submit plans for the removal of culvert A (item #11 on map #2 of the Reclamation Plan). Stream channel diversions shall be removed when no longer needed to achieve the purpose for which they are authorized.

Determination of Adequacy - DC

The applicant needs to provide calculations demonstrating that the Mud Creek channel and flood plain is capable of passing the 100 yr-24 hour precipitation event. Additionally, the applicant must address UMC 817.44(d)(1-3) under stream channel diversions or present evidence that Mud Creek has not been altered. The Division files contain inspection memos dated September 18, 1980 and October 20, 1980 that indicate the channel was diverted and rip rapped by Blazon Company. Please clarify.

The applicant must include plans for the reclamation of the channel bank after the removal of the culvert. These plans must include recontouring of the bank and design for rip rap protection. The applicant must also state when the culvert will be removed. Figure 1 in the August 8, 1985 correspondence from NAE indicates the culvert will be removed prior to any grading or seeding. The response to UMC 817.44(c) on page 14 indicates that the culvert will be removed following topsoil and reseeding of the portal bench area. The applicant must also include what time of year the culvert will be removed.

Original Comment

UMC 817.46 Hydrologic Balance: Sedimentation Ponds - DC/RS

- (u) In order for the Division to approve the retention of the upper and lower sediment pond cells (items #17 and #18 on Map 2 of the Reclamation Plan) the applicant must address all the requirements for permanent impoundments of Section UMC 817.49 and 817.56. If the sediment ponds are to be reclaimed, the applicant must submit plans demonstrating that the ponds shall not be removed until:
1. The disturbed area has been restored;
  2. The revegetation requirements of Sections UMC 817.117 are met, and
  3. The drainage entering the pond has met the applicable state and federal water quality requirements for the receiving stream.

Determination of Adequacy - RS

UMC 817.46(u) and 817.42(a)(2) both require that sedimentation ponds shall be left onsite until the above requirements are met. The applicant must submit plans and a commitment to meet the requirements of these two regulations before approval can be granted.

Original Comment

UMC 817.53 Transfer of Wells - DD

Transfer of the water well for now is contingent upon the States acceptance of the application. Upon transfer Jack Otani shall provide a letter that indicates he will assume liability for damages to persons or property from the well, and plug the well when necessary or prior to abandonment.

North American Equities shall submit a letter accepting secondary liability for the transferee's obligations.

Determination of Adequacy - DD

This section has been addressed.

Original Comment

UMC 817.71 Disposal of Excess Spoil and Underground Development  
Waste - LK

The applicant must provide a reclamation plan and demonstrate that reclamation is feasible for the disposal area (Old Clear Creek Strip Pit).

Determination of Adequacy - LK

The Division has requested a variance from OSM which would allow this action. As of today, OSM has not responded to this request. Therefore, this issue will be resolved at a later date.

Original Comment

UMC 817.97 Protection of Fish, Wildlife & Related Environmental  
Values - LK

- (d)(4) The applicant has not provided plans to restore the critical wildlife habitat which was disturbed by the operation.
- (5) Plans to restore the riparian areas must be submitted, including the removal of unnecessary culverts.
- (11) Since the applicant is proposing to change the pre-mine landuse of wildlife habitat to industrial, plans to establish greenbelts or shelter belts through the "proposed industrial area" must be provided.

Determination of Adequacy - LK

See comments under UMC 784.13(b)(5).

Original Comment

UMC 817.101 Backfilling and Grading - RH

- (b)(1) The applicant has addressed the stability requirements under this section dealing with the mass stability of the area. The applicant should note that the long term static factor of safety is 1.5 rather than 1.3 as stated in the reclamation plan on page 27. Calculations in Exhibit 8 indicate that the slopes are stable for circular failure with a static factor of safety greater than 1.5. However, these calculations do not consider the possibility of surface failure nor the increased likelihood for rill and gully erosion of the slopes prior to establishment of vegetative cover. Investigation into the sections provided by North American Equities indicate that the slope can be reduced to as low a 2:1 in most areas without increasing the projection of the downslope. The original surface is at a slope of 1.6:1. It is maintained by the Division that the maximum slope that should be maintained on the fill of the slopes be 1.6:1. Where possible, the slopes should be reduced to 2:1 in order to minimize the potential for rill and gully erosion and enhance the chance for vegetation success.

Determination of Adequacy - JRH

The applicant has not adequately responded to the comments concerning backfilling and grading. Postmining contours of the area are virtually unchanged from those seen currently on the site at present. The portal bench area will be highly visible and will not meet the requirements for Approximate Original Contours. The applicant shall submit a new contour map showing a more suitable relief of the area with slopes not exceeding those found on the site during premining conditions. Where possible, the slopes shall be reduced to a minimum to enhance vegetative growth and to reduce erosion during establishment of vegetative cover.

Additional Comments - JSL

UMC 817.106 Regrading or Stabilizing Rills and Gullies - JSL

The applicant must commit in writing to regrade and seed areas of rills and gullies that are deeper than nine (9) inches.

Original Comment

UMC 817.133 Post Mining Land Uses - LK

The legal owner of record is Calvin K. and Milton E. Jacob - not Jack Otani. In order to approve the landuse change the landowner of record must request such in writing and demonstrate that the criteria of UMC 817.133(c) are met.

Determination of Adequacy - LK

The applicant has not provided this information.

jvb  
0447R

Table 1

PROPOSED SEED MIXTURE - Part 1

Species	Pounds Pure Live Seed/Acre	
	<u>proposed in PAP</u>	<u>recommended changes</u>
<u>Grasses:</u>		
<u>Agropyron riparium</u> streambank wheatgrass	2.0	4.0
<u>Agropyron trachycaulum</u> slender wheatgrass	2.0	4.0
<u>Bromus marginatus</u> mountain brome	2.5	5.0
<u>Poa cambyi</u> camby bluegrass		3.0
<u>Poa pratensis</u> Kentucky bluegrass	1.5	.25
Sub Total	<u>9.5</u>	<u>16.25</u>
<u>Forbs</u>		
<u>Achillea millefolium</u> western yarrow		.15
<u>Astragalus cicer</u> Cicer milkvetch	.5	delete
<u>Hedysarum boreale</u> sweet vetch	.5	1.0
<u>Lathyrus latifolius</u> perennial sweetpea	.25	delete
<u>Linum lewesii</u> blue flax		2.0
<u>Medicago sativa var Ladak</u> Ladak alfalfa	.25	1.0
<u>Osmorhiza occidentalis</u> sweet anise	.25	1.0
<u>Sanquisorba minor</u> small burnet	1.0	delete
<u>Trifolium hybridum</u> alsike clover	.5	delete
<u>Melilotus officinalis</u> yellow sweetclover	(add to list)	2.0
Sub Total	<u>3.00</u>	<u>7.15</u>

\*Rate is for broadcast or hydroseeding methods