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PRINTED: 07/26/2001

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: GOLDEN EAGLE

ALTERNATE NAMES:
BOBTAIL

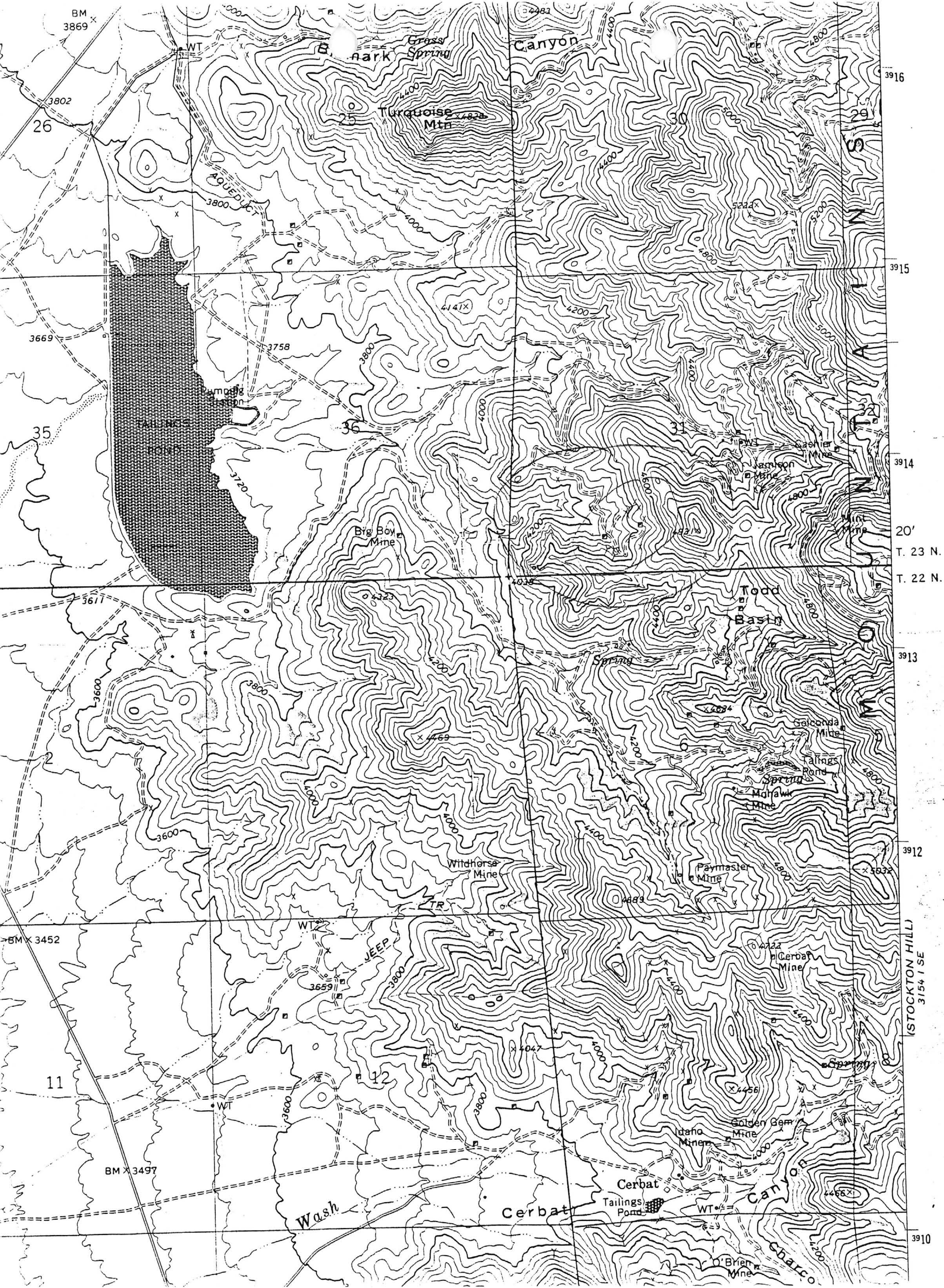
MOHAVE COUNTY MILS NUMBER: 112B

LOCATION: TOWNSHIP 23 N RANGE 17 W SECTION 31 QUARTER SW
LATITUDE: N 35DEG 19MIN 58SEC LONGITUDE: W 114DEG 08MIN 26SEC
TOPO MAP NAME: CERBAT - 7.5 MIN

CURRENT STATUS: DEVEL DEPOSIT

COMMODITY:
SILVER
GOLD LODE
COPPER
LEAD SULFIDE
ZINC SULFIDE
IRON SULFIDE
URANIUM

BIBLIOGRAPHY:
ADMMR GOLDEN EAGLE FILE
ADMMR MOHAVE CUSTOM MILL STUDY
DINGS, M. "WALLAPAI MNG DIST, CRBT MTNS, AZ"
USGS BULL 978-E, P 147; 1951
A.E.C. PRELIM. RPT. RME 4026, P. 33-35
A.E.C. PRELIM. RECONN. RPT. 172-485, P. 65


BM 3869
WT
Gross Spring
Canyon
Turquoise Mtn
4828
25
30
29
26
3802
AQUEDUCT
3800
5222
3916
3915
4141
3669
3758
Pumping Station
TAILINGS POND
3720
35
36
31
32
Cashier Mine
Jamison Mine
3914
Mint Mine
20′
T. 23 N.
T. 22 N.
Big Boy Mine
4931
4038
4323
Todd Basin
3611
Spring
3913
4634
Golconda Mine
4469
1
6
5
2
Tailings Pond
Spring
Mohawk Mine
3912
Wildhorse Mine
Paymaster Mine
5032
4689
JEEP TR
BM X 3452
3659
4722
Cerbat Mine
(STOCKTON HILL)
3154 I SE
4047
11
12
Spring
4456
Golden Gem Mine
Idaho Mine
BM X 3497
Cerbat
Tailings Pond
Wash
Cerbat
Canyon
4466
3910
O'Brien Mine

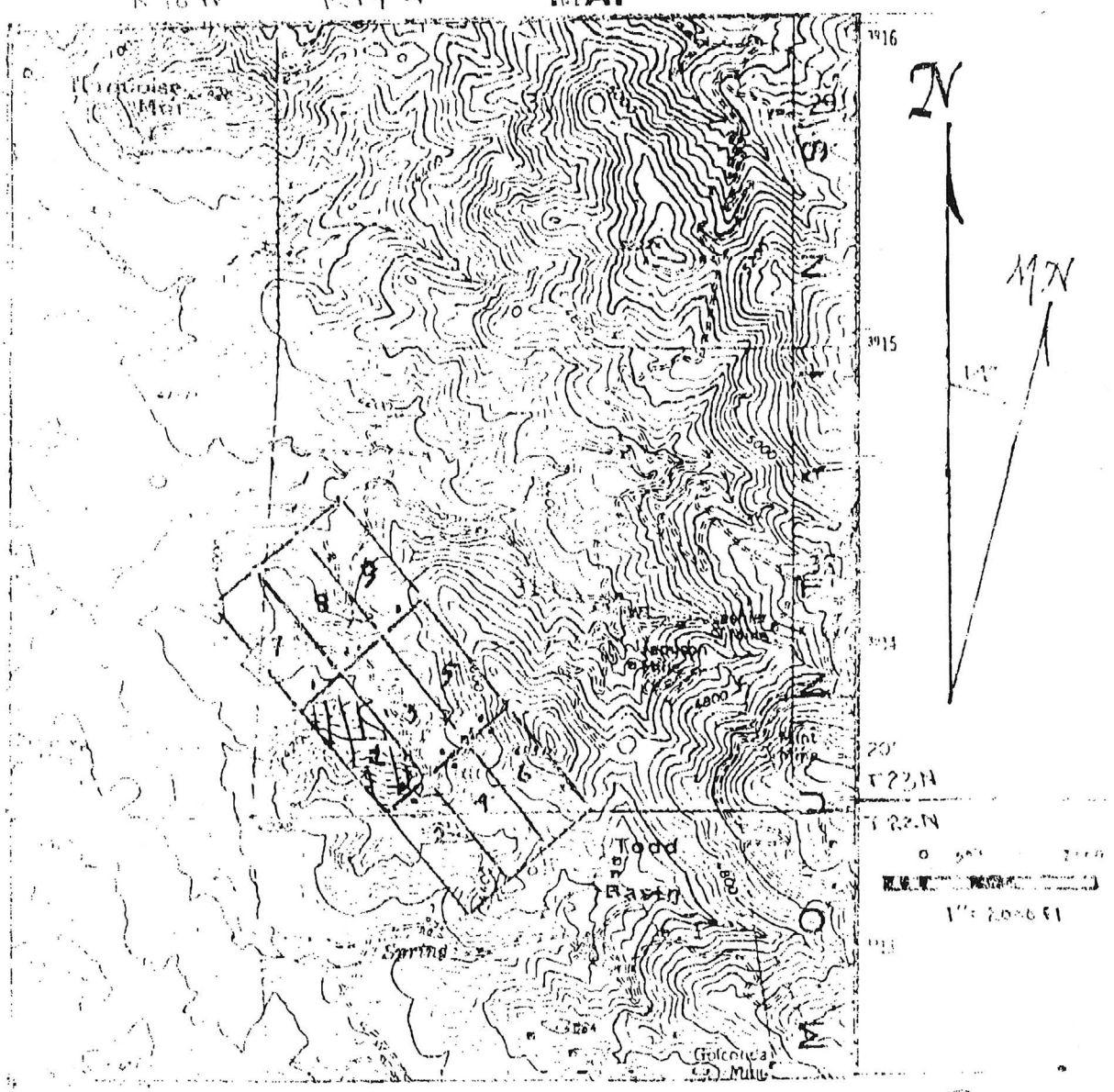
MAP OF MINING CLAIM LOCATION

GOLDEN EAGLE(F)
MOHAVE CO.

1. The name of the claim is HARMONY #1
2. The Southernmost corner of the claim is 1,340 feet in a S 88° W direction to a survey monument or permanent natural object described as the SW corner of sec 31, T 23 N, R 17 W, Mohave County, AZ.
3. The type of location monument is A 2" x 2" x 18" Wooden Post
4. The type of corner and monuments are 2" x 2" x 18" Wooden Posts
5. The bearing and distance between the corners of the claim are beginning at the NE corner of the claim, 1,500 feet in a S 35° E direction to the SE corner, then 600 feet in a S 55° W direction to the SW corner, then 1,500 feet in a N 35° W direction to the NW corner, then 600 feet in a N 55° E direction to the point of beginning

K 16 W R 17 W

MAP



Section 31 Range 17W Township 23 N
Gila and Salt River Base and Meridian

April 13th, 2001

Signature

(Ed Huskinson)

Arizona's Precious Metal Reserves and Resources

by Arizona Department of Mines and Mineral Resources

From an informal, partial, review of some of the significant gold and silver resources of Arizona. Comments that are in ALL CAPITALS date from ADMMR's publication Arizona Mineral Development 1984 - 1986. This data was last updated November, 2000.

Mine	County	Tons in Millions	Com modity	Grade	Info. Date	Comments
GOLDEN EAGLE	Mohave		Au			200,000 tons at .25 resource, 80,000 ton reserve, Morgan Mining permitting 1994. As of 3-97 no indication company proceeded with development.

RIH

GOLDEN EAGLE MOHAVE COUNTY

NJN WR 12/29/87: Phil Blacet (card) reported that a Cyprus consultant is working on the Golden Eagle/Silver Eagle, MILS 112B, Mohave County near Mineral Park.

ARIZONA DEPARTMENT OF ENVIROMANTAL QUALITY

AQUIFIER PROTECTION PERMIT APPLICATION

RESPONSE TO QUESTIONS GOLDEN EAGLE MINE APP APPLICATION COMPLETENESS REVIEW

DATED

SEPTEMBER 2, 1993

PREPARED FOR

MORGAN MINING COMPANY
c/o Mr. A.W. Vander Pyl
2880 SOUTH LOCUST
Apt. 702-S
DENVER, COLORADO 80222
(303) 757-2070

PREPARED BY

LYNTEK

775 Mariposa Denver, Colorado 80204
(303) 623-8365 FAX (303) 623-0342

JULY 1993

LYNTEK
775 Mariposa Denver, Colorado 80204
(303) 623-8365 FAX (303) 623-0342

Mr. Ken R. Drew, Area Manager
Bureau of Land Management
Kingman Resource District
2475 Beverly Avenue
Kingman, Arizona 86401

December 15,1993

Dear Mr. Drew:

This letter is intended to serve the function of answering comments presented in your letter of September 14, 1993, Ref: 3809 (025) AZA-27773.

Revegetation

Morgan Mining Company intends to utilize the seed mix and application methods recommended by the Bureau of Land Management at closure and reclamation of the Golden Eagle Minesite. We recognize the expertise of your group in these areas and will fully cooperate to obtain the very best result possible.

Protected Plants

No threatened or endangered species were found on the project site during the field investigation. Several plants listed as endangered or threatened were considered to be potentially present on the site, however were not noted in the inventory. They are Freckled Milkvetch (Astragalus lentiginosus), Penstemon bicolor ssp. roseus, and two horsebrush shrubs (Tetradymia argyaea) and (Tetradymia argyaea). Although these were not found, they will be looked for during the surveying and lay out of areas to be excavated during the development stage of the mine and haul road.

No larger species of cactus were noted that might require protection. The habitat is not favorable to the growth of the larger, Arizona protected, species of these plants.

Should any plants in the endangered or protected categories be located at any time during the course of development, production, or reclamation of the project, steps will be taken to protect said species, including immediate notification of the Bureau of Land Management and other pertinent agencies, formulation of a plan to protect the plants followed by complete cooperation with guidelines found to be necessary to protect the plants in question.

Archaeological Resources

A Class III Archaeological Resource Inventory was conducted and reported in April 1992 by SWCA, Inc., Environmental Consultants. The report was referenced only in the Environmental Assessment prepared for Morgan Mining Company by Lyntek, Inc. and submitted in July of 1993.

One "Historic Site" was identified in the project area. No "Pre-Historic" sites were identified. The "Historic Site" that was documented encompassed most of the area that is proposed for the present mining activity currently being permitted. The site consists of four specific areas identified as loci 1, 2, 3, and 4. These are all generally mining related sites that are "Historic" in nature and are results of earlier mining activity in the area. It has been determined by a land survey that locus 4 is outside of the property controlled by Morgan Mining Company. Therefore Morgan Mining Company can not legally enter on to the site to perform additional archaeology.

Locus 1 consists of the shaft and associated building remnants and concrete machinery pads representing the most recent mining production activities in the area. This area will be excavated as part of the proposed open pit mine component of the mining operation currently being proposed for the area.

Locus 2 consists of concrete and wooden foundations, the remnants of a wooden structure, and a trash dump containing various items from about 1950 to 1975. Again, this entire area will become part of the proposed mining project, being located in an area that will become part of the proposed plant site pad. The head frame at locus 2 was vandalized and burned.

Locus 3 is located generally downhill from locus 2 and consists of a stone retaining wall enclosing an area that may have been a tent foundation pad. A light scatter of historical bottles and cans were found in this area. The toe of the proposed tailing dam and plant pad will eventually cover this area.

Locus 4 is located further west and downhill from the other identified sites. This particular locus is not in an area that will be disturbed by the proposed mining operation. The proposed haul road will pass above the remains of the building, however, it will be routed to avoid any damage to the stone walls or the immediate surrounding area. A berm and fence structure will be constructed between the proposed haul road and the site to preclude any debris resulting from construction or subsequent grading activities from encroaching on the protected site.

Morgan Mining Company will develop a mitigation plan which will be revised and approved by the BLM. The mitigation plan development will involve the Bureau of Lang Management Archaeologist and a Bureau of Land Management authorized archaeological consultant. A site visit to further evaluate loci 1,2 and 3 and the avoidance of locus 4 will be a critical part of the final mitigation plan.

Thank you for the opportunity to answer the questions and concerns pertaining to the permitting process for Golden Eagle Mine. Please direct any further questions of requests for clarification to Mr. Nicholas S. Lynn, Lyntek, Inc.

Sincerely yours,

LYNTEK, INC.

Nicholas S. Lynn

cc: Mr. A. W. Vander Pyl
Morgan Mining Company
2889 South Locust, Aptartment 702-S
Denver, Colorado 80222

9/2 letter from
ADEQ + response
from Morgan

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

Fife Symington, Governor Edward Z. Fox, Director

MU93:0176 **File No. 102723**

September 2, 1993

Mr. A.W. Vander Pyl
2880 South Locust
Apt 702-5
Denver, CO 80222

RE: **Golden Eagle Mine - Aquifer Protection Permit Application Completeness Review**

Dear Mr. Vander Pyl:

The Plan Review and Permits Section of the Arizona Department of Environmental Quality (ADEQ) has completed a review of the information included in your Aquifer Protection Permit (APP) application received August 6, 1993. Based on that review the application is considered incomplete.

An APP is a one time, all inclusive document that is static throughout the life of the mine; it is not compiled in phases as suggested in appendix 1 on page 5 of the current application. Please submit the following information to complete the application:

Location Map

1. The locations for seven wells located within ½ mile of the Golden Eagle property, obtained from ADEQ's 1990 Well Registry Report are provided with a statement that the exact locations are unknown. Do any other sources for this information exist? Three of these wells are located on Cypress's property; perhaps they could provide additional information. It is necessary to ascertain if any of these wells are used as sources of drinking water.

2. The location of the Golden Eagle property in relation to the Cypress property is well illustrated in figure 1. However, the ownership and usage of the adjoining property to the immediate north, east, and south must also be provided.

Site Map

1. A legend should be provided on this map explaining the various sample types and wells.

2. Although the Golden Eagle mine is proposed to be a non discharging facility, a point of compliance (POC) must be established as per Arizona Revised Statutes (A.R.S.) § 49-244. which states:

> A.R.S. § 49-244. The point of compliance shall be a vertical plane downgradient of the facility that extends through the uppermost aquifers underlying the facility.

Specifically, the information required is the exact location (i.e., latitude and longitude) where a point of compliance could be established. The location of the POC must be concisely identified in the APP document and located on the site map. Furthermore, in order to strategically locate a point of compliance, it is first necessary to determine the direction of groundwater flow.

Characterization of Discharge

As stated in attachment 4, page 1, of the APP application, Morgan Mining Company collected samples of ore, tailings, and waste rock which were analyzed by Hazen Research Incorporated. These samples are not clearly identified in Hazen's lab reports presented in appendix A. Also, the analytical results for the ore sample are not listed in the table on page 2 of attachment 4. The Hazen lab reports state that the Synthetic Precipitation Leaching Procedure (SPLP) method was used for three different samples, while it is stated in attachment 4 that the Toxicity Characteristic Leaching Procedure (TCLP) and the Extraction Procedure (EP) tests were completed for these samples. In order to clarify these ambiguities and provide other required information, please complete the following:

1. Samples of ore, waste rock, and tailings need to be tested for the Priority Pollutant Metals and the Major Cations and Anions (Table 1).

2. The Priority Pollutant Metals must meet the Arizona Administrative Code (AAC) for the Numeric Aquifer Water Quality Standards R18-11-406.A. (Table 1). A laboratory method needs to be utilized that will determine the total concentration of metal being tested. The detection limits for some of the metals listed in appendix A are higher than the standards and, therefore, alternative test methods need to be utilized.

3. The Major Cations and Anions must meet the Narrative Aquifer Water Quality Standards AAC R18-11-405.A. and R18-11-405.C. which state:

> R18-11-405.A. A discharge shall not cause a pollutant to be present in an aquifer classified for a drinking water protected use in a concentration which endangers human health.

R18-11-405.C. A discharge shall not cause a pollutant to be present in an aquifer which impairs existing or reasonably foreseeable uses of water in an aquifer.

4. Concise lithologic descriptions should be provided for all ore and waste rock types specifically associated with the Golden Eagle mine.

Demonstration of BADCT

The overall design of the site layout and proposed construction for the Golden Eagle mine is very well thought out. However, there are two points that need to be mentioned for consideration:

1. If a goal for the Golden Eagle mine is to have a zero discharge facility, why is it proposed to have a lined and unlined portion of the tailings impoundment?

2. It is my understanding there is an inherent problem of seam failures with 40 mil HPDE liners that is not the case with 60 mil HPDE. If this is correct, then the thicker liner should be considered.

Demonstration of Technical Capability

The ADEQ staff needs to be assured that the applicant is technically capable of operating the facility to the conditions of the permit. Therefore, additional information is requested concerning the technical capability of the applicant. Please elaborate as to the applicant's technical ability to design, construct, and operate the mine.

1. Provide specific information about the past projects and locations in which Morgan Mining Company has been involved. Reference should be made especially to their past performance concerning environmental protection at these facilities.

2. Information is also requested as to the credentials of Lyntek Incorporated. What previous mining projects have been engineered by Lyntek? And, to what extent was Lyntek involved in these projects?

Demonstration of Financial Capability

Proof of the applicant's financial capability to comply with the permit terms and conditions, must be provided for review by the ADEQ staff.

1. The information provided must be adequate to access the applicant's financial capability to construct, operate, close, and complete post-closure care of the mine.

This information must also provide a cost estimate of each of these steps of the mine life.

2. The chief financial officer of Morgan Mining Company must supply a statement with evidence that the applicant is financially capable of meeting these estimated costs.

Closure and Post-Closure

As a necessary part of a mining operation, a tailings impoundment also necessitates a post-closure plan to monitor the pollutants that will remain in the impoundment.

1. As part of the closure plan, an evaluation of the pollutants that will remain in the tailings impoundment is necessary.

2. Submit a schedule and description of the physical inspections to be conducted for the tailings impoundment and monitor well during the post-closure period.

3. A description of the post-closure monitoring procedures to be implemented must be provided, as well as, the expected duration of the post-closure activities.

4. Present a description of the limitation on the future land and water usage as a result of the mining operation.

Hydrology

Additional information concerning the aquifer and groundwater quality is necessary. Please compile and present the following information:

1. Provide information concerning the characteristics of the aquifer including depth, flow direction, hydraulic conductivity, and transmissivity with supporting documentation.

2. More detailed information is requested for the six holes drilled at the mine site, including detailed lithologic logs, drillers logs, the date of groundwater measurements and quality.

3. If possible, provide information concerning the seasonal variations in the water table elevations.

4. The local ambient local groundwater quality must be established. Please utilize the enclosed document entitled "Technical Guidance Document I" as a reference.

5. As this is a historic mining district, it is advisable to document any known preexisting soil contamination that might exist at the mine site.

6. Provide a description of all wells in the "well field" mentioned in attachment 11, page 2, part 2.6. Please include well logs, water level measurements and dates, well yields, and construction information.

Thank you for the opportunity to review your application. If you have any questions concerning the above information, please feel free to contact me at (602) 207-4690.

Sincerely,

Larry Meier

Larry Meier
Plan Review and Permits Section
Office of Water Quality

LFM:lfm

enclosure

copy: Thomas K. Randall, Lyntek, Inc.

9/14 letter from BLM + response from Morgan

to Golden Eagle Mine
Mine
file.

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
KINGMAN RESOURCE AREA
2475 BEVERLY AVENUE
KINGMAN, ARIZONA 86401

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
3809 (025)
AZA-27773

September 14, 1993

Mr. Thomas Randall
Lyntek, Incorporated
775 Mariposa
Denver, Colorado 80204

Subject: Golden Eagle Project

Dear Mr. Randall:

I would like to update you regarding our staff comments concerning the environmental assessment for the Golden Eagle mine, which has been assigned EA number EA-AZ-025-93-069.

The first comments concern revegetation of the site:

> It should be made clear in the document that revegetation with native species will be attempted on those areas where feasible. A seed mix and application method will be supplied by the Bureau of Land Management prior to closure.

Regarding protected plants:

> First, a reasonable estimate of the number of plants involved should be supplied. The number of individuals involved will determine the scope of any problem in this regard. Second, on-site transplant of some species for use in reclamation, particularly larger cactus species, will probably not be effective. It would be best to salvage such plants via sale to the general public through arrangement with the Bureau of Land Management.

The second series of comments concerns the cultural resources aspects of the document:

> The opening summary on page one states that no cumulative or significant adverse impacts were identified during the evaluation. This seems contradictory to the archeological clearance done by SWCA, Incorporated, which identified most of the project site as a large historic mining site, AZ F:12:18 (ASM), which may be eligible for the National Register of Historic Places. The clearance report further recommended the development of site-specific mitigation.

This mitigation plan must be developed and approved prior to approval of the environmental assessment. Approval must be forthcoming first, from the Bureau of Land Management, and second, from the State Historic Preservation Office. The mitigation plan may be developed by a permitted archeological group such as SWCA, Incorporated, or any other authorized archeological consultants.

On page 37, the document states that the cultural survey identified prehistoric and historic sites. In fact, the report designated one site with four loci.

While the stone structure (locus 4) may be outside the claim block, it is not clear from figure 3 in the environmental assessment that the structure will not be affected by the haul road. There appears to be a conflict in this regard.

Any questions may be directed to John Thompson, Area Geologist, at (602) 757-3161.

Sincerely,

For Ken R. Drew
Area Manger

cc: Mr. A. W. Vander Pyl
Morgan Mining Company
2880 South Locust, Apartment 702-S
Denver, Colorado 80222

LYNTEK
775 Mariposa Denver, Colorado 80204
(303) 623-8365 FAX (303) 623-0342

Mr. Larry Meier
Office of Water Quality
Arizona Department of Environmental Quality
3033 North Central Avenue
Phoenix, Arizona 85012

December 14, 1993

RE: MU93:0176
Golden Eagle Mine - Aquifer Protection Permit Application
Answers to Technical Questions

Dear Mr. Meier:

This letter is intended to present answers to questions that were raised by your department during the Completeness Review of the Golden Eagle APP. All references follow the format presented in your letter to Mr. Adrian Vander Pyl dated September 2, 1993.

Location Map

1. This map is referred to as Figure 1 in the APP. Two copies of the revised map are included with this letter under Tab 1.

Upon further investigation into the locations of the wells listed in the table on the map, it was found that several of the wells were not within the 1/2 mile distance from the Golden Eagle claim package. Well 1 is located within 1/2 mile of the property. Cyprus Mineral Park was asked for information on this well. They have no knowledge of it's location or condition.

Wells 2 and 3 are on State of Arizona lands within 1/2 mile of the property. Inquiry at the State Land Department revealed that both of these wells are actually old mine shafts that have water in them. They have been leased to Cyprus. Again, Cyprus claims no knowledge of these wells.

Wells 4 and 5 are located in Section 31 and may or may not be within 1/2 mile of the property. Again these are Cyprus wells and they claim no knowledge of location or information. Well 4 is listed as dry on the Department of Water Resources Well Registry Report.

Well 6 is located more than 1/2 mile from the property. No additional information has been sought concerning this well.

Well 7 is located generally in T22N R17W Section 5. This well may or may not be within 1/2 mile of the property. Repeated efforts were made to contact the owner to no avail. The well is listed on the Department of Water Resources Well Registry Report as being 600 feet deep; however, no yield or quality information is included.

2. Land status of neighboring lands has been obtained and is indicated on Figure 1. Land status has been obtained from several sources. A land status map included in a Cyprus geology report by Kenneth T. Bondurant dated May, 1989 shows land status as of 1987. All of the adjacent land is owned by the Bureau of Land Management with the known claim holders shown on the map. Cyprus has been very helpful in offering additional information on lands to the East of the property; also included on the map.

Site Map

1. The requested legend has been included on new copies of this Figure designated as the General Site Layout, Drawing No. 9238400D, Revision A. Two copies of the revised figure are included with this letter under Tab 2.

2. The proposed POC has been identified on the map at the location designated 35°/20'/10" latitude, 114°/9'/7" longitude.

The POC has been located with the help of the geological cross section included under the referenced section of this letter subtitled Hydrology.

Characterization of Discharge

The information contained herein will clarify the ambiguities apparent in Attachment 4 and Appendix A. The entire Attachment 4 has been re-written to reflect the actual procedures used to analyze the samples and is included under Tab 3 of this letter. The sample designations and descriptions have been clarified in Attachment 4 and Appendix A. The new pages for Appendix A are attached under Tab 4.

The attached new pages of Attachment 4 clearly identify the samples designated as 5-6 #1 and 5-6 #2 as waste rock samples, sample 5-6 #3 as the ore sample and sample Golden Eagle Tailings (Bench Test) as the tailing sample. Sample descriptions have been added to the Hazen Test Reports in Appendix A. The sample designations and the type of analytical procedure for each sample have also been added to Table 1, Attachment 4. Table 1 as is originally appeared, did include the ore sample results in the third column, although mislabeled under the "Tailings" category.

The types of analytical procedure utilized for the samples were TCLP for the tailing sample and SPLP for the waste and ore samples. The AGP was conducted on the waste and ore samples.

4. The lithologic descriptions for the waste and ore rock types are included as section 3.3 of the revised Attachment 4 under Tab 3 of this letter. The detailed lithologic logs of the exploration drill holes are included as Section 5.0 of the revised Attachment 4.

Demonstration of BADCT

1. The area identified as "Unlined Tailing Impoundment Basin" on Figures 3 and 4 under Tab 15 in the application document is actually the area above the "Lined Tailing Impoundment" area that will be excavated to allow for a 2:1 slope. New labels identifying the area in question as the "Excavated Area" have been added to Figures 3, 4, and 8. Copies of each of the revised drawings are included with this letter under Tab 5. The change in the label was also made on the "General Site Layout" full sized drawing included in the sleeve under Tab 2.

The profile shown on Figure 8 reveals the surface of impounded tailings will be at a lower elevation than the toe of the "Excavated Area". The same Figure also shows that a drainage ditch separates the "Excavated Area" from the "Lined Tailing Impoundment". Figure 12 shows the area intercepted by this ditch as Area C-1.

2. The question of seam integrity of 40 mil HDPE liner systems does not appear to be correct. According to literature published by National Seal Company, an industry leader in liner systems, the integrity of fabricated seams applied by the Fusion Welding method exhibit 100% of the original sheet's yield strength. Technically, the company reports 90% minimum due to the accuracy of the field testing equipment. This strength factor applies to all thicknesses of HDPE.

Enclosed under Tab 6 is a sampling of the literature detailing the methods of applying the bond and the results guaranteed for the finished seam. Also included is a section of the National Seal Company Construction Quality Control Manual detailing methods of application and testing relating to the Fusion Welding procedure.

Demonstration of Technical Capability

1. Morgan Mining Company has not been involved in any producing projects to date. Technical expertise will be obtained from the Engineers and Consultants involved with the development, operations, and reclamation of the Golden Eagle Project. Lyntek, Inc. will be involved with the project throughout the planning, construction, and production phases of the project. Reference is made under Item 2 of this Section to Lyntek experience in these areas.

During the entire operating life of the Golden Eagle Project, Morgan Mining Company will also be working in close contact with managers and engineers from Cyprus Mineral Park to assure that all regulatory and environmental requirements are satisfied.

2. The following section is intended to answer the question of Lyntek, Inc. experience and qualifications in the technical areas of designing, building, operating and closing mining properties similar to the Golden Eagle Project. Following is a listing of projects similar to the Golden Eagle including a brief description of the Lyntek participation.

A. Resurrection/Asarco - Leadville, Colorado

Lyntek was retained to oversee QA/QC during installation of the Water Treatment Plant at the YAK tunnel in Leadville, Colorado. Lyntek has also been responsible for detailed design, fabrication, and installation of several modifications to the solution handling and structural components of the facility. Lyntek also is provided two full time, HAZMAT trained, certified water treatment plant operators during the startup operations of the plant.

B. Dawn Mining - Ford, Washington

A processing plant was designed to remove manganese, aluminum, uranium and other metals from mine discharge water. Laboratory bench-scale work was performed at International Process Research Corp (IPRC) and at Lyntek's in-house facilities. The treatment system was designed for 300 GPM with expansion capability to 500 GPM. Lyntek, Inc. was responsible for the construction, start-up, and successful operation of this plant.

C. Solution Gold - Central City, Colorado

Lyntek, Inc. was responsible for the design, construction, and start-up of a heap leaching facility for processing mine dumps and commercial excavated material in an area that has many EPA controlled sites. The permitting documents were prepared by Lyntek with follow through completion of the permitting process leading to commissioning of the facilities.

D. Nevada Gold Fields, Inc. - Barite Hill, McCormick, S.C.

Design and supervision of laboratory and plant scale cyanide detoxification study leading to methods for treatment and removal of spent leach residue from a re-usable leach pad system. Lyntek was also instrumental in the design and evaluation of two distinct leach plants; one being an asphalt on/off pad system, and the other being a permanent HDPE liner system. The two systems were evaluated for technical merits relating to operating efficiencies, environmental consequences, and ease of closure activities in an area that is prone to significant problems with high rainfall resulting in a net positive water balance.

E. Malheur Mining Company - Malheur County, Oregon

Lyntek, Inc. had the sole responsibility for design and permitting of the heap leaching facility. Significant participation was required at the time with State officials due to the preliminary nature of regulation relating to cyanide usage in the state of Oregon at the time. The entire facility has been permitted, however production has not been initiated due to market conditions relating to the current price of gold.

The following section indicates some of the personal experience of Lyntek personnel involved in the design, permitting, construction, and operation of industrial mining plants throughout the United States. These descriptions have been excerpted from the Resumes of key Lyntek personnel which are attached to this letter under Tab 7. Also attached are pages indicating some general information about Lyntek, Inc. as well as a general client list.

Nicholas S. Lynn, President, Lyntek, Inc., Denver Colorado

Responsible for design, consultation and start-up of several processing plants that treat ores or water in the areas of precious metals, copper, SX/EW, uranium, and industrial minerals. The projects include preparation of process data, permits, and paper documentation to aid in financing for both major and minor projects throughout the world.

Thomas K. Randall, Vice President and G.M., Calgom Mining Inc., Canyondam, California

Directed the operations of an open pit gold mining facility. This position, reporting directly to the president of Royal Gold, required complete control of all phases of mining including permitting, development, mining with company owned equipment and contractors, leaching and gold recovery, metal sales, and reclamation. Mining in California requires extensive coordination with regulatory agencies. Considerable experience was gained in dealing with County Planners, U.S. Forest Service District Personnel, and Water and Air Quality Regulators. Issues resolved related to new mine permitting, water quality planning concerning tailings disposal, interim and final reclamation planning and implementation, and erosion control.

Kenneth E. Smith, Process Supt., Canyon Resources, Lewistown, Montana

Responsible for design, purchasing, construction, and start-up of the process metallurgy, 1.7 million ton leach pad, recovery plant (Merrill-Crowe System), assay laboratory, and bullion processing facility. Duties involved daily operating and supervision of all personnel within these departments. The initial facility was expanded and modified in-house several times to provide for increased mining activities. Prior to project start-up, I designed and implemented the metallurgical program for project testing and feasibility. Additionally, I was the administrative supervisor of the crushing circuit. Responsible for detoxification and shut-down of spent heaps.

Anthony Kerr, Production Engineer, Lyntek, Denver, Colorado

Plant Operator at Yak Tunnel Waste Water Treatment Facility. Responsible for technical support and project engineering. Working knowledge of all aspects of project production including equipment listing and pricing, spreadsheet application, and collation of finished materials into a final copy. Also performed applications with Computer Aided Drafting (CAD) design. Field work includes the operations of the California Gulch Yak Tunnel Water Treatment Facility with emphasis on the computer controller position.

Demonstration of Financial Capability

1. A recent Balance Sheet for Morgan Mining Company was included in the APP Application dated July 1993 under Tab 8. An additional statement of Financial Capability mentioning specifics related to development of the Golden Eagle Mine is included in this letter under Tab 8. The above referenced Balance Sheet is also attached under Tab 8 of this letter.

The costs involved with construction through post closure for the Golden Eagle Project are estimated as follows:

Construction	
$851,000 including:	$250,000 Reclamation Bond $90,000 operating capital for first quarter of operations
Operating	Project will generate a positive cash flow after operating expenses during second quarter of operations.
Closure	
$250,000	Covered by Reclamation Bond held by Bureau of Land Management, Kingman District
Post Closure monitoring	Included in Reclamation Bond.

2. The Statement of Financial Capability referred to above is the statement of the chief financial officer of Morgan Mining Company.

Closure and Post-Closure

1. Refer to Hazen research data on tailings included in the revised Appendix A under Tab 4 of this letter.

2. Post-closure inspection and monitoring will commence immediately following permanent or temporary cessation of production operations. The program will consist of physical inspections of the tailings impoundment facility as well as monitoring the water levels and quality in the monitoring well and the lined tailing impoundment.

Physical inspection at the tailings impoundment will be conducted for erosion, bank failures, ingress or potential ingress of water into the tailing impoundment, integrity of the dam slopes and cover and seepage at any point around the toe of the impoundment

Immediately following closure and during the estimated six month reclamation period, the inspection and monitoring program will be conducted on a monthly basis. The inspections and sampling process will be conducted during the last week of the month, as close to the end of the month as possible.

The results of the program will be reported to the ADEQ Office of Water Quality in writing following the month in which the inspections were made and the samples were obtained. The analytical work on the sample will take approximately two weeks, with another week required to transport the samples and receive the results. The report will be prepared utilizing a standardized format. Preparation and transmission of the Monthly Monitoring Report will take about one additional week. The final anticipated date of submission would be the 25th of the month.

Once the reclamation activities have been concluded the inspection and monitoring program will be carried out on a quarterly basis following the same general guidelines as the monthly program, with inspections and sampling being conducted at the end of the quarter and reporting taking place on or about the 25th of the month following the end of the quarter. The same procedures and reporting format will be utilized.

3. The monitoring program will consist of measuring the water levels in the monitoring well and in the piezometer located on the tailings impoundment dam. A sample of the water contained in the monitoring well will be obtained and submitted for analysis of the Priority Pollutant Metals as well as the Major Cations/Anions. Strict sampling and chain of custody protocols will be followed.

During the six month reclamation period, monthly inspections and monitoring will be conducted. The quarterly monitoring program following completion of reclamation will continue for one full year after reclamation has been completed. After that year has expired, annual inspections will be conducted to complete the closure of the property.

Inspections and monitoring activities will be conducted for two additional years. Three and one half full years of data (twelve inspection and monitoring cycles) will provide sufficient indication of the integrity of the closure process.

Should discrepancies appear during the three and one half year inspection and monitoring period, then the quarterly cycle will be reinstated to continue until one full year of non-detect of pollutants has been accomplished, at which time the two additional years of annual inspection and monitoring will be conducted to complete the closure of the property.

4. The area encompassed by the property will have little limitation on future use. The land is now semi-arid with typical high desert vegetation and wildlife use. After the cessation of the mining cycle, the area of the tailings impoundment and plant site will be reclaimed by re-broadcast of reserved cover-soil and seeding with the mixture recommended by the BLM.

All disturbed areas, with the exception of the mine pit and high wall will be returned to the same or better environment for vegetation and wildlife. Inspection for erosion and plant growth will be made one year after the reclamation has been completed, with erosion problems corrected and additional seeding conducted as needed to establish acceptable plant growth.

The mine pit will remain dry after abandonment, requiring no additional mitigation efforts. The high wall will remain standing at an angle of between 50° and 60°. The pit and high wall areas will be posted and fenced to protect public safety.

The haul road will be left in place to allow access to the pit for wildlife and potential additional mineral assessment. It will be ripped to prevent excessive erosion. The high wall benches will be left in a condition with the ends accessible to the hillside, as they will potentially develop heavier growths of vegetation which will in turn attract wildlife. Eventually, the mine pit will take on the appearance of talus slopes, already common in the area.

Waste rock will not be present on the property after mining operations cease, except in small quantities used to build the mill pad and minor road fill. The waste in these structures will be re-contoured, capped with coversoil, and re-seeded as part of the reclamation activity. The majority of the waste rock will be deposited on the face of the existing Cyprus Mineral Park Tailings Impoundment.

Water use on the property will not change during or after the mining cycle. No ground water is present and no change is anticipated with this situation as the operation will be a non-

discharging facility. Surface water will likewise not be affected materially, since the contours and drainage patterns will be virtually the same after reclamation has been completed.

Hydrology

1. The Geological Cross Section prepared by Donald G. Bryant, and attached under Tab 9, indicates that aquifers are not present in the area of the Golden Eagle Mine. Mr. Bryant's technical qualifications are included with the geological information.

2. The additional information requested for the six drill holes in the vicinity of the tailings impoundment is provided in the form of the Detailed Lithological Descriptions included in Section 5 of the revised Attachment 4 under Tab 3. The coordinates and collar elevations of the holes are also included in the Table under Section 3.3 in the revised Attachment 4. The locations of the drill holes are already clearly marked on the General Site Layout, Drawing 9238400D, Revision B under Tab 2 of this letter. No ground water was encountered in any of the drill holes listed.

3. No aquifers exist as reference to Item #1, therefore no seasonal variations occur.

4. No aquifers exist, therefore ambient ground water quality cannot be determined.

5. Little surface disturbance in the Golden Eagle area has been reported in the past. According to a certified report by J.T. Jordan Engineering of Kingman, Arizona dated December 1962, all ore mined at the property after 1938 was shipped to mills off the property.

There is no evidence that milling was conducted on the property at any time before the 1938 date mentioned in the Jordan Engineering report. From inspection, it is evident that little waste rock was mined during the life of the mine, as large waste dumps are not present on the property.

Small waste dumps that are present from the numerous small shafts and adits appear to be predominately waste rock, probably from crosscutting type operations. The presence of oxidizing sulfide type mineral in the existing waste dumps is not indicated from inspection. The relatively arid climate has also prevented, and will prevent in the future, significant oxidation of the existing dumps.

There is no evidence of chemical or petroleum related contamination anywhere on the property.

6. The "well field" referred to in Attachment 11, page 2, part 2.6 will not exist. It was initially anticipated that water requirements would necessitate drilling of water wells on the property. Since water is not indicated at reasonable depths on the property, and since processing

make-up water will be obtained from Cyprus Mineral Park by previous agreement the need for producing water wells is not anticipated.

Mr Vander Pyl will be traveling to the Phoenix Arizona area January 12-13 and would like to request a meeting. Please call so that an appointment can be made. Thank you.

Mr. A.W. Vander Pyl
2880 South Locust
Apt 702-5
Denver, CO 80222
(303) 757-2070

Sincerely,

A.W. Vander Pyl

INDEX TO ATTACHMENTS

ATTACHMENT 4 - REVISED

CHARACTERIZATION OF DISCHARGE

TABLE OF CONTENTS

1.0 INTRODUCTION

Morgan Mining Company (MMC) will process gold ore in a closed circuit, environmentally safe and contained flotation plant. This plant will consist of a crushing and grinding circuit, flotation and thickening with the concentrate shipped off site for further processing. Following flotation, the barren ore, or tailings, will be pumped to a zero discharge tailings impoundment for final disposal (See Figures 5 and 6, Process Flow Diagrams, Appendix B).

2.0 HISTORY OF DISCHARGE

The Golden Eagle Mine is a new facility. There is no known history of gold ore processing or material discharge.

3.0 DISCHARGE CHEMISTRY

The Golden Eagle Mine will have no discharge points. To ensure completeness, the following have been identified as potential discharge points, Figure 4, Mine Site Detail:

1.	Tailings Impoundment	(Site 001)
2.	Tailings Pipeline	(Site 002)
3.	Process Plant	(Site 003)
4.	Water Reclaim Tank	(Site 004)

In order to quantify the chemistry and possible toxicity of potential discharge., MMC collected samples of ore, tailings and waste rock. These samples were subjected to a range of chemical analyses, including EPA (Environmental Protection Agency) designed TCLP (Toxicity Characteristic Leach Procedure), SPLP (Synthetic Precipitation Leaching Procedure), and AGP (Acid Generation Potential) (Appendix A). The waste and ore samples were analyzed by the SPLP and AGP tests, and the tailing sample was analyzed by the TCLP.

3.1 Description of Samples

Waste

Samples were taken from the surface of the designated pit area. The two samples are well representative of the barren rock which will be utilized for general construction fills and for armorizing the face of the Cyprus Mineral Park tailing dam against erosion.

Ore

The sample was obtained by compositing drill cuttings from ore grade intervals encountered during exploration drilling. The same samples were subsequently utilized for metallurgical test work from which the tailing sample was obtained.

Tailings

Samples were collected as the filtered flotation tailing from metallurgical testwork carried out by Hazen Research in June 1992. The sample is representative of the flotation tailing from the process plant which will be dispatched to the tailings impoundment.

3.2 Geochemistry

A TCLP test was conducted on a metallurgical sample representative of flotation tailing. SPLP tests were performed on samples of waste rock and ore from the Golden Eagle property. The results of these tests are contained in Appendix A, Tailing, Waste Rock, Ore, and Soil Characterization.

3.2.1 TCLP Test

The Toxicity Characteristic Leach Procedure (TCLP) is an EPA designed procedure to simulate the chemical environment that might exist in the worst case scenario when industrial wastes are co-disposed with municipal wastes within a landfill. The test replaces the EP (Extractive Procedure) leach test as the recommended procedure for environmental evaluation of the potential Toxicity Characteristic of solid waste, following criticism that the EP test provided an unrealistic measurement of waste toxicity, give results which were not systematically reproducible and was a test that was not easily conducted.

The Toxicity Characteristic of solid waste is defined in Federal Report 40 CFR 261 as : *"A solid waste exhibits the characteristic of toxicity if, using the test methods described...the extract from representative sample of the waste containes any of the contaminants listed in ... Table 1...at the concentration to or greater thatn the respective value given in the table."*

The EPA bases all regulatory levels for hazardous chemicals on health-based concentration thresholds modified for dilution/attenuation factor specific to each chemical. The *concentration threshold* indicates how much of the chemical adversely affects human health, while the *dilution/attenuation factor* (DAF) indicates how easily the chemical can seep (or "leach") into ground water.

Contaminant concentrations are regulated not to exceed the national Interim Drinking Water Standards in any down gradient wells, after allowing the natural dilution and/or attenuation during groundwater transport. The DAF Factors have been set by the EPA following sophisticated computer modelling and practical research into groundwater movement and metal transport.

Table 1 Maximum Concentration of Contaminants for the Toxicity Characteristic with Test Results for Golden Eagle Samples

CONTAMINANT	REGULATORY LEVEL (mg/L)	Waste #1	Waste #2	Ore	Tailing
		Sample No. 5-6 #1	Sample No. 5-6 #2	Sample No. 5-6 #3	
		SPLP mg/L	SPLP mg/L	SPLP mg/L	TCLP mg/L
Arsenic	5	0.2	0.1	<0.1	<0.1
Barium	100	<0.5	0.8	<0.5	0.5
Cadmium	1	<0.02	<0.02	<0.02	<0.02
Chromium	5	<0.05	<0.05	<0.05	<0.05
Lead	4	<0.3	<0.3	<0.3	<0.3
Mercury	2	<0.001	<0.001	<0.001	0.0003
Selenium	1	<0.02	<0.02	<0.2	0.02
Silver	5	<0.05	<0.05	<0.05	<0.05

The basic procedures for the TCLP and EP tests are the same, consisting of the extraction by acid leaching of contained metals from a finely crushed and ground sample and the analysis of this extract of arsenic, barium, cadmium, chromium, lead, selenium and silver by inductively Coupled Plasma techniques and for mercury by Atomic Adsorption Spectrometry.

As the Toxicity Characteristic is designed primarily for the evalutaion of municipal landfills which combine both industrial and household waste the EPA also provide maximum concentrations for a range of organic compounds. In the Golden Eagle case, is not appropriate to include the organic compounds in the analyses as mine waste dumps contain only naturally occurring rock material with no industrial waste.

The major differences between the TCLP and the EP procedures lie in the extraction fluid use (TCLP uses a more acidic leaching fluid for alkaline wastes), the liquid/solid separation techniques, the methods used for the particle size reduction, the extraction vessels used, the agitation procedures, the extraction time and the required quality control procedures.

3.2.2 SPLP Tests

Detailed information regarding the SPLP Tests were not available for inclusion in this discussion. The SPLP Tests were performed on the samples of waste and ore.

3.2.3 Acid Generation Potential

The Acid Generation Potential (AGP) or Acid Neutralization Potential is described in the U.S. Department of Commerce National Technical Information Service bulletin PB-280 495, also referenced as EPA 600/2-78-054. The Acid Generation Potential of surface disturbances such as highway construction and mining relates primarily to the exposure of iron disulfide to the atmosphere and their subsequent oxidation. The evaluation of the AGP is undertaken using a chemical technique called *acid based accounting* which relates the maximum potential acidity from total or pyritic sulphur with neutralization potential of contained alkaline carbonates, exchangeable bases, weatherable silicates or other rock sources capable of neutralizing strong acids.

The amount of neutralizing bases present in a sample is determined by treating the sample to a known volume of standardized hydrochloric acid, heating to ensure complete reaction between the acid and the neutralizes, and then measuring the volume of unconsumed acid. From the acid base account, potential toxic material is defined as any rock or earth material having a net potential deficiency of 5 tons of calcium carbonate material or more per 1000 tons of material that is an AGP of 0.5%.

Golden Eagle AGP Results:

AGP testing of the Golden Eagle waste rock and ore were conducted as reported in Appendix A, Table 4, confirming that waste rock and ore would not generate acid waters from surface run-off.

3.3 Lithologic Descriptions of Ore and Waste Rock

Detailed lithologic logs are included with this letter as part of this revised Attachment 4. The drill holes detailed are the ones in the general area of the mine site with the holes No. E-2 through E-5 located generally in the mill and tailings areas and hole No. E-6 in the proposed pit.

3.3.1 Waste Rock

Waste rock that will be encountered is represented by most of the intervals in holes E-1 through E-3, the upper 45 feet of hole E-4, the upper 60 feet and lower 200 feet of hole E-5, and the upper 80 feet of hole E-6.

Generally, the waste rock consists of pre-cambrian schist ranging in composition from quartz sericite to biotite amphibolite, and pre-cambrian granite and gneiss. The granite has intruded the schist formations forming numerous dikes and sills throughout. Although mineralization has been found to occur at the contacts between schist and granite, generally the schist and granite gneiss structures are waste rock.

3.3.2 Ore

Zones encountered during drilling that represent ore are the intervals between 45' and 65' between 105' and 150' in hole E-4, between 60' and 80' in hole E-5 and generally between 80' and 225' in hole No. E-6.

Rocks present in the ore zones consist principally of quartz veins containing sulfide minerals. The widths of the veins vary, normally containing pyrite, chalocopyrite, sphalerite and often minor galena, arsenopyrite, tennanite and tetrahadrite. Additional alteration of the vein wall rocks cutting through the schist has produced distinct areas of gouge containing clay, sericite and chlorite minerals

Open pit mining will extract adjacent areas to the actual veins themselves. Therefore, much of the ore will be made up mainly of the schist, granite, and gneiss rocks that predominate the entire mining area.

DRILL HOLE LOCATION AND DEPTH

SAMPLE POINT	LATITUDE	LONGITUDE	COLLAR ELEVATION	DEPTH	ANGLE
E-1	. 35^0 20' 27"	114^0 8' 40"	4050'	210'	55^0
E-2	35^0 20' 09"	114^0 8' 31"	4250'	140'	55^0
E-3	. 35^0 20' 10"	114^0 8' 35"	4300'	225'	60^0
E-4	. 35^0 20' 07"	114^0 8' 31"	4300'	. 150'	55^0
E-5	35^0 20' 04"	114^0 8' 29"	4360'	280'	70^0
E-6	. 35^0 20' 02"	114^0 8' 30"	4320'	230'	65^0

3.4 Reagents

The following reagents will be used in the gold recovery process.

Soda Ash Na_2CO_3

Use: pH Adjust 7.0 to 8.0 Dosage: L.S lb/ton

A-208 Sodium diethyl and sodium di-secondary butyl dithiophosphate

Use: Collector Dosage: 0.10 lb/ton

A-350 Potassium amyl xanthate

Use: Collector Dosage: 0.08 lb/ton

COPPER SULFATE As: $CuSO_4.7H_2O$
Use: Conditioner Dosage: 0.50 lb/ton

MIBC Methyl Isobutyl Carbinol
Use: Frother Dosage: 0.005 lb/ton

F-65 Generally Polyglycol
Use: Frother Dosge: 0.005 lb/ton

3.5 Septic Waste

A portable septic system will be installed at the processing plant for use by MMC and contract personnel. This system will be completely contained with zero discharge to the surrounding environment.

4.0 RATE OF DISCHARGE

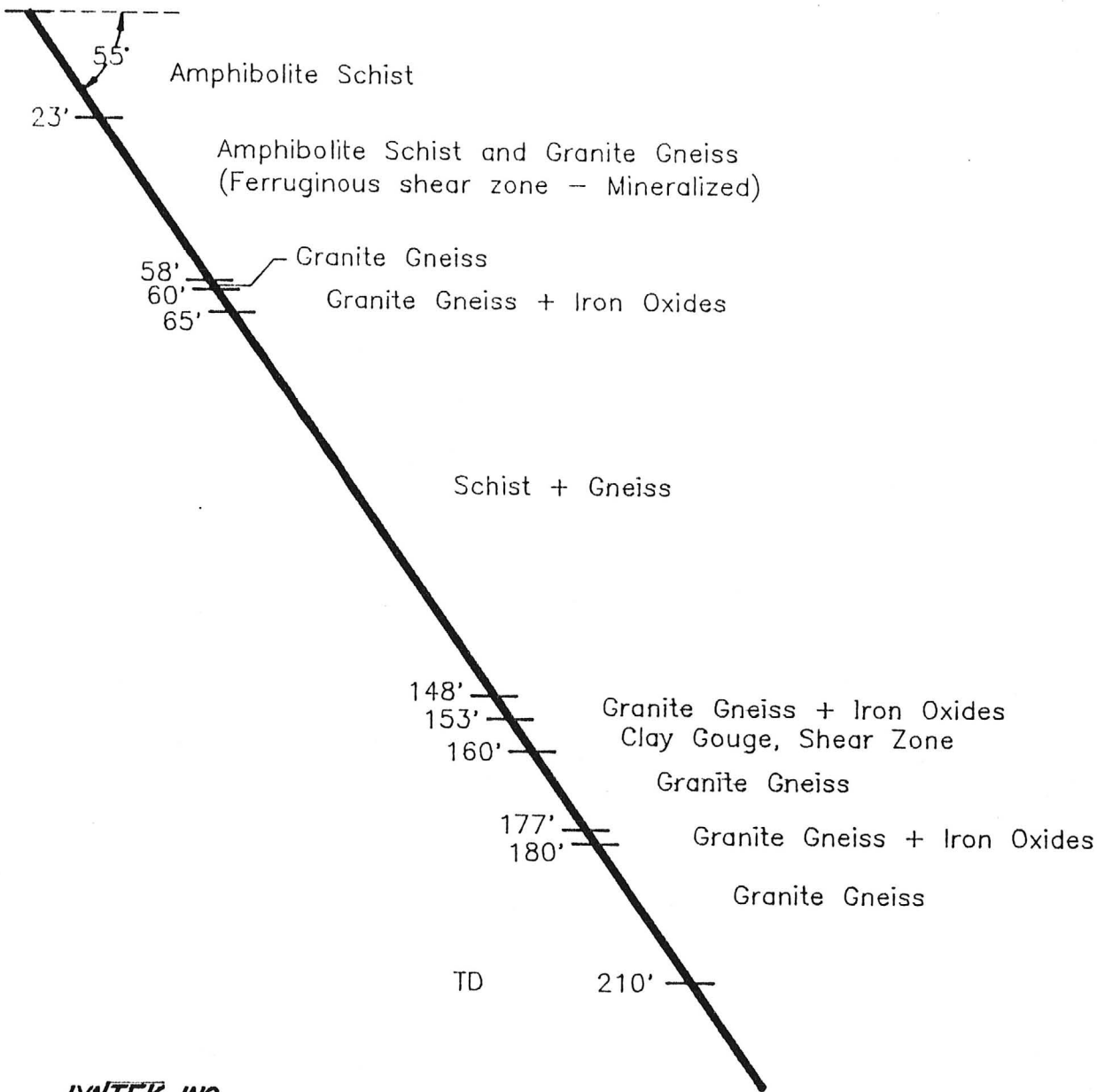
The Golden Eagle Mine surface discharge facility has been designed to operate as a zero discharrge facility. No discharge rate is therefore anticipated. The process plant is designed to operate at a daily rate of approximately 300 tons per day. A similar amount of spent ore will be deposited in the tailings impoundment on a daily basis.

5.0 DETAILED LITHOLOGIC DIAGRAMS

The following are detailed descriptions of the rock types encountered during the drillng of holes E-1 through E-6.

LITHOLOGIC DESCRIPTION

Drill Hole No. E-1
Collar Elev. 4098



LYNTEK INC.

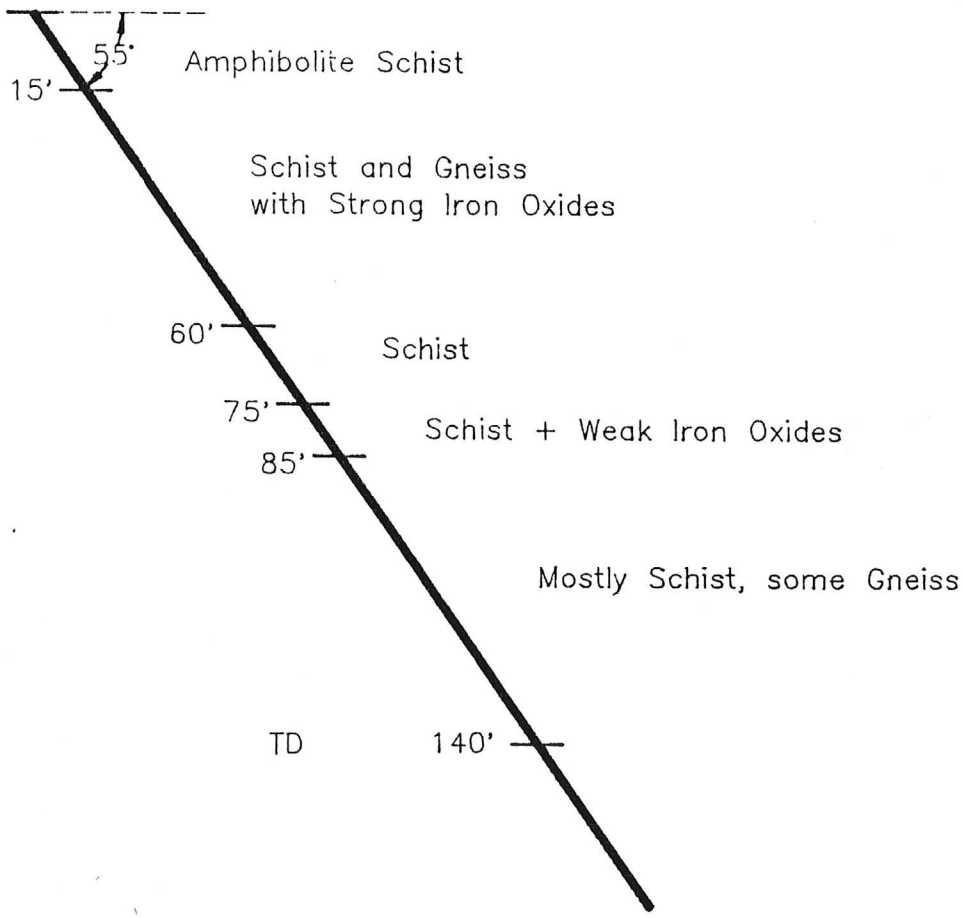
MORGAN MINING CO.

GOLDEN EAGLE MINE

Scale: 1"=30'-0"

LITHOLOGIC DESCRIPTION

Drill Hole No. E-2
Collar Elev. 4136



LYNTEK INC.

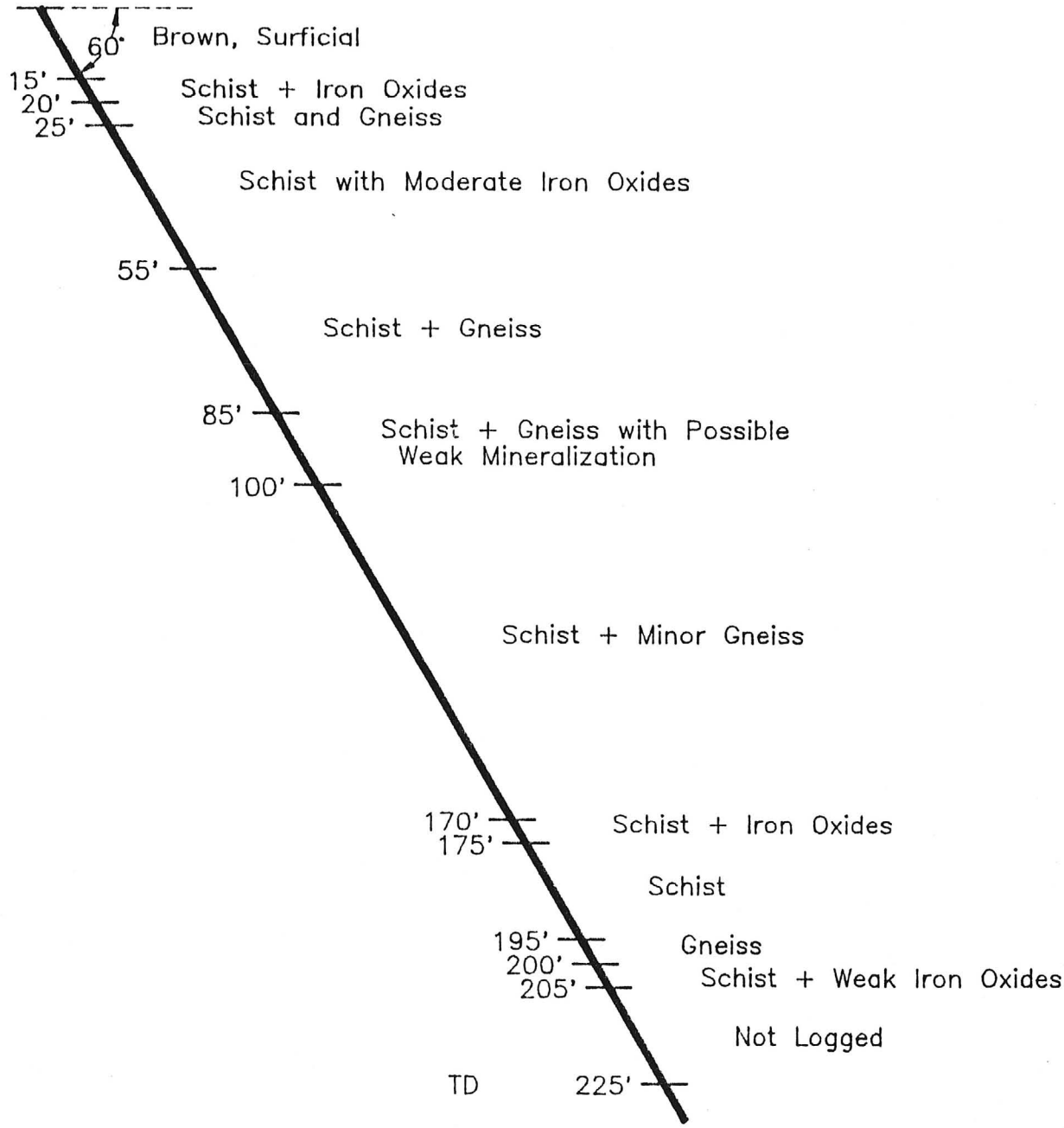
MORGAN MINING CO.

GOLDEN EAGLE MINE

Scale: 1"=30'-0"

LITHOLOGIC DESCRIPTION

Drill Hole No. E–3
Collar Elev. 4076



LYNTEK INC.

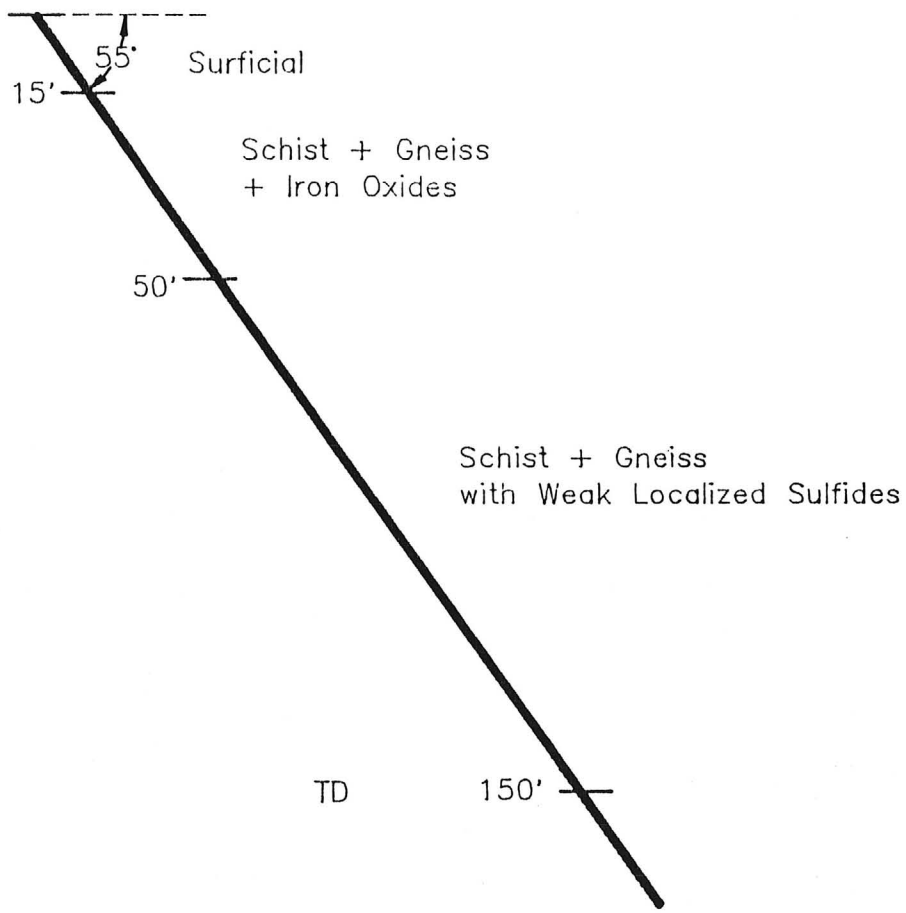
MORGAN MINING CO.

GOLDEN EAGLE MINE

Scale: 1"=30'–0"

LITHOLOGIC DESCRIPTION

Drill Hole No. E-4
Collar Elev. 4127



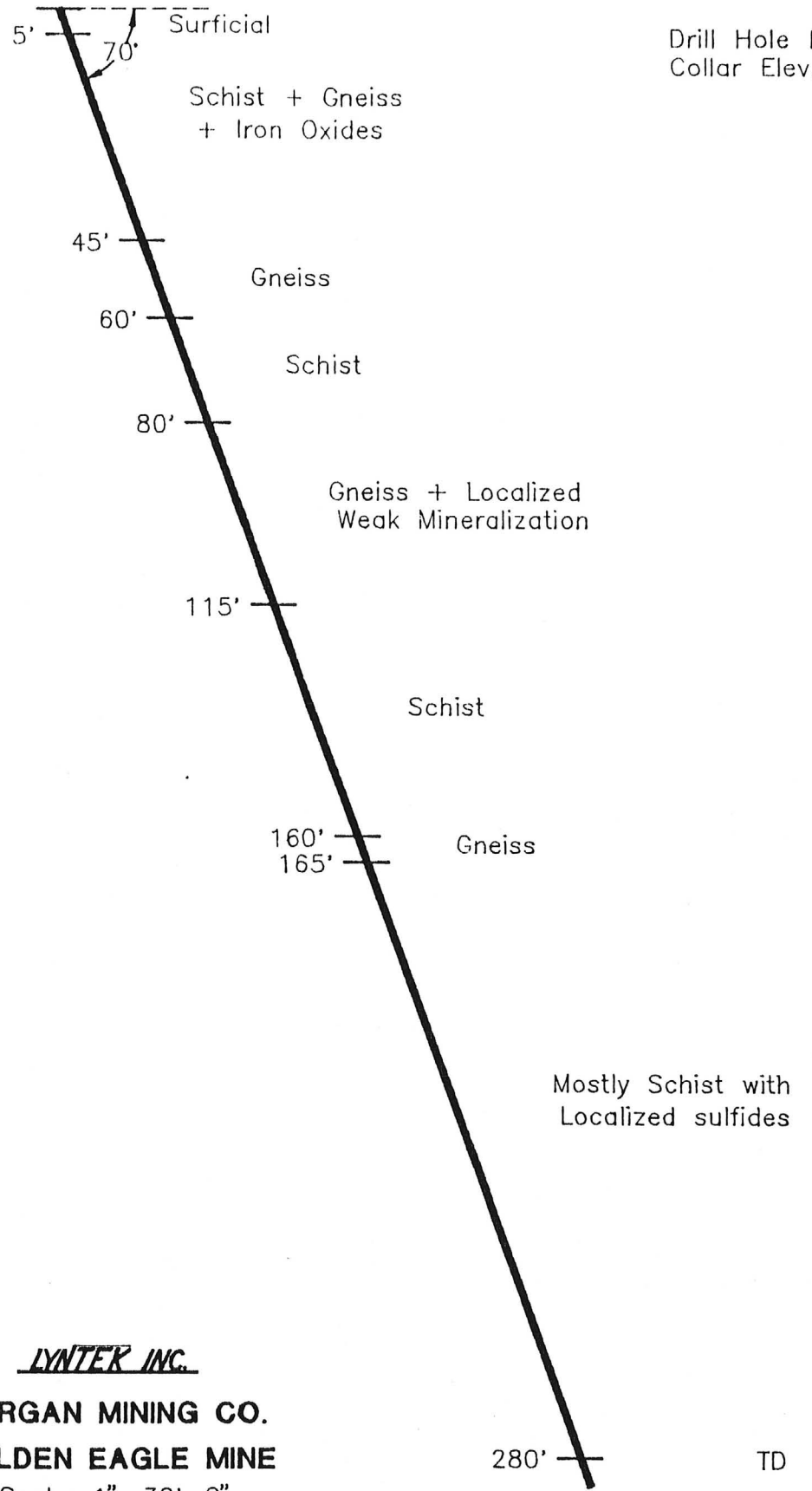
LYNTEK INC.

MORGAN MINING CO.

GOLDEN EAGLE MINE

Scale: 1"=30'-0"

LITHOLOGIC DESCRIPTION



Drill Hole No. E-5
Collar Elev. 3947

LYNTEK INC.

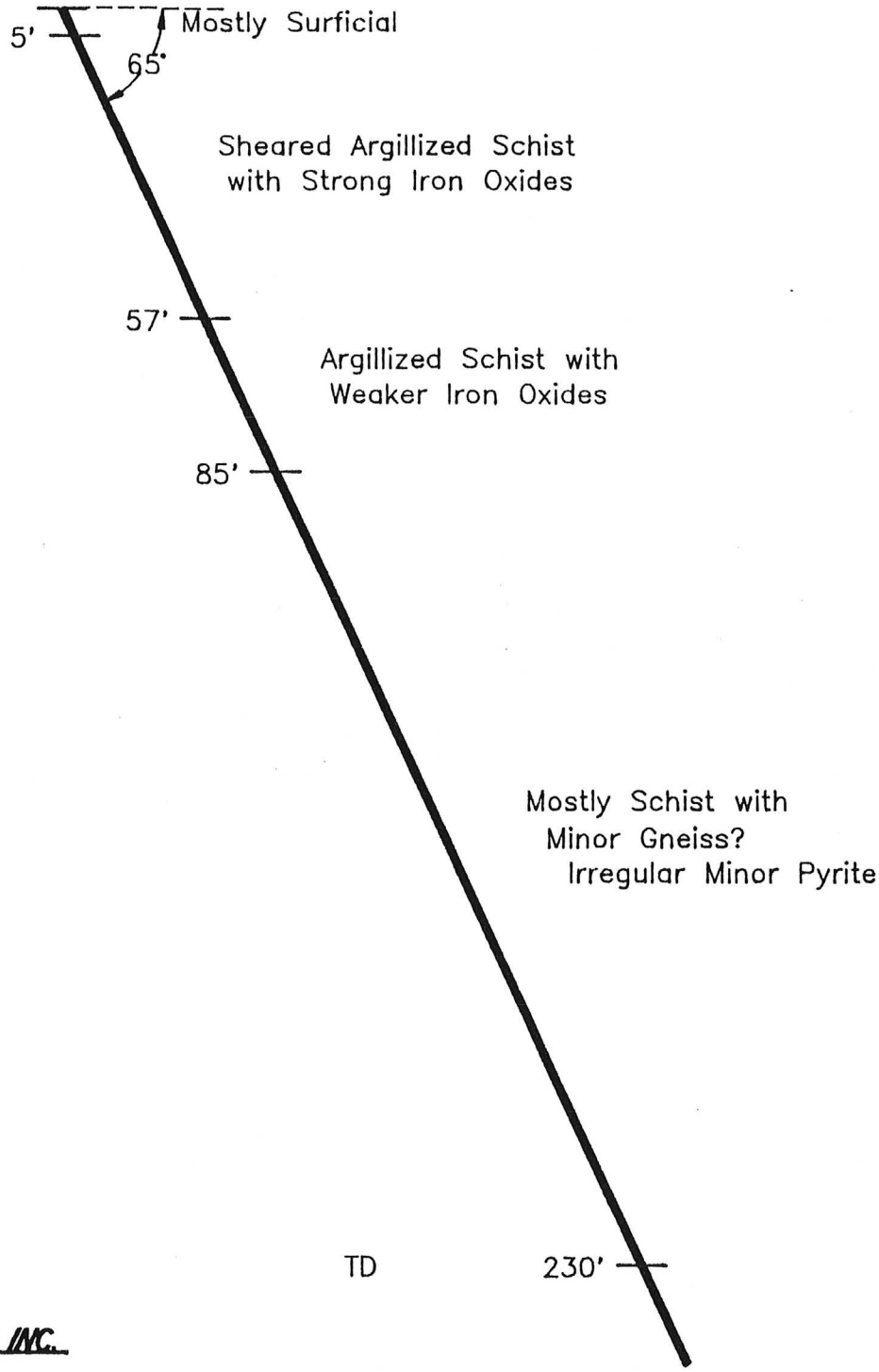
MORGAN MINING CO.

GOLDEN EAGLE MINE

Scale: 1"=30'-0"

LITHOLOGIC DESCRIPTION

Drill Hole No. E-6
Collar Elev. 4052



LYNTEK INC.

MORGAN MINING CO.

GOLDEN EAGLE MINE

Scale: 1"=30'-0"

MORGAN MINING LTD.

December 17, 1993

Mr. Mason Coggins, Director
AZ Mines & Mineral Resources
1502 W. Washington
Phoenix, AZ 85007

Dear Sir:

Enclosed are letters from ADEQ and BLM regarding our application for mining permits. These should bring you up to date on current status in the permit process for Morgan Mining, Ltd.

Don Bryant is currently working on pit design relative to ore body. This work will subsequently be turned over to Ed Torgesen for final design work.

If you have any questions, please feel free to contact either me or Don.

Best regards,

MORGAN MINING LTD.

Adrian W. Vander Pyl

Adrian W. Vander Pyl

jm

Encls.

AWV:jm

2880 South Locust Street, #702 South • Denver, CO 80222 • (303) 757-2070
401 South LaSalle Street, Suite 1600 • Chicago, IL 60605 • (312) 786-5401

HAZEN

Hazen Research, Inc.
4601 Indiana St. • Golden, Colo. 80403
Tel: (303) 279-4501 • Telex 45-860
FAX: (303) 278-1528

DATE June 9, 1992
HRI PROJECT 002-78H
HRI SERIES NO. E189/92-1
DATE RECD. 05/11/92
CUST P.O.#

Morgan Mining, Ltd.
Adrian Vander Pyl
2880 South Locust, Apt. 702S
Denver, CO 80222

REPORT OF ANALYSIS

Synthetic Precipitation Leaching Procedure

SAMPLE NO. E189/92-1
SAMPLE IDENTIFICATION: 5-6 #1 . Golden Eagle Waste #1

	Result mg/l	Limit mg/l	Spike Recovery,%	Method	Date Completed
Arsenic	0.2	5.0	99	EPA 206.4	05/21/92
Barium	<0.5	100	104	SW846 6010	06/02/92
Cadmium	<0.02	1.0	102	SW846 7130	05/21/92
Chromium	<0.05	5.0	119	SW846 7190	05/21/92
Lead	<0.3	5.0	104	SW846 7420	05/21/92
Mercury	<0.001	0.2	95	SW846 1312	05/15/92
Potassium	3.12	NA	101	SW846 7610	06/03/92
Selenium	<0.02	1.0	69	SW846 7740	06/03/92
Silver	<0.05	5.0	102	SW846 7760	05/21/92

Extraction Fluid Used: pH 5
Date Extraction Started: 05/13/92
Final pH: 7.68

By:
Robert Rostad
Laboratory Manager

NOTE: The leach was done according to SW846 Method 1312.

HAZEN

Hazen Research, Inc.
4601 Indiana St. • Golden, Colo. 80403
Tel: (303) 279-4501 • Telex 45-860
FAX: (303) 278-1528

DATE June 9, 1992
HRI PROJECT 002-78H
HRI SERIES NO. E189/92-2
DATE RECD. 05/11/92
CUST P.O.#

Morgan Mining, Ltd.
Adrian Vander Pyl
2880 South Locust, Apt. 702S
Denver, CO 80222

REPORT OF ANALYSIS

Synthetic Precipitation Leaching Procedure

SAMPLE NO. E189/92-2
SAMPLE IDENTIFICATION: 5-6 #2 Golden Eagle Waste #2

	Result mg/l	Limit mg/l	Spike Recovery,%	Method	Date Completed
Arsenic	0.1	5.0	92	EPA 206.4	05/21/92
Barium	0.8	100	102	SW846 6010	06/02/92
Cadmium	<0.02	1.0	101	SW846 7130	05/21/92
Chromium	<0.05	5.0	118	SW846 7190	05/21/92
Lead	<0.3	5.0	103	SW846 7420	05/21/92
Mercury	<0.001	0.2	95	SW846 1312	05/15/92
Potassium	6.27	NA	106	SW846 7610	06/03/92
Selenium	<0.02	1.0	58	SW846 7740	06/03/92
Silver	<0.05	5.0	100	SW846 7760	05/21/92

Extraction Fluid Used: pH 5
Date Extraction Started: 05/13/92
Final pH: 7.52

By:
Robert Rostad
Laboratory Manager

NOTE: The leach was done according to SW846 Method 1312.

Hazen Research, Inc.
4601 Indiana St. • Golden, Colo. 80403
Tel: (303) 279-4501 • Telex 45-860
FAX: (303) 278-1528

DATE June 9, 1992
HRI PROJECT 002-78H
HRI SERIES NO. E189/92-3
DATE RECD. 05/11/92
CUST P.O.#

Morgan Mining, Ltd.
Adrian Vander Pyl
2880 South Locust, Apt. 702S
Denver, CO 80222

REPORT OF ANALYSIS

Synthetic Precipitation Leaching Procedure

SAMPLE NO. E189/92-3
SAMPLE IDENTIFICATION: 5-6 #3 Golden Eagle Ore

	Result mg/l	Limit mg/l	Spike Recovery,%	Method	Date Completed
Arsenic	<0.1	5.0	90	EPA 206.4	05/21/92
Barium	<0.5	100	101	SW846 6010	06/02/92
Cadmium	<0.02	1.0	100	SW846 7130	05/21/92
Chromium	<0.05	5.0	115	SW846 7190	05/21/92
Lead	<0.3	5.0	102	SW846 7420	05/21/92
Mercury	<0.001	0.2	95	SW846 1312	05/15/92
Potassium	8.75	NA	68	SW846 7610	06/03/92
Selenium	<0.02	1.0	58	SW846 7740	06/03/92
Silver	<0.05	5.0	100	SW846 7760	05/21/92

Extraction Fluid Used: pH 5
Date Extraction Started: 05/13/92
Final pH: 7.75

By: Robert Rostad
Laboratory Manager

NOTE: The leach was done according to SW846 Method 1312.

Hazen Research, Inc.
4601 Indiana St. • Golden, Colo. 80403
Tel: (303) 279-4501 • Telex 45-860
FAX: (303) 278-1528

DATE	March 26, 1992
HRI PROJECT	002-57G
HRI SERIES NO.	C164/92
DATE RECD.	03/09/92
CUST P.O.#	None Rec'd

Morgan Mining, Ltd.
Adrian Van Pyl
2880 South Locust, Ste 702S
Denver, CO 80222

REPORT OF ANALYSIS

Toxicity Characteristic Leaching Procedure

SAMPLE NO. C164/92-1
SAMPLE IDENTIFICATION: Golden Eagle Tailings (Bench Test)

	Result mg/l	Limit mg/l	Spike Recovery,%	Method	Date Completed
Arsenic	<0.1	5.0	96	EPA 206.4	03/19/92
Barium	0.5	100	106	SW846 6010	03/18/92
Cadmium	<0.02	1.0	98	SW846 7130	03/19/92
Chromium	<0.05	5.0	96	SW846 7190	03/19/92
Lead	<0.3	5.0	107	SW846 7420	03/19/92
Mercury	0.0003	0.2	99	SW846 7470	03/24/92
Selenium	0.02	1.0	92	SW846 7740	03/23/92
Silver	<0.05	5.0	106	SW846 7760	03/20/92

Extraction Fluid Used: #1
Date Extraction Started: 03/11/92
Final pH: 5.42

By:
Robert Rostad
Laboratory Manager

NOTE: The leach was done according to SW846 Method 1311.

Hazen Research, Inc.
4601 Indiana St. • Golden, Colo. 80403
Tel: (303) 279-4501 • Telex 45-860
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DATE	June 9, 1992
HRI PROJECT	002-78H
HRI SERIES NO.	E189/92-4
DATE RECD.	05/11/92
CUST P.O.#	

Morgan Mining, Ltd.
Adrian Vander Pyl
2880 South Locust, Apt. 702S
Denver, CO 80222

REPORT OF ANALYSIS

SAMPLE NO. E189/92-1
SAMPLE IDENTIFICATION: 5-6 #1 Golden Eagle Waste #1

Potential Acidity, tons H^+/1000 tons Soil	<0.01
Potential Acidity, tons $CaCO_3$ equivalent/1000 tons Soil	<0.5
Neutralization Potential, tons $CaCO_3$ equivalent/1000 tons Soil	12.2

By:
Robert Rostad
Laboratory Manager

Hazen Research, Inc.
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FAX: (303) 278-1528

DATE	June 9, 1992
HRI PROJECT	002-78H
HRI SERIES NO.	E189/92-5
DATE RECD.	05/11/92
CUST P.O.#	

Morgan Mining, Ltd.
Adrian Vander Pyl
2880 South Locust, Apt. 702S
Denver, CO 80222

REPORT OF ANALYSIS

SAMPLE NO. E189/92-2
SAMPLE IDENTIFICATION: 5-6 #2 Golden Eagle Waste #2

Potential Acidity, tons H^+/1000 tons Soil	0.10
Potential Acidity, tons $CaCO_3$ equivalent/1000 tons Soil	5.0
Neutralization Potential, tons $CaCO_3$ equivalent/1000 tons Soil	23.5

By:
Robert Rostad
Laboratory Manager

Hazen Research, Inc.
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Tel: (303) 279-4501 • Telex 45-860
FAX: (303) 278-1528

DATE	June 9, 1992
HRI PROJECT	002-78H
HRI SERIES NO.	E189/92-6
DATE RECD.	05/11/92
CUST P.O.#	

Morgan Mining, Ltd.
Adrian Vander Pyl
2880 South Locust, Apt. 702S
Denver, CO 80222

REPORT OF ANALYSIS

SAMPLE NO. E189/92-3
SAMPLE IDENTIFICATION: 5-6 #3 Golden Eagle Ore

Potential Acidity, tons H^+/1000 tons Soil	0.22
Potential Acidity, tons $CaCO_3$ equivalent/1000 tons Soil	10.9
Neutralization Potential, tons $CaCO_3$ equivalent/1000 tons Soil	17.1

By:
Robert Rostad
Laboratory Manager

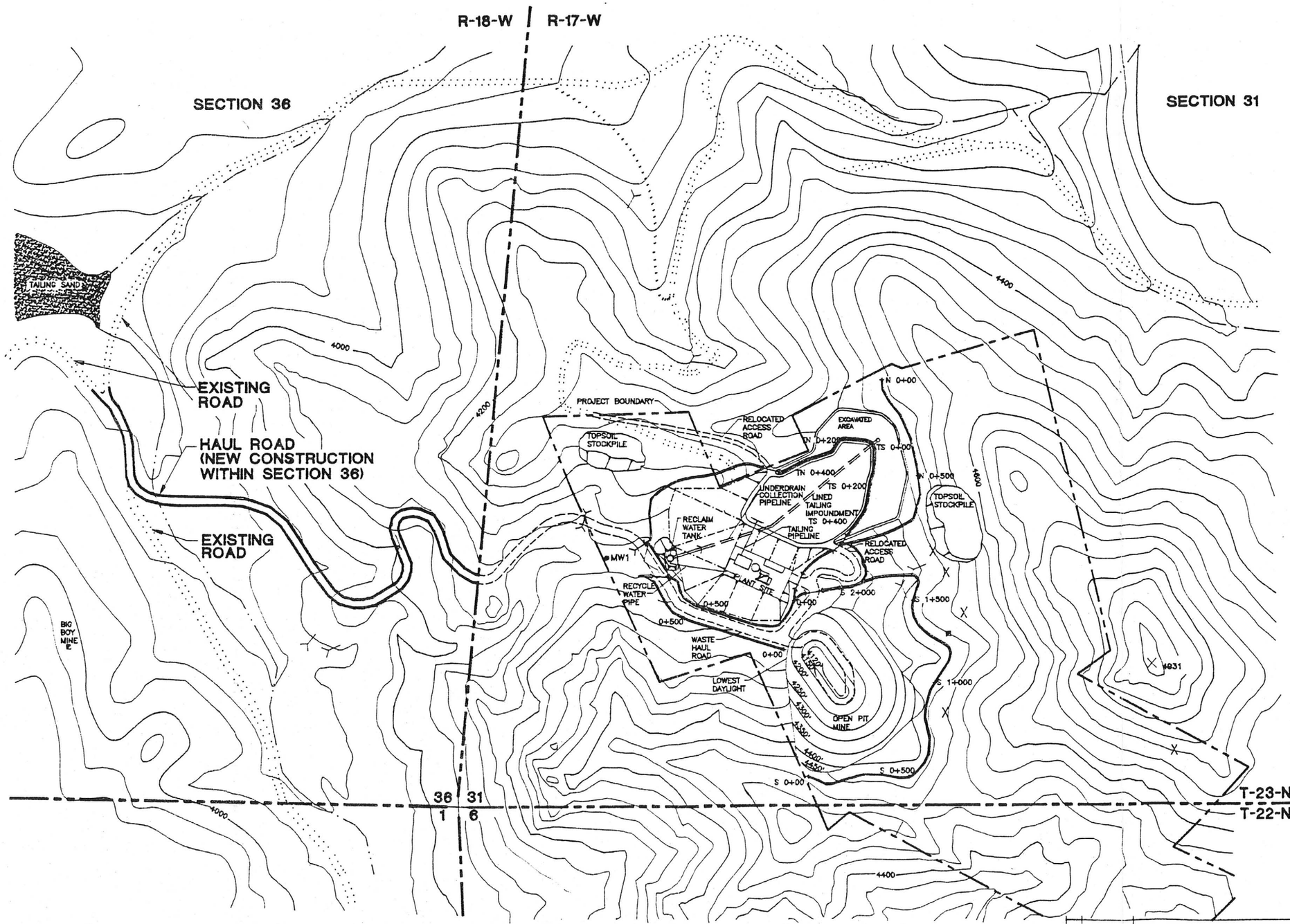

Figure 3
General Site Layout

NO.	REVISIONS	BY	APP'D
A	ADDED EXCAVATED AREA	DJG	TR

MORGAN MINING
GOLDEN EAGLE PROJECT

GENERAL SITE LAYOUT

LYNTER INC.
775 MARIPOSA DENVER, CO. 80204
PH. (303)-623-8385
FAX (303) 623-0342

NO.	DWG. NO.	DRAWING TITLE
		REFERENCE DRAWINGS

DO NOT SCALE DRAWING | DWG. SIZE B

CAD-OP	LYNTEK
CKD.	–
APP'D	–
DATE	11-11-92
SCALE	1"=500'

931001.0930

DRAWING NO. 9238-400 REV. A

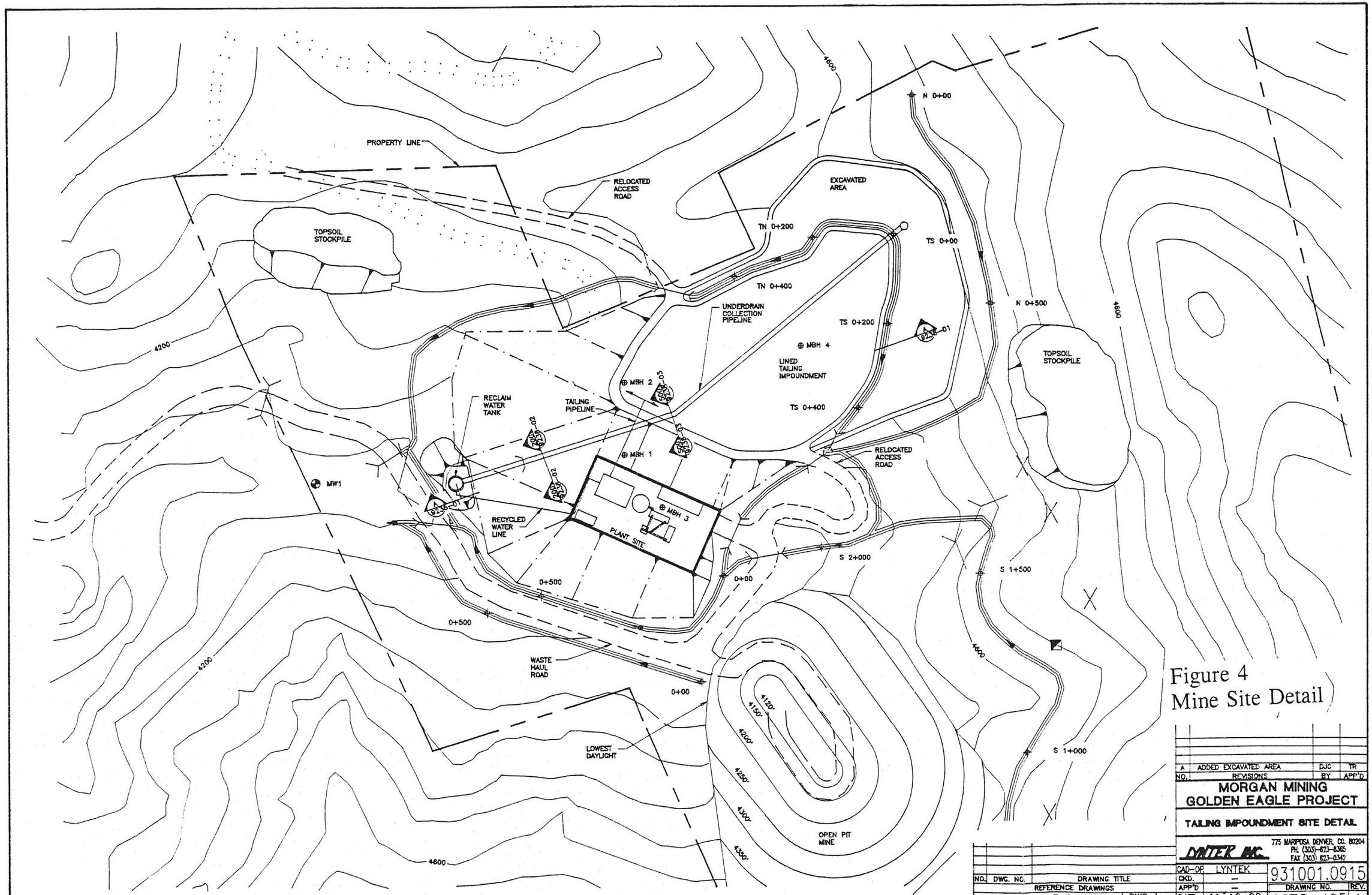

Figure 4
Mine Site Detail

NO.	REVISIONS	BY	APP'D
A	ADDED EXCAVATED AREA	DJC	TR

MORGAN MINING
GOLDEN EAGLE PROJECT

TAILING IMPOUNDMENT SITE DETAIL

DAMES & MOORE
775 MARIPOSA DENVER, CO. 80204
PH. (303)-623-8365
FAX (303) 623-0342

NO.	DWG. NO.	DRAWING TITLE
		REFERENCE DRAWINGS

CAD-OP	LYNTEK	931001.0915	
CKD.	–		
APP'D	–	DRAWING NO.	REV.
DATE	11-16-92	9238-405	A
SCALE	1"=200'		

DO NOT SCALE DRAWING | DWG. SIZE B

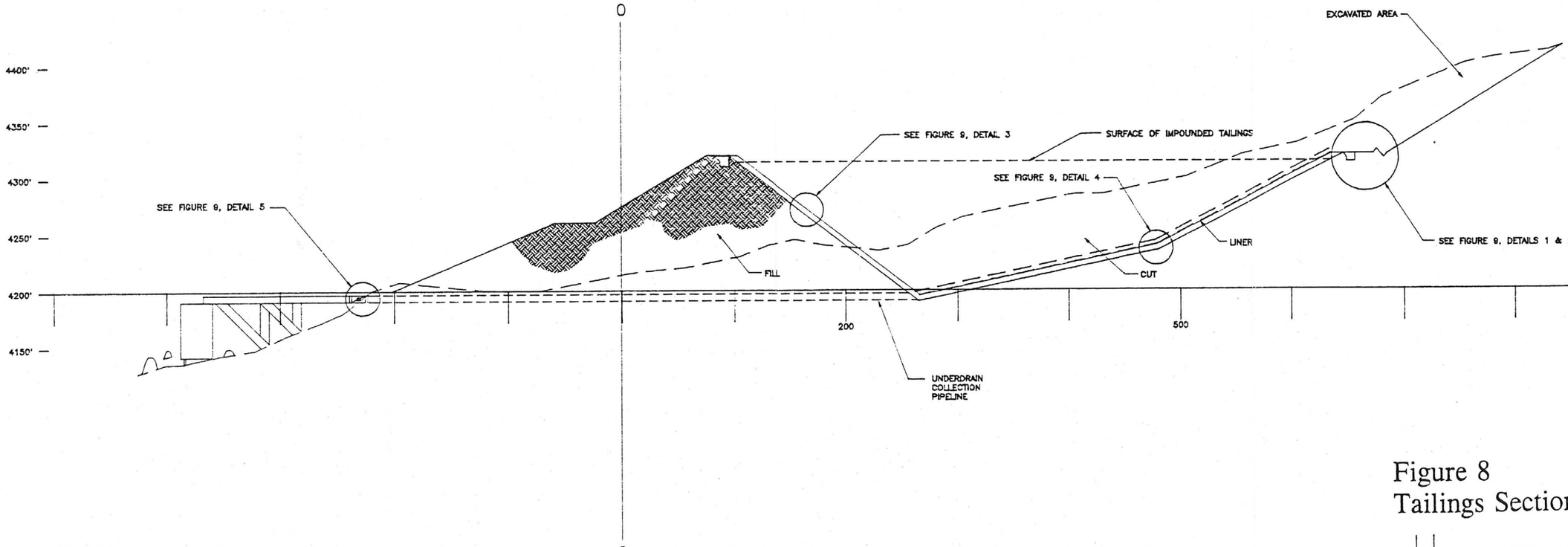

Figure 8
Tailings Section - A

NO.	REVISIONS	DJG BY	TR APP'D
A	ADDED EXCAVATED AREA		

MORGAN MINING
GOLDEN EAGLE PROJECT

TAILING SECTION - A

LYNTEK INC.

NO.	DWG. NO.	DRAWING TITLE
		REFERENCE DRAWINGS

DO NOT SCALE DRAWING | DWG. SIZE B

CAD-DP	LYNTEK	931001.0900	
CKD.	–		
APP'D	–	DRAWING NO.	REV.
DATE	09-11-92	9238-01	A
SCALE	1"=200'-0"		

NSC

DOUBLE WEDGE FUSION WELD FOR HDPE

National Seal Company (NSC) uses the patented double wedge fusion welding system as its primary seaming technique. We believe this system produces the highest quality seam in the industry. NSC uses extrusion welding methods as a secondary seaming method. When extrusion welding is required, as for detail or patch work, NSC uses a 3/4" average weld bead.

The "mouse", the name commonly given to NSC's fusion welder, is ideally suited to producing quality seams on flat subgrades as well as slopes. The "mouse" is a self-propelled unit containing a high-temperature split wedge used to melt the plastic along the weld lines on the overlapped panels. The liner panels are then squeezed together by pressure rollers so that the two sheets fuse together. The temperature, pressure and welding speed are independently adjustable so that consistently high quality seams are produced.

In addition to its exceptional welding technology, NSC uses superior Quality Control techniques not available to those who rely upon conventional extrusion welding technology as a primary method of field seaming. This superior quality control technology is made possible by the geometry of the weld created by the patented split wedge system on the "mouse".

The split wedge system on the "mouse" actually produces two fusion weld lines separated by a unwelded channel. The unwelded channel is then pressurized and the system is monitored over time to determine whether the pressure drops. This method permits testing of the entire seam at one time, as opposed to only 3' or 4' at a time, using the laborious and time consuming vacuum box method. More importantly, with National Seal Company's test method one is certain that 100% of the fusion welded seam was tested for quality and passed the test specifications. Finally, the pressure which National Seal Company adds to the channel between the two weld lines creates forces tending to separate the two panels.

These forces provide us with some qualitative information about the strength of the seam. No such information is obtained from the vacuum box test method used on traditional extrusion welded seams. In fact, the vacuum box method tends to draw the two panels together making it more difficult to detect voids in the weld.

Please refer to National Seal Company's Quality Assurance/Quality Control Manual for further information.

NSC

NATIONAL SEAL COMPANY FIELD SEAMER
(the "Mouse")

FEATURES

* Outstanding weld consistency.
* Fully automatic operation that greatly reduces human error and fatigue.
* Typically welds 400' of seam per hour - Two to three times the speed of extrusion welding.
* A double weld with a air channel between the two welds permits easy, reliable air pressure test of entire weld at one time.
* Industry's most positive quality control for entire seam length.
* Easily adapts to welding on slopes where extrusion welding would be difficult or impossible.
* Produces consistent, reliable welds over a broad range of ambient temperatures.

FUSION WELDER SPECIFICATIONS

Liner Thickness:	Designed to weld Polyethylene from 40 to 100 mils.
Bonded Seam Strength:	Typical welds exhibit film tear bonds with a minimum of 100% of the original sheet's yield strength (90% is a specified minimum due to test accuracy).
Travel Speed:	Variable.
Digital Display:	L.E.D. displays operating temperature at all times.
Temperature Control:	Variable temperature control to 1000°F.
Weld Geometry:	Standard wedge configuration produces two welds with an air channel between them for air pressure testing for seam integrity.
Power Requirements:	115 volt, single phase AC, 60 hertz, 14 amp.

NSC

HDPE GEOMEMBRANE

National Seal Company's High Density Polyethylene (HDPE) geomembranes are extruded using virgin, first-quality, high molecular weight, polyethylene resin and are manufactured specifically for the purpose of containment in hydraulic structures. The HDPE compound used in **NSC** geomembranes has been formulated to be chemically resistant, free of leachable additives and resistant to ultraviolet degradation.

40 MIL (1mm) PHYSICAL PROPERTIES

ALL PROPERTIES MEET OR EXCEED NSF STANDARD 54 SPECIFICATIONS FOR HDPE

PROPERTY	MINIMUM AVERAGE ROLL VALUES (unless otherwise indicated)			
	ENGLISH		METRIC	
	UNITS	VALUE	UNITS	VALUE
THICKNESS, ASTM D 751, NSF Mod., Nominal	mils	40.0	mm	1.000
Minimum Average	mils	40.0	mm	1.016
Lowest Individual Reading	mils	38.0	mm	0.965
DENSITY, ASTM D 1505			g/cm^3	0.940
MELT FLOW INDEX, ASTM D 1238, Cond. E, Max.			g/10 min	1.0
CARBON BLACK CONTENT, ASTM D 1603	percent	2.0 to 3.0	percent	2.0 TO 3.0
CARBON BLACK DISPERSION, ASTM D 3015	rating	A1 or A2	rating	A1 or A2
MINIMUM TENSILE PROPERTIES, ASTM D 638				
Stress at Yield	psi	2200	MPa	15.2
	ppi	88	N/cm	154
Stress at Break	psi	3800	MPa	26.2
	ppi	152	N/cm	266
Strain at Yield nominal gage of 1.30" per NSF Mod.	percent	13	percent	13
Strain at Break	percent	700	percent	700
nominal gage of 2.5" per NSF Mod.	percent	560	percent	560
TEAR RESISTANCE, ASTM D1004	ppi	700	N/cm	1230
	lbs	28	N	125
PUNCTURE RESISTANCE, FTMS 101, 2065	ppi	1300	N/cm	2280
	lbs	52	N	231
ESCR, ASTM D 1693, NSF Mod., Pass	hours	1500	hours	1500
DIMENSIONAL STABILITY, ASTM D1204, NSF Mod, Max.	percent	2.0	percent	2.0

NATIONAL SEAL SEAMING PROPERTIES
(All NSC seams will demonstrate a Film Tearing Bond in Peel and Shear)

SHEAR STRENGTH, ASTM D 4437, NSF Mod.	psi	2000	MPa	13.8
	ppi	80	N/cm	140
PEEL ADHESION, ASTM D 4437, NSF Mod.	psi	1500	MPa	10.3
(Hot wedge fusion weld)	ppi	60	N/cm	105
PEEL ADHESION, ASTM D 4437, NSF Mod.	psi	1300	MPa	8.97
(fillet extrusion weld)	ppi	52	N/cm	91.0

HD-40-0391C

NSC

NATIONAL SEAL COMPANY
1245 Corporate Blvd., Suite 300
Aurora, IL 60504
800/323-3820 708/898-1161
Fax 708/898-3461

3.4.5 Any area of a panel seriously damaged (torn, twisted, or crimped) will be marked and repaired in accordance with Paragraph 5.3 of this document.

3.5 Geomembrane Field Seaming

3.5.1 General Requirements

3.5.1.1 Layout

In general, seams shall be oriented parallel to the slope, i.e., oriented along, not across the slope. Whenever possible, horizontal seams should be located on the base of the cell, not less than five (5') feet from the toe of the slope. Each seam made in the field shall be numbered and indicated on the record drawings. Seaming information to include seam number, welder ID, machine number, temperature setting, and weather conditions will be maintained on NSC Panel Seaming Form as presented in Appendix A.

3.5.1.2 Personnel

All personnel performing seaming operations shall be trained in the operation of the specific seaming equipment being used and will qualify by successfully welding a test seam as described in Paragraph 3.5.3. The project Foreman will provide direct supervision of the seaming operations.

3.5.1.3 Equipment

3.5.1.3.1 Fusion Welding

Fusion Welding consists of placing a heated wedge, mounted on a self propelled vehicular unit, between two (2) overlapped sheets such that the surface of both sheets are heated above the polyethylene's melting point. After being heated by the wedge, the overlapped panels pass through a set of pre-set pressure wheels which compress the two (2) panels together to form the weld. The fusion welder is equipped with a device which continuously monitors the temperature of the wedge.

3.5.1.3.2 Extrusion Fillet Welding

Extrusion fillet welding consists of introducing a ribbon of molten resin along the edge of the overlap of the two (2) geomembrane sheets to be welded. A hot-air preheat and the addition of molten polymer causes some of the material of each sheet to be liquified resulting in a homogeneous bond between the molten weld bead and the surfaces of the overlapped sheets. The extrusion welder is equipped with gauges giving the temperature in the apparatus and a numerical setting for the pre-heating unit.

3.5.1.4 Weather Conditions

National Seal Company relies on the experience of the Project Superintendent and the results of test seams to determine whether seaming is restricted by weather conditions. Many factors, such as the geomembrane temperature, humidity, wind, precipitation, etc. , can effect the integrity of field seams and must be taken into account when deciding whether or not seaming should proceed. Test seams, as described in Paragraph 3.5.3, are required prior to daily production seaming to determine if the weather conditions will effect National Seal Company's ability to produce quality seams. Additional non-destructive and destructive testing of production seams substantiate the decision made by the Project Superintendent to seam on any given day.

3.5.2 Seam Preparation

3.5.2.1 Fusion Welding

3.5.2.1.1 Overlap the panels of Geomembrane approximately four (4") to six (6") inches prior to welding.

3.5.2.1.2 Clean the seam area prior to seaming to assure the area is clean and free of moisture, dust, dirt, or debris of any kind. No grinding is required for fusion welding.

3.5.2.1.3 Adjust the panels so that seams are aligned with the fewest possible number of wrinkles and "fishmouths".

3.5.2.1.4 A movable protective layer may be used, at the discretion of the National Seal Company Project Superintendent, directly below the overlap of geomembrane that is to be seamed to prevent build-up of dirt or moisture between the panels.

3.5.2.2 Extrusion Fillet Welding

3.5.2.2.1 Whenever possible, extrusion welded seams will be pre-beveled prior to heat-tacking into place.

3.5.2.2.2 Overlap the panels of geomembrane a minimum of three inches (3").

3.5.2.2.3 Using a hot-air device, temporarily bond the panels of geomembrane to be welded, taking care not to damage the geomembrane.

3.5.2.2.4 Clean the seam area prior to seaming to assure the area is clean and free of moisture, dust, dirt, and debris of any kind.

3.5.2.2.5 Grind seam overlap prior to welding within one (1) hour of the welding operation in a manner that does not damage the geomembrane. Grind marks should be covered with extrudate whenever possible. In all cases grinding should not extend more than one-quarter inch (1/4") past the edge of the area covered by the extrudate during welding.

3.5.2.2.6 Purge the extruder prior to beginning the seam to remove all heat-degraded extrudate from the barrel. The purged extrudate will be placed on scrap material so as to prevent contact with installed geomembrane.

3.5.2.2.7 Keep welding rod clean and dry.

3.5.3 Trial Welds

Trial welds shall be conducted by Welding Technicians prior to each seaming period, every five (5) hours, as weather conditions dictate, or as requested by NSC CQC personnel if welding problems are suspected. All trial welds will be conducted under the same conditions as will be encountered during actual seaming. Once qualified by a passing trial weld, Welding Technicians will not change parameters (temperature, speed, etc.) without performing another trial weld.

3.5.3.1 Trial Weld Length

The trial weld shall be made by joining two (2) pieces of geomembrane at least six inches (6") in width. Trial welds for fusion welds will be 15 feet long and extrusion weld trial seams will be a minimum of four feet (4') long.

3.5.3.2 Sample Procedure

3.5.3.2.1 Visually inspect the seam for squeeze out, footprint, pressure, and general appearance.

3.5.3.2.2 Cut three (3) one inch (1") wide specimens, one (1) from the middle of the seam and one foot (1') from each end of the test seam. Specimens shall be obtained using a one inch (1") die cutter. The specimens shall then be tested in peel using a field tensiometer.

3.5.3.2.3 In order for a trial weld to be considered acceptable, all three specimens must meet the following criteria:

1. Exhibit Film Tearing Bond (FTB).

2. Meet or exceed the minimum peel strength values listed in NSC's Material Specification Sheet. If any specimens are in non-conformance, the entire procedure shall be repeated. In the case of double track fusion welded seams, both welds must pass in order to be considered acceptable.

3.5.3.2.4 If repeat tests utilizing reasonable sets of welding parameters also fail, the seaming apparatus shall not be accepted and shall not be used for seaming until the deficiencies are corrected and a passing test seam is achieved.

3.5.3.3 Trial Weld Documentation

3.5.3.3.1 CQC Coordinator and/or Assistant will be present during peel testing and will record date, time, operator, machine number, ambient and operating temperatures, speed setting, peel values, and pass/fail designation.

3.5.3.3.2 All trial weld records shall be maintained on National Seal Company's Trial Weld Form as exhibited in Appendix A.

3.5.3.3.3 The National Seal Company CQC Coordinator will give final approval to proceed with welding after observing trial welds.

3.5.4 General Seaming Procedures

3.5.4.1 Seaming shall extend to the outside edge of panels to be placed in the anchor trench.

3.5.4.2 While welding a seam, monitor and maintain the proper overlap.

3.5.4.3 Inspect seam area to assure it is clean and free of moisture, dust, dirt and debris of any kind.

3.5.4.4 Welding Technicians will periodically check machine operating temperature and speed, and will mark this information on the geomembrane.

3.5.4.5 Align wrinkles at the seam overlap to allow welding through the wrinkle.

3.5.4.6 "Fishmouths" or wrinkles at seam overlaps, which cannot be welded through, shall be cut along the ridge in order to achieve a flat overlap. The cut "fishmouth" or wrinkle shall be heat-tacked flat and extruded or patched with an oval or round patch of the same geomembrane extending a minimum of three inches (3") beyond the cut in all directions.

3.5.4.7 All cross/butt seams between two (2) rows of seamed panels shall be welded during the coolest time of the day to allow for contraction of the geomembrane.

3.5.4.8 Prior to welding cross/butt seams, the top and bottom overlap of intersecting fusion welded seams will be trimmed six inches (6"). Intersecting extrusion fillet welded seams will be ground to flatten the extrusion bead prior to welding butt seams.

3.5.4.9 All "T" joints produced as a result of cross/butt seams shall be extrusion fillet welded. The overlap on each "leg" of the "T" joint will be trimmed back six inches (6"). Then grind three inches (3") minimum on each of the three (3)

legs of the "T" and extrusion weld all of the area prepared by grinding.

3.5.4.10 Whenever possible, Welding Technicians will cut a one inch (1") peel specimen at the end of every seam. Prior to welding the next seam, the specimen will be tested for peel. The CQC Coordinator may request additional trial welds, based on observations of peel test specimens.

3.5.4.11 In the event non-complying seam test strips are encountered, the welding machine will be taken out of service until a passing trial weld is obtained, and additional peel specimens will be taken to localize the flaw.

3.5.4.12 Results of field seam test strips will be maintained in the destructive test column on the Panel Seaming Form as shown in Appendix A.

3.5.4.13 The CQC Coordinator may, after consulting with NSC's Site Superintendent, take destructive samples from any seam, if defects are suspected.

3.5.5 Seaming Documentation

3.5.5.1 All seaming operations will be documented by the CQC Coordinator or a designated Assistant. Welding Technicians will mark on the liner with Mean Streak permanent markers at the start of all seams information regarding date, time, Welding Technician ID, machine number, and machine operating temperature and speed. CQC Coordinator or Assistant will record date, time, seam number, Technician ID, machine ID, set temperature, speed, and weather conditions on the NSC Panel Seaming Form (See Appendix A).

3.5.5.2 Welding Technicians will periodically check operating temperature and speed and mark the information along the seam.

3.5.5.3 CQC Coordinator will make periodic checks on welding operations to verify overlap, cleanliness, etc.

4. Seam Testing - Geomembranes

4.1 Concept

The welded seam created by National Seal Company's fusion welding process is composed of a primary seam and a secondary track that creates an unwelded channel. The presence of an unwelded channel permits National Seal Company's fusion seams to be tested by inflating the sealed channel with air to a predetermined pressure and observing the stability of the pressurized channel over time.

National Seal Company performs non-destructive air-pressure testing in accordance with the following procedures, developed by NSC, and adopted by the Geosynthetic Research Institute as Test Method GM-6.

4.2 Air Pressure Testing

4.2.1 Equipment for Air Testing

4.2.1.1 An air pump (manual or motor driven) capable of generating and sustaining a pressure between 20 to 60 psi.

4.2.1.2 A rubber hose with fittings and connections.

4.2.1.3 A sharp hollow needle, or other approved pressure feed device with a pressure gauge capable of reading and sustaining a pressure between 0 and 60 psi.

4.2.2 Procedure for Air Testing

4.2.2.1 Seal both ends of the seam to be tested.

4.2.2.2 Insert needle or other approved pressure feed device into the sealed channel created by the fusion weld.

4.2.2.3 Inflate the test channel to a pressure of approximately 30 psi, and maintain the pressure within the range listed in the Initial Pressure Schedule. Close valve, observe and record the initial pressure.

INITIAL PRESSURE SCHEDULE *

MATERIAL (mils)	MINIMUM (psi)	MAXIMUM (psi)
40	24	30
60	27	35
80	30	35
100	30	35

*Initial pressure settings are recorded after an optional two (2) minute stabilization period. The purpose of this "relaxing period" is to permit the air temperature and pressure to stabilize. The initial pressure reading may be recorded once stabilization has taken place.

4.2.2.4 Observe and record the air pressure five (5) minutes after the initial pressure setting is recorded. If loss of pressure exceeds the following or if the pressure does not stabilize, locate the suspect area and repair in accordance with Section 4.2.3.

MAXIMUM PERMISSIBLE PRESSURE DIFFERENTIAL AFTER 5 MINUTES - HDPE

MATERIAL (MIL)	PRESSURE DIFF.
40	4 psi
60	3 psi
80	2 psi
100	2 psi

4.2.2.5 At the conclusion of all pressure tests, the end of the air-channel opposite the pressure gauge is cut. A decrease in gauge pressure must be observed or the air channel will be considered "blocked" and the test will have to be repeated from the point of blockage. If the point of blockage cannot be found, cut the air channel in the middle of the seam and treat each half as a separate test.

4.2.2.6 Remove the pressure feed needle and seal the resulting hole by extrusion welding.

4.2.3 In the event of a Non-Complying Air Pressure Test, the following procedure shall be followed:

4.2.3.1 Check seam end seals and retest seams.

4.2.3.2 If a seam will not maintain the specified pressure, the seam should be visually inspected to localize the flaw. If this method is unsuccessful, cut one inch (1") samples from each end of the seam.

4.2.3.3 Perform destructive peel tests on the samples using the field tensiometer.

4.2.3.4 If all samples pass destructive testing remove the overlap left by the wedge welder and vacuum test the entire length of seam in accordance with Paragraph 4.3.

4.2.3.4.1 If a leak is located by the vacuum test, repair by extrusion fillet welding. Test the repair by vacuum testing.

4.2.3.4.2 If no leak is discovered by vacuum testing, the seam will be considered to have passed non-destructive testing.

4.2.3.5 If one or more peel specimens are in non-compliance, additional samples will be taken in accordance with Paragraph 4.4.3.

4.2.3.5.1 When two (2) passing samples are located, the length of seam bounded by the two (2) passing test locations will be considered non-complying. The overlap left by the wedge welder will be heat tacked in place along the entire length of seam and the non-complying portion of seam will be extrusion fillet welded.

4.2.3.5.2 Test the entire length of the repaired seam by vacuum testing in accordance with Paragraph 4.3.

4.2.4 General Air Testing Procedures

4.2.4.1 The opposite end of the air channel will in all cases be pierced to assure that no blockages of the air channel have occurred.

4.2.4.2 Whenever possible, seams should be air-tested prior to completing butt seams to avoid having to cut into liner. All cuts through the liner as a result of testing will be repaired by extrusion welding.

4.2.4.3 All needle holes in air channels remaining after testing will be circled by testing crew and will be repaired with an extrusion bead.

4.2.5 Air Pressure Testing Documentation

All information regarding air-pressure testing, (date, initial time and pressure, final time and pressure, pass/fail designation, and Technicians initials) will be written at both ends of the seam, or portion of seam tested. All of the above information will also be logged by the CQC Coordinator on the NSC Non-Destructive Testing Form as exhibited in Appendix A.

4.3 Vacuum Testing

This test is used on extrusion welds, or when the geometry of a fusion weld makes air pressure testing impossible or impractical, or when attempting to locate the precise location of a defect believed to exist after air pressure testing.

4.3.1 Equipment for Vacuum Testing

4.3.1.1 Vacuum box assembly consisting of a rigid housing with a soft neoprene gasket attached to the bottom, a transparent viewing window, port hole or valve assembly, and a vacuum gauge.

4.3.1.2 Vacuum pump assembly equipped with a pressure controller and pipe connection.

4.3.1.3 A rubber pressure/vacuum hose with fittings and connections.

4.3.1.4 A bucket and means to apply a soapy solution.

4.3.1.5 A soapy solution.

4.3.2 Procedure for Vacuum Testing

4.3.2.1 Trim excess overlap from the seam, if any.

4.3.2.2 Turn on the vacuum pump to reduce the vacuum box to approximately 10 inches of mercury, i.e., 5 psi gauge.

4.3.2.3 Apply a generous amount of a strong solution of liquid detergent and water to the area to be tested.

4.3.2.4 Place the vacuum box over the area to be tested and apply sufficient downward pressure to "seat" the seal strip against the liner.

4.3.2.5 Close the bleed valve and open the vacuum valve.

4.3.2.6 Apply a minimum of 5 psi vacuum to the area as indicated by the gauge on the vacuum box.

4.3.2.7 Ensure that a leak tight seal is created.

4.3.2.8 For a period of approximately 10 to 15 seconds, examine the geomembrane through the viewing window for the presence of soap bubbles.

4.3.2.9 If no bubbles appear after 15 seconds, close the vacuum valve and open the bleed valve, move the box over the next adjoining area with a minimum three inch (3") overlap, and repeat the process.

4.3.3 Procedure for Non-Complying Test

4.3.3.1 Mark all areas where soap bubbles appear and repair the marked areas in accordance with Paragraph 5.3.

LYNTEK

775 Mariposa Denver, Colorado 80204

(303) 623-8365 FAX (303) 623-0342

NICHOLAS S. LYNN
Project Manager

EDUCATION: University of Denver
B.S Chemical Engineering, 1968, M.S. Chemical Engineering, 1970

AFFILIATIONS: Member AIME, Colorado MPD, Colorado Mining Association, Northwest Mining Association

EXPERIENCE:

1983 - PRESENT **Lyntek, Inc., Denver, Colorado.**
President - Responsible for design, consultation and start-up of several processing plants that treat ores or water in the precious metal, copper, SX/EW, uranium, and industrial minerals. The projects include preparation of process data, permits, and paper documentation to aid in financing for both major and minor projects throughout the world.

1979 - 1983 **CONOCO, Denver, Colorado.**
Project Manager/Project Coordinator - Responsible for design, construction and start-up of deep disposal well and water treatment facility. Was responsible for the coordination of engineering and construction of six-million dollar ion exchange plant in south Texas. Completed in-plant modifications and expansion of an existing solvent extraction plant of which were brought in under budget and three months ahead of schedule. Designed, scheduled and coordinated the engineering of a plant in south central Texas. All contract negotiation, scheduling and cost control. Several new techniques were developed which were implemented into CONOCO's Central Engineering Division in the areas of schedule preparation, cost control and project completion techniques.

1974 - 1979 **Dravo Corporation, Denver, Colorado.**
Project Manger - Responsible for client representation, construction and engineering coordination on a variety of studies. Responsible for implementing design criteria and developing detailed process engineering, designed and construction of copper solvent extraction plant in southern Arizona. In charge of engineering, scheduling, construction and cost control of a 29-million dollar solvent extraction plant in western Washington. Had direct control over engineering, construction specification, scheduling, field cost control and subcontractor bidding for civil, mechanical, piping and earth for lump sum work.

1971 -1974 **Barnes Engineering, Golden, Colorado.**
Project Manger/Engineer - Responsible for preliminary cost studies, conceptual engineering and detailed design for a wide variety of projects. Illustration of which cost six-million dollars and was started up in less than 24 months. A complex which was constructed at an elevation of 10,000 ft in the mountains was completed at a cost of $600,000. The project timing required the majority of work to occur in the winter. A copper solvent extraction plant using ammonia was designed and piloted in southern Arizona was built to treat the copper concentrate.

In-house developed a computer program which estimated equipment on a unit system. This allowed the client to depreciate the support systems on an accelerated basis. Computer programs were designed and written to schedule manpower requirements.

1970 - 1971 **Union Carbide Corporation, Bound Brook, New Jersey.**
Responsible for interpretation of plant data for the implementation of pilot plant programs. Supervision included pilot plant foreman, union operators, and general laborers. Several process improvements were installed into the plants in Ohio and Texas for substantial cost savings.

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DENNIS R. SHEEHAN
Project Engineer

EDUCATION: Engineer of Mines 1963 - Colorado School of Mines

AFFILIATIONS: Member AIME, Institute for Briquetting and Agglomeration

EXPERIENCE:

1988 - Present
Lyntek, Inc., Denver, Colorado.
Project Engineer - Certification: Class B Industrial Waste Water Operator Certificate No. 1035. Construction Manager for a mine water treatment plant to remove metals as well as uranium from a mine in Eastern Washington. This project included installation of lime neutralization circuit, clarifier, filter and sludge centrifugal. Plant start-up and operator training was conducted upon completion of construction; design and construction of a portable mine water treatment pilot plant facility; Third-party Umpire for start-up of Gold Leach-CCD Circuit Echo Bay Cove Project. Managed equipment removal and radioactive decontamination of equipment from a uranium mine and mill located outside of Spokane, Washington. Design and construction of portable zinc precipitate gold recovery plant for export; design of crushing circuit and ore handling facility for 2.5 million ton per year gold heap leach facility.

1986 - 1988
Vice President Plant Operations - of 120,000 TPY Silica Sand Plant and 150,000 TPY Pulverized Limestone Plant, Ft. Collins, Colorado.

1976 - 1986
Tusco Engineering, Inc., Denver, Colorado.
Vice President - Proposed and completed research contract for U.S. Department of Energy for conversion of glass container furnace to pulverized coal, several dryers located in Wyoming Bentonite fields. Managed the design, construction, and operation of a Lime and Limestone Processing and Calcining Plant in Salida, Colorado, Vice President of Subsidiary Lime/Limestone facility.

1973 - 1976
Columbine Glass Company, Wheatridge, Colorado.
Plant Engineer - Directed all maintenance and construction operations and personnel for plant producing glass beer bottles; managed mineral operations for raw materials in Wheatridge, Salida, Morrison, Colorado; supervised demolition and rebuilding of unit melterglass furnace. Supervised expansion of air compressor facility that included installation of a 5,000 cfm centrifugal compressor and ancillary equipment; designed and operated several test firing experiments of pulverized coal in glass furnaces with other glass companies.

1970 - 1973
Principal of Engineering Co. (Unitech) and Experimental Lime Company (UNVELCO); designed, constructed, and operated 30 TPD plant producing hydrated lime from sugar mill sludge; designed and constructed sand processing plant for Columbine Glass Company.

1966 - 1970
Mine and Smelter supply Co., Denver, Colorado.
Sales and Application Engineer - Responsible for sales, design, and start-up of all ball mills, classifiers, and pyroprocessing equipment; major projects: Phelps Dodge Tyrone Concentrator Ball Mills; Anaconda Twin Buttes Regrind Circuit; Duval Sierrita Molybdenum.

1965 - 1966
Caterpillar Tractor Company, Peoria, Illinois.
Management Trainee and Application Engineer

1963 - 1965
U.S. Army Corps. of Engineers
Platoon Leader and Company Commander.

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THOMAS K. RANDALL
Process Engineer

EDUCATION: Michigan Technological University
B.S. Metallurgical Engineering

EXPERIENCE:

1990 - PRESENT **Lyntek, Inc., Denver, Colorado.**
Process Engineer/Project Manager - Responsible for laboratory and pilot plant leach and shake out tests for copper process design. Participated in process modifications an feasibility studies for several operating installations. Responsible for start-up of a 300 GPM Merrill-Crowe Plant for export to Russia. Directed a 1 million ton per year heap leach operation. Process design and permitting for 300 and 1600 TPD flotation and CIL plant located in Arizona. Startup assistance for a 1000 TPD heap leach project located in North Carolina. Also completed numerous studies and cost estimates.

1989 - 1990 **Calgom Mining, Inc., A Subsidiary of Royal Gold, California.**
Vice President and General Manager - Directed the operations of an open pit gold mining facility. This position, reporting directly to the president of Royal Gold, required complete control of all phases of mining including permitting, development, mining with company owned equipment and contractors, leaching and gold recovery, metal sales, and reclamation. Directly supervised mine and mill superintendents and office manager. The total payroll consisted of 45 people. The minable ore was depleted at the end of 1989 and the property was put on a reclamation basis in 1990.

1987 - 1989 **Summitville Consolidated Mining, Unit of Galactic Resources, Colorado.**
Plant Superintendent - Responsible for production of 90,000 ounces of gold annually from three million tons of ore. Basic technology consisted of cyanide leaching, carbon recovery, zinc precipitation and smelting to Dore. Directly supervised a metallurgist, laboratory supervisor, two maintenance foreman, and a plant general foreman. Total manpower exceeded 55.

1885 - 1987 **U.S. Gold, Tonkin Springs Mine, Colorado.**
Project Manager - Acted in all phases of a 16,000 ounce per year gold heap leach operation. Scope of experience included general site management, construction, as well as directly supervising exploration and development drilling, open pit mining, crushing, and heap leaching operations.

1978 - 1985 **Colorado School of Mines Research Institute, Colorado.**
Research Engineer - Directed laboratory and pilot plant programs for precious metals and various industrial minerals. Worked with all aspects of gold recovery. Expert in froth flotation of gold, silver, and base metal ores. Directed several projects requiring IX-SX operations on uranium/vanadium and copper ores.

1976 - 1978 **Union Carbide Corporation, Uravan Project, Colorado.**
Area Superintendent - Directed operations of hydrometallurgical plant. Supervised process control and maintenance projects. Process utilized IX and SX recovery of uranium and vanadium respectively from acid leach solution

1974 - 1976 **Unit of Federal Resources, Camp Bird, Colorado.**
Metallurgist - Leadman for a 500 TPD base metal flotation plant. Evaluated custom ores for amenability through the existing circuit.

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KENNETH E. SMITH
Process Engineer

EDUCATION: Colorado State University
B.S. Environmental Health 1980, Minor in Chemistry

AFFILIATIONS: Member AIME, Colorado MPD, Colorado Mining Association, Society of Mineral Analysts

CERTIFICATIONS: Mines Safety Instructor (MSHA), First Aid Instructor (MSHA), Underground Mine Self Rescue (MSHA), Emergency Medical Technician (EMT), Instuctor HAZMAT (OSHA), General Construction Instructor (OHSA)

EXPERIENCE:

1991 - Present

Lyntek, Inc. Denver, Colorado
Process Engineer - Consultant to mining industry, development of guidelines for project shut-down and heap leach detoxification, design and construction of a mine waste repository site in central Colorado. Design & installed a 100 TPD gravity and CIL gold recovery plant in Ecuador. Design and Construction of a 700 TDP agitated leach Merrill-Crowe recovery plant in Mexico. Currently working at several RCRA and CERCLA sites as techincal support.

1988 - 1991

Canyon Resources, CR Kendall Mine, Lewistown, Montana.
Process Superintendent - Responsible for design, purchasing, construction, and start-up of the process metallurgy, 1.7 million ton leach pad, recovery plant (Merrill-Crowe System), assay laboratory, and bullion processing facility. Duties involved daily operating and supervision of all personnel within these departments. The initial facility was expanded and modified in-house several times to provide for increased mining activities. Prior to project start-up, I designed and implemented the metallurgical program for project testing and feasibility. Additionally, I was the administrative supervisor of the crushing circuit. Detoxification and shut-down of spent heaps.

1986 - 1988

Western Goldfields Company, Hog Ranch Project, Gerlach, Nevada.
Process Supervisor - Responsible for project and recovery plant start-up. Supervision of daily operations for all aspects of the sample preparation, assay laboratory, 4000 (+) TPD solution carbon adsorption/desorption circuits and leaching operation, mercury retorting and bottling operations in conjunction with bullion smelting, and daily operations and supervision of all personnel within these departments.

1983 - 1986

Western States Mineral Corporation, Drum Mine, Delta, Utah.
Process Supervisor - Responsibilities involved design, purchasing, construction and start-up for all phases of sample preparation, assay laboratories, 4000 (+) TPD solution carbon adsorption/desorption circuits and bullion processing facilities, as well as daily supervision of all leaching operation including leach pad design and construction. This facility also housed a metallurgical test laboratory for local and area wide exploration and developmental test work which I operated and directed.

1981 - 1983

WSMC, Goldstrike Mine, Elko, Nevada.
Chief Chemist - Responsibilities involved construction and start-up of the carbon desorption and electrowinning circuits. Additionally, I directed the assay laboratory, metallurgical laboratory, and bullion smelting facility. Daily operations and supervision of all personnel within these departments.

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ANTHONY KERR
Production Engineer

EDUCATION:

Purdue University
B.S. Material Engineering - 1991

CERTIFICATION:

HAZMAT Training

EXPERIENCE:

Lyntek, Inc., Denver, Colorado.
Production Engineer - Responsible for technical support and product engineering. Working ll aspects of report and project production including equipment listing and pricing, spreadsheet application, and collation of finished materials into a final copy. Also do applications with Computer Aided Drafting (CAD) design. Field work includes the operations of the California Gulch Yak Tunnel Water Treatment Facility with emphasis on the computer controller position. Design and construction of 700 tpd Merrill Crowe silver processing facility.

Operations - Plant operator at Yak Tunnel Waste Water Treatment Facility. Field test work on oil drill rig water treatment unit.

1987 - 1991

University of Utah, Salt Lake City, Utah
Lab Technician - Technical and lab support on engineering systems and construction. Engineering lab work, class work and field related student activities.

THE COMPANY INTRODUCTION

Lyntek, Inc. was formed to provide complete design engineering services to the industrial process and natural resource industries.

Our approach is simple and is composed of three basic operating philosophies:

- We seek to provide the customer the most economical services consistent with a quality project.

- We seek long-term professional relationships based on mutual trust and respect.

- We try to view our tasks through the eyes of our customers and work to the best interests of our customers.

Over the past ten years we have found this operating approach to be successful and profitable. We have added to our capabilities by seeking out competent personnel with a wide variety of talents.

Adaptation of innovative and time-saving technologies is a special strength of Lyntek, Inc. We have been among the pioneers in the use of computer aided engineering document preparation. This step alone has saved our clients both time and money on projects large and small. Please call us for a demonstration.

Since Lyntek, Inc. is a relatively small organization, we can adapt easily to the special operating needs of our customers. We have the ability to respond quickly and effectively to our customers requests.

Give us a try on your next project. We are certain you will not be disappointed.

TASKS PERFORMED

- o Process Design, Review
- o Permitting, Document Preparation
- o Coordination with OSHA, EPA, and MSHA
- o Development of Process Flow Sheets and Control Drawings
- o Detailed Plant Lay-Out (Site Specific)
- o Detailed Engineering
- o Equipment Selection, Procurement
- o Budget and Schedule Development
- o Cost Estimating
- o Construction Management

INSURANCE CONTACT

Koelbel Insurance

Lyle Roth

(303) 758-3500

BANK CONTACT

Norwest Bank Monaco

Tim Padilla

(303) 320-5555

ORGANIZATION

CORPORATE SUMMARY DATA

Name: Lyntek, Inc.

Address: 775 Mariposa Street
Denver, Colorado 80204

Phone: 1-800-798-5634
(303) 623-8365
(303) 623-0342 FAX

Contact: Nicholas S. Lynn
President

SERVICES OFFERED

Multi-Discipline Engineering and Construction Management.

INDUSTRIES SERVED

Industrial process plants, natural resource industry, waste and water treatment projects, mining and minerals, power plants, and utility transmission customers.

SPECIAL CAPABILITIES

Pioneer in the adaptation of computer aided engineering document preparation.

DISCIPLINES REPRESENTED

Civil, mechanical, electrical, structural, process, piping, and metallurgical engineering.

Specialists in difficult waste treatment (solids and liquids) for process facilities.

COMPUTER AIDED DOCUMENT PRODUCTION

Lyntek, Inc. was among the very first engineering companies to make full use of computer aided production of process design drawings, detailed engineering drawings and specifications, and associated process documentation.

We have acquired state-of-the-art hardware (IBM operating system) and software (AutoCad) to speed development of your project document production.

Our system has allowed considerable savings for our customers in both time and money. The system has been instrumental in allowing us to be flexible, adaptable, and extremely responsive to customer requirements.

We welcome the opportunity to demonstrate the value of this asset to you.

Some samples of the drawings produced are included in the Appendix (reduced in size).

SUPPORT ORGANIZATION

Lyntek, Inc. offers assistance with preparation of feasibility analysis studies, and with production of packages needed by lenders or investors to evaluate project funding.

Furthermore, we have manufacturing space and capabilities which can be adapted particularly to mining and mineral projects.

Within our structure we have specific patented processes and systems related to cost saving gold processing methods and pollution abatement and treatment systems.

Construction management for our projects is another support task we have successfully accomplished for our customers.

All of these support organizations, and skills are available to you as a customer of Lyntek, Inc.

LYNTEK, INC.

CLIENTS	CONTACT	PHONE	DESCRIPTION	YEAR COMPLETED
American Gold Resources	Roland McEldowney	303-989-3800	Feasibility Study for Silver	December 1989
American Rare Minerals	Rob Blank		American Rare Minerals Consulting Services for Gold Ore Heap Leach	August 1987
Amselco Minerals B-P	Bob Martine	702-289-8901	Plant Operation and Assistance	April 1988
Amselco Minerals B-P	Tom Behling	702-289-8901	Design, Cost Estimating and Permit Engineering for the Yamkee Project	July 1988
Amselco Minerals B-P	Tom Behling	702-289-8901	Reclamation Study to Nutralize Cyanide in Heap	February 1990
Anderson & Associates	Igor Levental	604-669-6441	Uzbekistan Economic Scoping Study	December 1992
Asarco, Incorporated	Steve Grau	303-296-5900	Repair Sump Lining	August 1989
Asarco, Incorporated	Steve Grau	303-296-5900	Seal Sump Box	December 1988
Asarco, Incorporated	Steve Grau	303-296-5900	Water Treatment Sump Systems	August 1988
Asarco, Incorporated	Mike Lee	719-486-1056	Design of Building Extension	November 1991
Asarco, Icorporated	Mike Lee	719-486-1056	Preliminary Design and Cost Estimate for Gravity Seperation Facility.	March 1991
Asarco, Incorporated	Tracy Morris	719-486-1398	Ancillary, Pipe and Redesign	November 1992
Asarco, Incorporated	Tracy Morris	719-486-1398	Filter Building Design	December 1992
Atalas Minerals Corp.	Thomas Logan	303-825-1200	Tailings Pond Filter System	1992
Atlas Precious Metals	K. R. Hulley	719-243-5800	Carbonaceous Ore & Mercury Retort	July 1988
Basin Electric Power Cooperative	William Grosz		Preliminary Design and Permit Assistance for 250 Ton/Day Lime Calcining Facility.	March 1991
Bird Machine Company	E. V. Garner	213-373-7622	Mobile Treatment Model 100 & 300 Diagrams Review Model 400	July 1986
Calgom Mining	Tom Randall	916-284-6611	Plant Review	March 1990
Cambrian Resources			Fab Mills Permit & Re-Design of Ruby Pad	December 1989
Climax - Urad	Ken Kloska	303-231-0326	Portable AMD Treatment Plant	November 1991
Colorado School of Mines	Greg Chlumsky	303-279-2581	TGT Resources	March 1986
Columbia Limited	Llyod Rockwell		Columbia Project Review	May 1989

LYNTEK, INC.

Cyprus Copperstone Gold Corporation	Scott Anderson	619-665-9261	The Scanning and Editing of a Topographical Map.	March 1991
Cyprus Copperstone Gold Corporation	Kurt Markkola	619-665-9261	Plan of Operations for Gold Heap Leach Facility Located in Artic Climate.	January 1991
Cyprus Copperstone Gold Corporation	Kurt Markkola	619-665-9261	Design & Construct Complete Modular Zinc Precipitate Gold Recovery System Mounted in Interconnecting International Shipping Containers.	January 1991
Cyprus Gold Company	Steve Thomas	303-643-5219	Study on Randsberg Mine	November 1988
Cyprus Gold Company	Steve Thomas	303-740-5219	Golden Dome Project	January 1988
Dawn Mining Company	Bob Nelson	509-258-4511	Rail Truck and Unloading Facility	November 1990
Dawn Mining Company	Bob Nelson	509-258-4511	Design of Process Mill to Treat Sludge	May 1990
Dawn Mining Company	Bob Nelson	509-258-4511	Design, Fabrication Construction of a AMD Treatment Plant	December 1989
Dawn Mining Company	Bob Nelson	509-258-4511	Direct Laboratory Leach Tests for Removal of Uranium from Mine Water Treatment Plant Sludge	February 1991
Dawn Mining Company	Bob Nelson	509-258-4511	Sludge Disposal Plant and Plant Decontamination and Decommissioning Plans for Permit Application	February 1991
Dawn Mining Company	Bob Nelson	509-258-4511	Lab Test Design and Construction On Going of Acid Leach IX Plant	
Dawn Mining Company	Bob Nelson	509-258-4511	Mill Design and Modification	1993
Denver Autometrics	Tom Strombotne	303-530-1600	U.S. Steel Mintac Project	March 1990
Denver Equipment Company	Bill Carlson	719-985-0238	Penoles Project Cu, Pb, Zn Flotation	August 1990
Denver Equipment Company	Charlie Cipra	719-471-3443	Phelps Dodge Project	February 1990
Denver Equipment Company	Bill Carlson	719-985-0238	Ghana Consolidated Diamonds Project	May 1990
Denver Equipment Company	Charlie Cipra	719-471-3443	Freeport Elevated Thickener	November 1990
Echo Bay Management Corp.	Richard A. Bohling		Assistance for the Cove CCD System	July 1989
Eurofrut	Jose Font Borales	91-248-5834	Design and Construction (CIL)	March 1992
Gibson, Dunn & Crutcher	Greg Kerwin	303-298-7200	Nevada Goldfields Mine	September 1987
Gold Fields	Mark Springett	303-231-9700	Uzbekistan Project	December 1992
Great West Gold & Silver			Cyanide Detoxification	October 1986
Great West Gold & Silver	Terry Cambell		Install Heap Pad Lime Mixing and Conveyor Systems for Vulcan Project	September 1986

Greystone Development	Randy Schroeder	303-850-0930	Review of Chevron Sweetwater Refining System	October 1989
Gwalia (U.S.A.) Ltd.	Michael Drozd	803-465-3321	Start-Up Assistance for Gold Heap Leach Facility.	February 1991
Horizon Gold Shares	Harry Smith	303-239-8701	Buffalo Valley Mine Project Tuscarora M/C Plant	February 1988
Homestake Mining Company	Royer Smith		Designed a Moveable CN Bio. Sys.	March 1991
Homestake Mining Company	Kurt Cary		Whitewood Creek, Au/Carbon Plant	November 1991
Homestake Mining Company	John Ransome	303-277-0700	White Wood Creek	June 1992
Homestake Mining Company	Royce Smith	707-995-6070	Cn Detox	October 1991
Homestake Mining Company	Lee Graber	415-981-8150	Homestake\Uzbekistan Project	1993
Interpro	Greg Clumsky	303-798-2581	Process Flowsheet	April 1987
ITT\Saudi Arabia	Alla Abdelhady		Bentonite Processing Plant	February 1992
Kaycee Bentonite	Robert Parsons	902-266-3740	Re-Design Burner	July 1989
Kennecott Copper Co.	Rex Robler	801-569-6491	Redesign of Conveyor System	May 1991
Kennecott Rawhide	Tom Behling	702-423-1394	Water System Redesign	December 1992
Kennecott	Rex Robler	801-569-6491	Conveyor Redesign/Concentrate Dryer	April 1992 July 1992
Kennecott Copper Co.	Rex Robler	801-569-6491	Copper Concentrate Dryer/Conveyor	December 1991
Kilborn International	Raymon J. Mehle	602-790-9070	Hycroft Resources	February 1986
John G. Kinnard Company	Pat Phillips	303-789-9997	Montana Mining Properties	August 1990
Landmark Reclamation	Stephen P. Antony	303-623-8639	Cyanide Neutralization	August 1990
Laradon Hall	Pat Dever	303-296-2400	Install Clay Mixing Pug Mill, Conveyor System and Testing	September 1989
McAuthor Project	Doug Martin	602-323-0884	Copper SX-EW Heap Leach	June 1990
Malheur Mining	Alan Glaser	503-869-2829	Design, Engineering, Capital Cost Estimate for a Heap Leach with Carbon Adsorption	November 1990
Malheur Mining	Alan Glaser	503-869-2829	Environmental Permit Assistance	January 1990
Malheur Mining	Alan Glaser	503-869-2829	CN Detoxification and Reclaim Plan	January 1991
Metanetix, Inc.	Harold M. Gordy	805-388-5550	Design of a Tube Reactor System	June 1990
Metanetix, Inc.	Harold M. Gordy	805-388-5550	Electrowinning I-X System Recovery	October 1989
Midget Moon	Bob Stark	602-689-3009	Evaluation of Cripple Creek Properties	January 1988
MPH Consulting	Ernie Black		Copper SX-EW Heap Leach	May 1989

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MTA Remedial Resource	George Pouska	303-279-4255	Engineer Insitu Ground Water Cleaner	July 1988
Muswellbrook Energy	John Carlile	303-650-5322	Cost Estimate for a Gold Heap Leach System	June 1990
Nevada Gold Fields	Joe Kircher	303-296-3200	Cyanide Detoxification Pad	September 1991
Newmont Gold Company	Dave Baker	303-863-7414	Environmental Audit	November 1989
Newmont Gold Company	Allen Tapp	303-863-7414	Q/A for the Leadville Area	June 1991
Newmont Gold Company	Allen Tapp	303-863-7414	Designed Cu/Au Recovery Plant	April 1992
Newmont Gold Company	Mac DeGuire	303-837-7414	Newmont/Zarafshan J.V.	November 1992
Newsboy Gold Mining	Bill Fleshman	602-684-2819	Design and Cost Estimate for a Rod Mill Leach System	July 1990
Newsboy Gold Mining	Greg Liller	602-684-2819	Design of CIL Plant	
Newsboy Gold Mining	Bill Fleshman	602-684-2819	Cyanide Detoxification Plan On Going and Tailing Pond, Geotechnical and Design	
Newsboy Gold Mining	Bill Fleshman	602-684-2819	Tailings Pond, Geotechnical and Design	
Newsboy Gold Mining	Bill Fleshman	602-684-2819	Tailing Pond Design	November 1992
Newsboy Gold Mining	Bill Fleshman	602-684-2819	Cn Destruction	October 1992
Northwest Development Co.	Mark La Noue	503-653-2000	Re-design of a Chemical Plant	March 1988
O. H. Materials Corp.	Jeff Rankin	916-928-1819	Rocky Mountain Arsenal Grout Installation	November 1989
Pangea LTD.	Steve Thomas	303-643-5219	Pangea Pauper's Dream Project	May 1987
Pangea	Doug Martin	303-643-5219	Pangea Pauper's Dream Project	May 1987
Parsons Brinckerhoff Quade & Douglas, Inc.	John Selters	303-297-0900	Engineering, Design, and Procurement Services Alligator Ridge	December 1987
Pegasus Gold Corp.	Michael Lovejoy John Pekrul	505-690-0142	Definitive Preliminary Design & Definitive Cost Estimate for 2 Million Ton/Year Gold Heap Leach Facility. Including Crusher & Process Plant.	May 1991
Pincock, Allen & Holt	Ted F. Izzo	303-986-6950	Lacana Process Review & Cost Estimate	April 1987
Public Service Company	Bob Heckendorn	303-329-1012	Design of O. H. Bridge	August 1990
Public Service Company	Ray Kent	303-329-1012	Labor for Caulking	December 1989
Public Service Company	Ray Kent	303-329-1012	Design and Grout of a DI Tank System	October 1989
Public Service Company	Ray Kent	303-329-1012	Design of a Tank Base	December 1989

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Public Service Company	Bob Heckendorn	303-329-1012	Refurbish Power Plant Structural Facing.	October 1990
Ram Mechanical, Inc.	Tom Gill	303-277-9311	Grout Seal of Drain System for Martin Marietta Company	April 1989
Red Rock Mine Company	Bill Evans		Plant Design Review and Cost Estimate	January 1988
Reynolds Metals Exploration, Inc.	Raymond E. Irwin	702-829-8019	Briggs Cost Estimate and Review	April 1990
Royal Gold	Ed Peiker	303-573-1660	Copper King Cu/Au Flotation Plant Design and Cost Estimate	May 1989
Safeway Stores, Inc.	Steve Grau	303-320-7960	Water Treatment Re-Design	September 1989
Silver King Mines, Inc.	Paul B. Valenti		Permit Lone Pine Heap Leach	March 1987
Silver King Mines, Inc.	Paul B. Valenti		Vat Leach Operation	February 1987
Silver States Mining	Bill Reid		Carbonaceous Ore Engineering Study	May 1985
Sindor, Inc.	Gary Butts	303-770-6911	Copper SX-EW Pilot Plant	October 1990
Solid Systems Company	John Fischer	303-530-2985	Conveyor Re-Design for Kennecott	September 1991
Spokane Tribe of Indians	Lawrence Goodrow	509-258-4581	Review of Sherwood SX Uranium Project	May 1987
Summitville Consolidated Mining Company	Tom Randall	719-657-2741	Heap Leach Pad Re-design and Carbon System	October 1988
Texasgulf Minerals & Metals, Inc.	Allen Tapp	719-689-2977	Design Engineering and Construction of Carbon Stripping Circuit	April 1988
Texasgulf Minerals & Metals, Inc.	Jaye T. Pickarts	719-689-2977	Design of Electrical Service	May 1988
Texasgulf Minerals & Metals, Inc.	Jaye T. Pickarts	719-689-2977	Re-Design Sump	April 1988
Timberline Minerals, Inc.	Lewis Teal		Copper Heap Leach SW-EW System	March 1988
Tonkin Springs Gold Mining Company	Bill Reid	303-629-1515	Carbonaceous Ore Treatment	January 1986
Tonkin Springs Gold Mining Company	Bill Reid	303-629-1515	Design, Engineering and Construction of a Gold Heap Leach	June 1985
Tonkin Springs Gold Mining Company	Rich McNealey	303-629-1515	Acid Wash System	January 1986
Tonkin Springs Gold Mining Company	Rich McNealey	303-629-1515	Carbon Recovery Data Review	July 1987
Western States Minerals	Fred Swanson	303-425-7042	Design and Construct Portable Lab	June 1984
Western States Minerals	Fred Swanson	303-425-7042	Design and Construct Portable Heap Leach System	July 1984

LYNTEK, INC.

Western States Minerals	Steve Thomas	303-425-7042	Design and Construct 1000 TPD Gold Mill	August 1984
Western States Minerals	Steve Thomas	303-425-7042	Heap Leach Study	March 1985

Statement of Financial Capability

MORGAN MINING LTD

Morgan Mining Ltd. is a corporation incorporated in the State of Colorado. The business of Morgan Mining consists of exploration and development of environmentally clean mining projects. No projects involving cyanide or potentially environmentally damaging methods have ever been completed or contemplated.

The attached balance sheet describes the net worth of Morgan Mining Ltd. The major asset consists of the Golden Eagle project which has proven reserves of 20,000 ounces of gold and 432,000 ounces of silver.

No judgements of any kind have ever been rendered against Morgan Mining or any of the principals of the company.

Neither the company nor any principals have been involved in any bankruptcy or insolvency proceedings.

Names and dates of birth of executive officers are as follows:

Louis J. Morgan	President	11/05/36
Adrian VanderPyl	Vice President	09/04/25
Jacquelin A. Morgan	Secretary	10/17/37
Louis J. MOrgan, II	Treasurer	07/13/63

Morgan Mining Ltd. has in place or is in the process of negotiating sufficient financing for the operation and closure of the Golden Eagle Project. Our plan of operation does not require any post-closure care. The company believes that at all times it will retain sufficient cash to provide for meeting closure requirements.

BALANCE SHEET - MORGAN MINING, LTD.

ASSETS	**6/22/93**
Current Assets:	
Cash and cash equivalents	$99,458.02
Property and equipment, at cost	
Golden Eagle Lease	$200,000.00
Leasehold improvements	$222,527.52
Morgan Exploration, (aquisition of)	$140,000.00
Deposits and other assets	
Total Assets	**$661,985.54**

Liabilities and Stockholders' Equity - June 15, 1993	
Current Liabilities	
Accounts Payable	$2,122.00
Long Term Liabilities	
Notes payable to third parties	$420,000.00
Total Liabilities	**$422,122.00**
Total stockholders' equity	**$239,863.54**
Total liabilities and stockholders' equity	**$661,985.54**

DONALD G. BRYANT MS PhD PG
geologic consulting

Mineral Exploration
Computer Applications

714 S. Fillmore Street
Denver, Colorado 80209

(303)777-0627

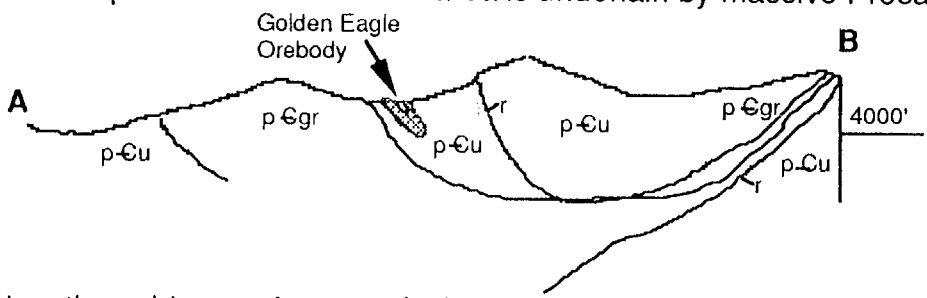
September 27, 1993

TO: Adrian Vander Pyl
Morgan Mining Ltd.

FROM: Donald G. Bryant
Consulting Geologist (Reg Prof Geol AZ 8018 - fee lapse cure in progress)

SUBJECT: Possible Impact of Golden Eagle Mining Operations on Aquifers

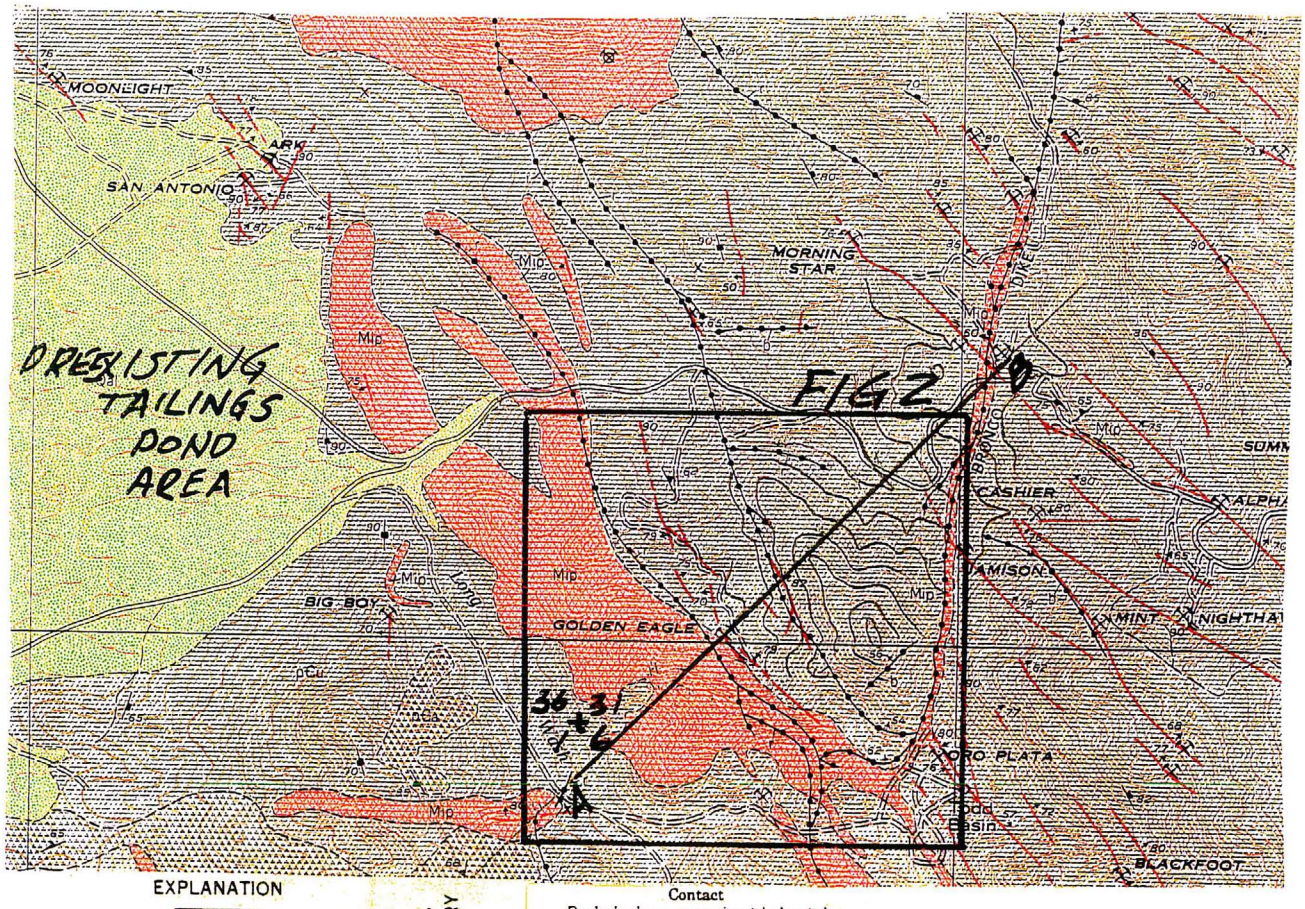
As shown on the accompanying figures, the Golden Eagle mining operations, located a few miles north of Kingman in the northwestern corner of Arizona, will occur in Precambrian rocks. These Precambrian rocks consist of granites, gneisses and schists. In the immediate mine area as indicated in the drillholes, the rocks are predominantly schists, iron formation, greenstones and interfingering granite gneisses. No regional post-Precambrian structures that might serve as or intersect aquifers have been mapped or observed.
The mineralization consisting of base metals and gold is Precambrian and is probably of syngenetic volcanogenic origin. The probable host is a series of flows including iron formation and some associated volcanic sediments. These host rocks have been intensely folded, intruded by granite and survive as an inlier or septa. Figure 1 is taken directly from a USGS bulletin published in 1952. The intrusives in the immediate vicinity of the Golden Eagle were mapped as Mesozoic(?) but detailed mapping in 1987 (Figure 2) determined that the intrusives suurounding the mine area are Precambrian. In the cross section AB below, the interpretation that the mine area is underlain by massive Precambrian



is based on the evidence of extremely tight, even isoclinal, folding typical of inliers or septa in large intrusives and the limited extent of volcanogenic iron formation within the undifferentiated Precambrian rocks.
The likelihood that the mining operations could impact some undefined aquifer is very unlikely, if not impossible.

Respectfully submitted,

Donald G. Bryant



EXPLANATION

Qal — Alluvium
Includes debris ranging from silt to boulders

Mgb — Gabbro
Commonly medium-grained with a diabasic texture

Mip — Ithaca Peak granite
Commonly slightly porphyritic. Includes pegmatite and aplite dikes and differentiation facies of porphyritic granite and granite porphyry

pCcg — Chloride granite
Commonly with a gneissic structure

pCu — Undifferentiated granite, gneisses, and schists
Predominantly granite of varying textures, mostly gneissoid, with minor amounts of mafic minerals

pCa — Amphibolite
Includes minor masses of hornblende schist, biotite schist, chloride schist, and diorite gneiss

QUATERNARY
MESOZOIC (?)
PRE-CAMBRIAN (?)
PRE-CAMBRIAN

Rhyolite dike, showing dip

Diabase dike, showing dip

Dike of intermediate to basic composition, showing dip

Contact
Dashed where approximately located

Indefinite contact

Fault
Dashed where approximately located; dotted where concealed

Vein, showing dip
Dashed where approximately located

Vertical vein
Dashed where approximately located

Strike and dip of schistosity or foliation

Strike of vertical schistosity or foliation

Strike and dip of joints

Strike of vertical joints

Mine

Prospect

Open-cut turquoise mine

BULLETIN 978 PLATE 18

Geology by McClelland G. Dings and Paul K. Sims, 1943

GEOLOGIC MAP OF THE WALLAPAI MINING DISTRICT

MOHAVE COUNTY, ARIZONA

Scale 1:24,000

1 0 1

Contour interval 25 feet
Datum is mean sea level

FIGURE 1

DONALD G. BRYANT MS PhD PG
geologic consulting

Mineral Exploration
Computer Applications

714 S. Fillmore Street
Denver, Colorado 80209

(303)777-0627

September 28, 1993

BASIC PROFESSIONAL DATA-DONALD G. BRYANT MS.PhD. PG

VITAL STATISTICS

Born June 21, 1927 in Hollywood, California
Weight -185 Height 6'2" and in excellent health
1952 - Married to Sally Ann Schminke (BS Geol, Univ. of Arizona-1950)
Four Children: Ellen Gene (1954), Stephen Milnor (1956), Elizabeth Ann (1958) and Edward Glassell (1963).

EDUCATION

Inglewood High School, Inglewood, California 1945.
University of Arizona, Tucson Arizona, BS Geological Engineering 1954.
California Institute of Technology, Pasadena, California, MS Geology 1955, Thesis: Geology of the Elena Pegmatite, Riverside County, California - Director R. H. Jahns.
Stanford University, Palo Alto, California, PhD Geology, 1964, Dissertation: Intrusive Breccias and associated ore of the Warren (Bisbee) mining district, Cochise County, Arizona - Directors C.F.Park, Jr, Adolph Knopf and K.K. Krauskopf
University of Arizona, Tucson, Arizona, Professional Geologist 1967.

EXPERIENCE

06/45-10/49 US Navy - Honorable Discharge
10/49-06/54 University of Arizona, BS Geological Engineering with Honors.
06/54-09/54 Bear Creek Mining (Kennecott Copper)-Assistant Field Geologist - geologic reconnaissance mapping of the Traverse Range near the Bingham Canyon copper mine, Utah.
09/54-06/54 California Institute of Technology with a National Science Foundation competitive scholarship. MS Geology
06/54-05/56 Cerro de Pasco Corporation-Chief Mine Geologist-geologic

mapping and mine planning at the Morococha Mine and surrounding region in Peru. Initiated investigation of the potential for open-pit copper mine.

05/56-09/62 Phelps Dodge Corporation - Resident Geologist - geologic mapping, exploration, mine planning and ore reserve estimation at the Copper Queen (Bisbee, Arizona) Branch. Initiated and designed geologic mapping procedures for the Lavender open-pit mine for thesis. The system was adopted Phelps Dodge and used until the mine closed in 1976.

09/62-02/64 Stanford University with National Science Foundation competitive scholarship.

02/64-08/65 Bear Creek Mining Co. (Kennecott Copper)- Research Geologist - developed and applied various exploration techniques for porphyry copper and molybdenum deposits in North and South America. Published, wrote and edited the Bear Creek "Blue Books" on porphyry copper and molybdenum deposits.

08/65-07/67 Molydenum Corporation of America-Chief Geologist - directed development, exploration and assisted in mine planning of the Questa molybdenum deposit, Taos County, New Mexico. Based on models developed from personal experience, initiated and directed major drilling program that added in excess of 150 million tons of proven ore and continues to add important ore (+400,000,000 tons, 1985)

07/67-05/70 Molybdenum Corporation of America-Chief Exploration Geologist (Louviers, Colorado) - planned and directed exploration programs for lode and placer deposits in United States, Canada, Mexico and Brazil with emphasis on exotic, alloy, base, radioactive and precious metals. Coordinated geologic-mineralogic-petrologic studies of the Araxa niobium deposit in Brazil and the Mountain Pass rare-earth deposit in California. Discovered and acquired a large vanadium in Nevada (+25,000,000 tons) and a niobium-rich carbonatite near Catalao, Minas Gerais, Brazil.

06/70-03-71 Holt-McPhar Inc. - Rocky Mountain District Manager for Tucson based major consulting firm for natural resource companies.

04/71-7/86 Donald G. Bryant, INC - President - directed exploration programs for most metals (exotic, alloy, base, radioactive and precious) and non-metallics. Designed and supervised exploration and development drilling programs. Calculated and verified ore reserves for many different types of mines with innovative techniques and evaluated reserve calculations with feasibility studies for many major US-Canadian mining companies. Assessed company wide exploration programs and on-going mine operations and made major improvements in the use of personnel and

procedures. Major deposits dewveloped as a reult of my workare the Lisbon Valley copper deposits for Centennial Development Corp in Utah and the Indian Springs tungsten deposit of AZL Corporation in northeastern Nevada. Other major deposits were Candaleria, Nevada; Orange Hill and Chichagof in Alaska; Camp Bird and Gold King in southwestern Colorado, and the Bayan Obo rare-earth deposit in Inner Mongolia. Especially significant is the work in open-pit and underground precious metal mines with emphasis on development, mining and metallurgy. My detailed studies at the Camp Bird and Gold King mines in the San Juan Mountains have developed databases of great value.

07/86- Martin Marietta Corporation - Group Engineer - directed configuration control and techniques for converting thousands of mylar drawings to electronic media. Supervised the use of computers and software aplications for large department involved in the design of unmanned large rockets (Titan-IV).

07/86- Sole Proprietor of part time consulting in mining geology with gold projects in Montana and Arizona

ORGANIZATIONS

Society of Economic Geologists, Geological Society of America, American Institute of Mining and Metallurgical Engineers, Sigma Xi, Tau Beta Pi, American Association of Petroleum Geologists, Board of Directors of the Colorado Mining Association

PROFESSIONAL REGISTRATIONS

Registered Professional Geologist, Arizona, No. 8081(1970-1985 expired) Reregistration in progress.
Registered Professional Geologist, California, No. 2651/1970-1980

PUBLICATIONS

Geology and ore deposits of Warren (Bisbee) mining district: in Geology of the Porphry copper deposits, southwestern North America, University of Arizona Press, p.189-203, 1966.

Intrusive breccias associated with ore, Warren (Bisbee) mining district, Arizona: Econ. Geol., v. 63, p. 1-12, 1968.

Geology of the Questa molybdenite deposit, Taos County, New Mexico: in Guidebook, 17th Field Conference, New Mexico Geological Society, p. 51-56, 1968.

Exploration methods: in Earth Resources- Forum Lectures, Voice of America, p. 54-65, 1970.

Intrusive breccias, fluidization and ore magmas: in Colorado Mining Association Yearbook 1974, p. 54-58, 1974.

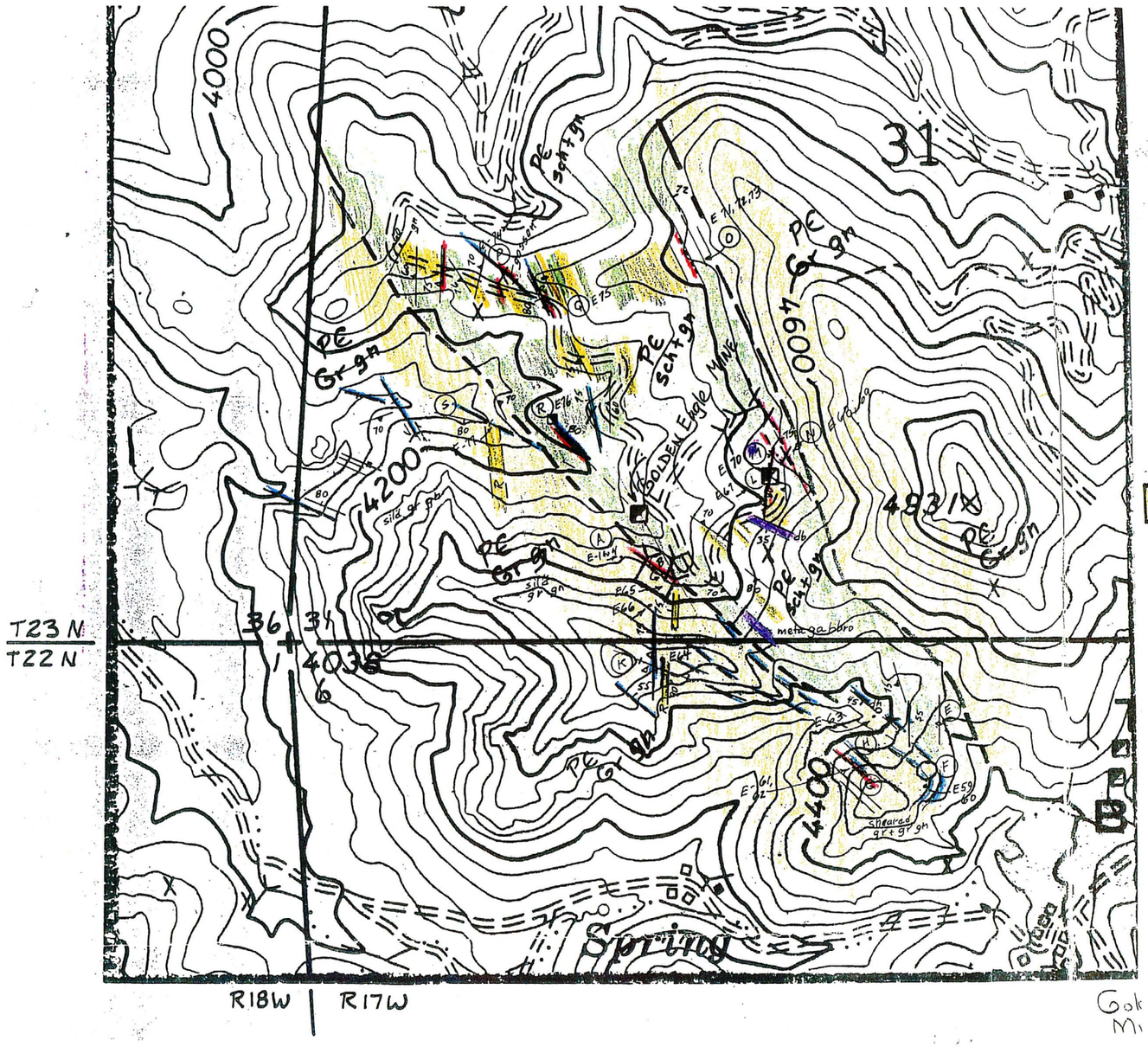
Fluidization as an ore forming process: in Brecciation and Mineralization Conference [Colorado Springs, Colorado, USA - 1983], *in prep.*

CLIENTS, LOCATION AND COMMODITY 1970 - 1992

Alaska Joint Venture {Brown & Root and Louisiana Land and Exploration}: Orange Hill, Alaska -Cu/ Mo
American Mining Company: Palau, Caroline Islands - Au and Alligator Ridge, Nevada - Au
American Nuclear Corporation: Peach Mine, Wyoming - U
Anschutz Corporation: Total resource evaluation for Paraguay, Belize, North Yemen, Oman and Antelope Island, Utah
Arizona Land and Cattle Company: Total resource evaluation for NE Nevada, Indian Springs, Nevada - W and Baca Grant, Colorado - Au
Bass Brothers Enterprises: Como, Colorado - Au
Baumgartner Minerals: San Juan Mountains, Colorado - Cu, Mo and Au and northern Nevada(remote sensing and special geochemical techniques Au
Bear Creek Mining Company (Kennecott): Questa, New Mexico - Mo
Camp Bird Colorado, Inc.: Camp Bird, Colorado - Au and Pb/Zn
Canadian Occidental Ltd.: Yukon Territory, Canada - Mo/Cu
Cappaert Enterprises: Abangares, Costa Rica - Au
Centennial Development Corporation: Lisbon Valley, Utah - Cu and Ag and Silver Bow, Montana - Ag
Clifford Minerals: Deer Trail, Utah - Ag and Cu
Coe and Van Loo: Bradshaw Mountains, Arizona - Cu and Au
Creole Mining Co: Umcompaghre, Colorado - U, Trinity, California - Cu and Ash Springs, Nevada - F
Crested Butte Silver Mining Company: Eureka, Utah - Cu, Ag and Au
Ditchburn and Associates: Goodsprings, Nevada - Au and United States - U
Federal Resources Corporation: Lordsburg, New Mexico - Au and Cu
Gerber Minerals (Gold King Consolidated Mining Company): Silverton, Colorado -Au, Troy, Nevada - Au and Congress, Arizona - Au
Gila Mines: Reveille, Nevada - Ag and Ouray, Colorado - Au
Gold Resources Inc.: Cripple Creek, Colorado - Au
Groves (S.J.): Cental Bolivia - Helicopter reconn for Au, W, Sn and Pb/Zn
Gulf Resources Corporation Exploration: Bunker Hill, Idaho - Pb/Zn and Ag, southwestern New Mexico - F, Cumberland, North Carolina - Au and Clifton, Arizona - Cu

Homestake Mining Company: Lead, North Dakaota - Au, San Juan Mountains, Colorado -Au, Ag and Cu, Steeple Rock, New Mexico - Ag and Mountain City, Nevada - Ag
Homestake-Wyoming Partners: Golden, Colorado - U
Intercontinental Energy Corp: Ribadeo, Spain - Pb/Zn and Ag and Portugal, W
International Mining Corp: Western Columbia, SA - Cu
Jamacian Exploration Ltd.: Port Antonia, Jamaica - Cu and Au
JKR Associates: Chicagof, Alaska - Au
Koby Brothers: Aravaipa, Arizona - Cu and Mo
Liberian Gold and Diamond Corporation: Western Liberia - Au and Diamonds
Lomerson Ltd.: Abilene, Texas - Au
Louisiana Land and Exploration Company: Costa Rica - Au and Whipple Mtns, California - Cu
Marquette Mines: Georgetown, Colorado - Au
Mineconsul International: Goodsprings, Nevada - Au
Morgan Mining Ltd: Golden Eagle, Arizona -Au
Nadacom, Inc.: Mazatlan, Mexico - Au
Natural Resources Development Corporation: Colorado - Au
Nevada-Pacific Placers: Wadsworth, Nevada - Au
Occidental Minerals: Candaleria, Nevada - Ag, Cerrillos, New Mexico - Cu, Absaroka Mountains, Wyoming - Mo, Ajo, Arizona - Cu, Bisbee, Arizona -Cu and Wyoming - Au
Oxbow Corporation: Northwestern Dominican Republic - Au and CuAu
Pan American Diamond: Bradshaw Mountains, Arizona - Au
Precambrian Exploration: Tonking Springs, Nevada - Au
Resource Associates of Alaska: Cantwell, Alaska -Cu
Rioamex:Utah and Nevada - Resource evaluation
Riocanex, Ltd.: Penticton, British Columbia - Mo
San Luis Mining Co.: Tayoltita, Mexico - Mo
Sesquehanna Corporation: Western United States - Resouce evaluation and Macgruder Mountain, Nevada -Mo
Silver State Mining: Cripple Creek, Colorada - Au, Bieber, California - Au and Tonking Springs, Nevada
South Fork Mining Co.: Big Rock Candy Mountain, Utah - Mo
St. Joe Minerals: Georgetown, Colorado - Au, Questa, New Mexico - Mo and Mountain Pass, California - rare earths
Texas Gulf Sulphur: Red River, New Mexico - Mo
Tosco Corporation: northeastern Nevada - Resource evaluation, Baca Grant, Colorado - Au and Indian Springs, Nevada - W
United Trade Group (Far East): Bayan Obo, Inner Mongolia - rare earths
Uranerz Exploration: Jay Gould Mine, Montana
US Energy: Crested Butte, Colorado - Mo
Walz Mining Co.: Sulphur, Nevada - Au and Midas, Nevada - Au
Waco Mining Co.: Red Mountain, Colorado - Cu and Au
WERC Mining Co.: Mineral Mountain, Arizona - Ag
Western States Minerals: Pearce, Arizona - Ag
Westinghouse Corporation: Western United States - U

Details and addresses available upon request



Golden Eagle Mine, Mohave Co., Az.

1 in. = 647 ft.

base: Cerbat, Az 7.5' Quad.

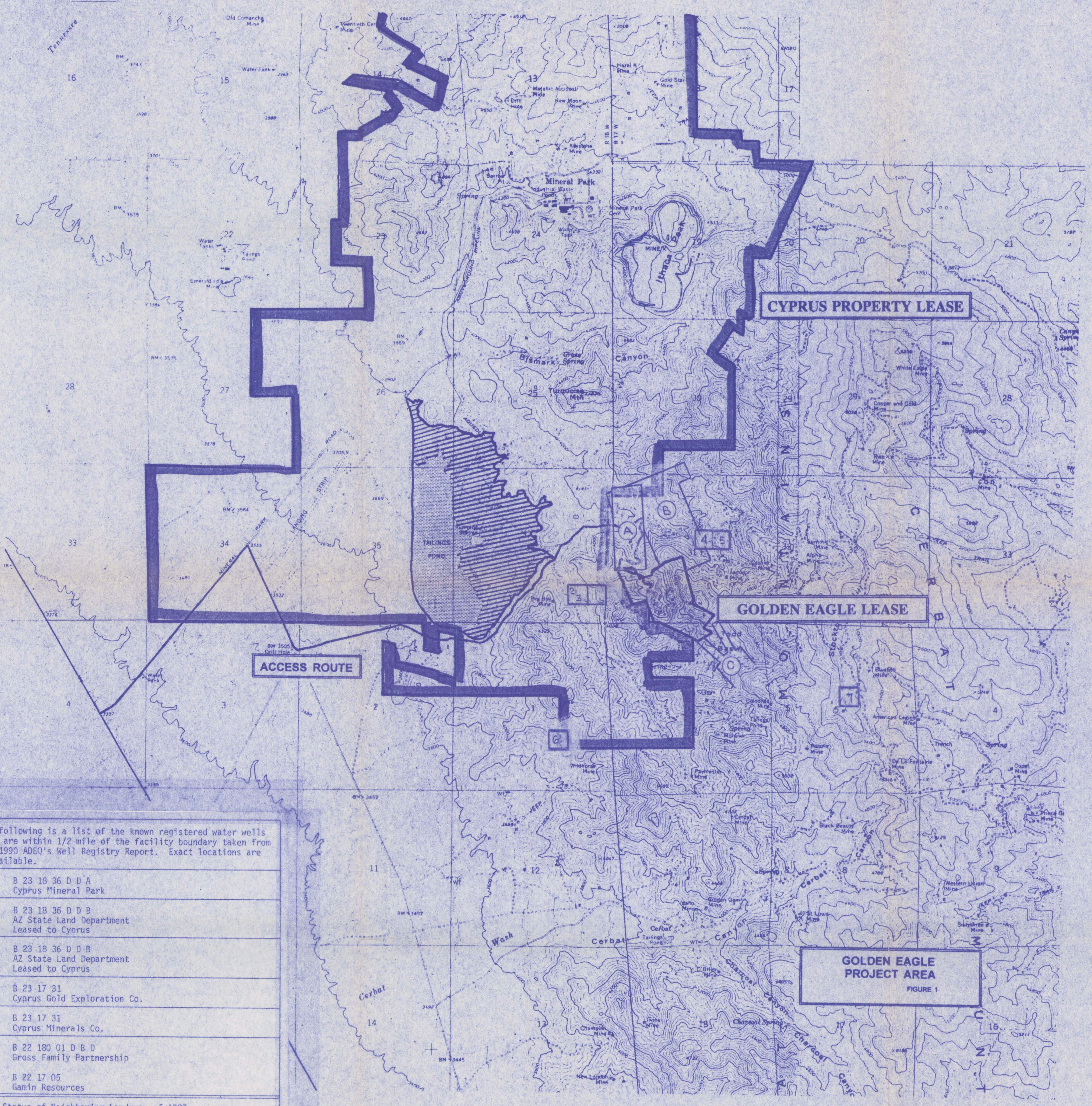
11-87 J. Dolence

Geologic Map

Legend

- PE Granite Gneiss
- PE Schist and Gneiss
- Fault
- Mineralization
- diabase or metagabbro
- Index to fieldnotes
- E-77 Rock Sample Location
- Foliation or Schistosity
- Joints
- Drillhole
- Shaft
- Adit
- Prospect

FIGURE 2



The following is a list of the known registered water wells that are within 1/2 mile of the facility boundary taken from the 1990 ADEQ's Well Registry Report. Exact locations are unavailable.

1.	B 23 18 36 D D A Cyprus Mineral Park
2.	B 23 18 36 D D B AZ State Land Department Leased to Cyprus
3.	B 23 18 36 D D B AZ State Land Department Leased to Cyprus
4.	B 23 17 31 Cyprus Gold Exploration Co.
5.	B 23 17 31 Cyprus Minerals Co.
6.	B 22 180 01 D B D Gross Family Partnership
7.	B 22 17 05 Gamin Resources

Land Status of Neighboring Lands as of 1987

A.	Patterson & George
B.	Chico Group
C.	Golconda Unpatented

MORGAN MINING
GOLDEN EAGLE PROJECT

LOCATION MAP

LYNTEK INC.

15 OCT 91

FIGURE. 1

SAMPLE POINT	DESCRIPTION	LATITUDE	LONGITUDE	COLLAR ELEVATION	DEPTH	ANGLE
E-1	DRILL HOLE	35° 20' 27"	114° 8' 40"	4050'	210'	55°
E-2	DRILL HOLE	35° 20' 09"	114° 8' 31"	4250'	140'	55°
E-3	DRILL HOLE	35° 20' 10"	114° 8' 35"	4300'	225'	60°
E-4	DRILL HOLE	35° 20' 07"	114° 8' 31"	4300'	150'	55°
E-5	DRILL HOLE	35° 20' 04"	114° 8' 29"	4360'	280'	70°
E-6	DRILL HOLE	35° 20' 02"	114° 8' 30"	4320'	230'	65°
MBH-1	SOIL SAMPLE PIT	35° 20' 08"	114° 8' 34"	4230'	10'	PIT
MBH-2	SOIL SAMPLE PIT	35° 20' 10"	114° 8' 35"	4270'	10'	PIT
MBH-3	SOIL SAMPLE PIT	35° 20' 06"	114° 8' 35"	4240'	10'	PIT
MBH-4	SOIL SAMPLE PIT	35° 20' 11"	114° 8' 30"	4310'	10'	PIT
MW1	MONITOR WELL	35° 20' 07"	114° 8' 43"	4100'	350'	90°

R-18-W R-17-W

SECTION 36

SECTION 31

⊕ E-1

TAILING SAND

EXISTING ROAD

HAUL ROAD (NEW CONSTRUCTION WITHIN SECTION 36)

EXISTING ROAD

BIG BOY MINE

4000

4200

4400

4600

PROJECT BOUNDARY

TOPSOIL STOCKPILE

RELOCATED ACCESS ROAD

EXCAVATED AREA

LINED TAILING IMPOUNDMENT

N 0+00

TN 0+200

TS 0+00

TN 0+400

N 0+500

UNDERDRAIN COLLECTION PIPELINE

⊕ MBH4

⊕ E-3

⊕ MBH2

⊕ E-2

TS 0+200

TOPSOIL STOCKPILE

RECLAIM WATER TANK

TS 0+400

TAILING PIPELINE

RELOCATED ACCESS ROAD

⊕ MBH1

⊕ MW1

⊕ MBH3

PLANT SITE

⊕ E-4

RECYCLE WATER PIPE

0+500

0+00

S 2+000

S 1+500

⊕ E-5

0+500

WASTE HAUL ROAD

⊕ E-6

0+00

4150'

4200'

4250'

4300'

4350'

4400'

4450'

LOWEST DAYLIGHT

S 1+000

OPEN PIT MINE

4931

S 0+500

S 0+00

4400

36 | 31
1 | 6

T-23-N
T-22-N

35° 20' 00"

114° 7' 00"

⊕ LOCATIONS OF BACKHOE AND DRILL SAMPLES

B	ADDED LATITUDE & LONGITUDE	DJG	TR
NO.	REVISIONS	BY	APP'D

MORGAN MINING GOLDEN EAGLE PROJECT

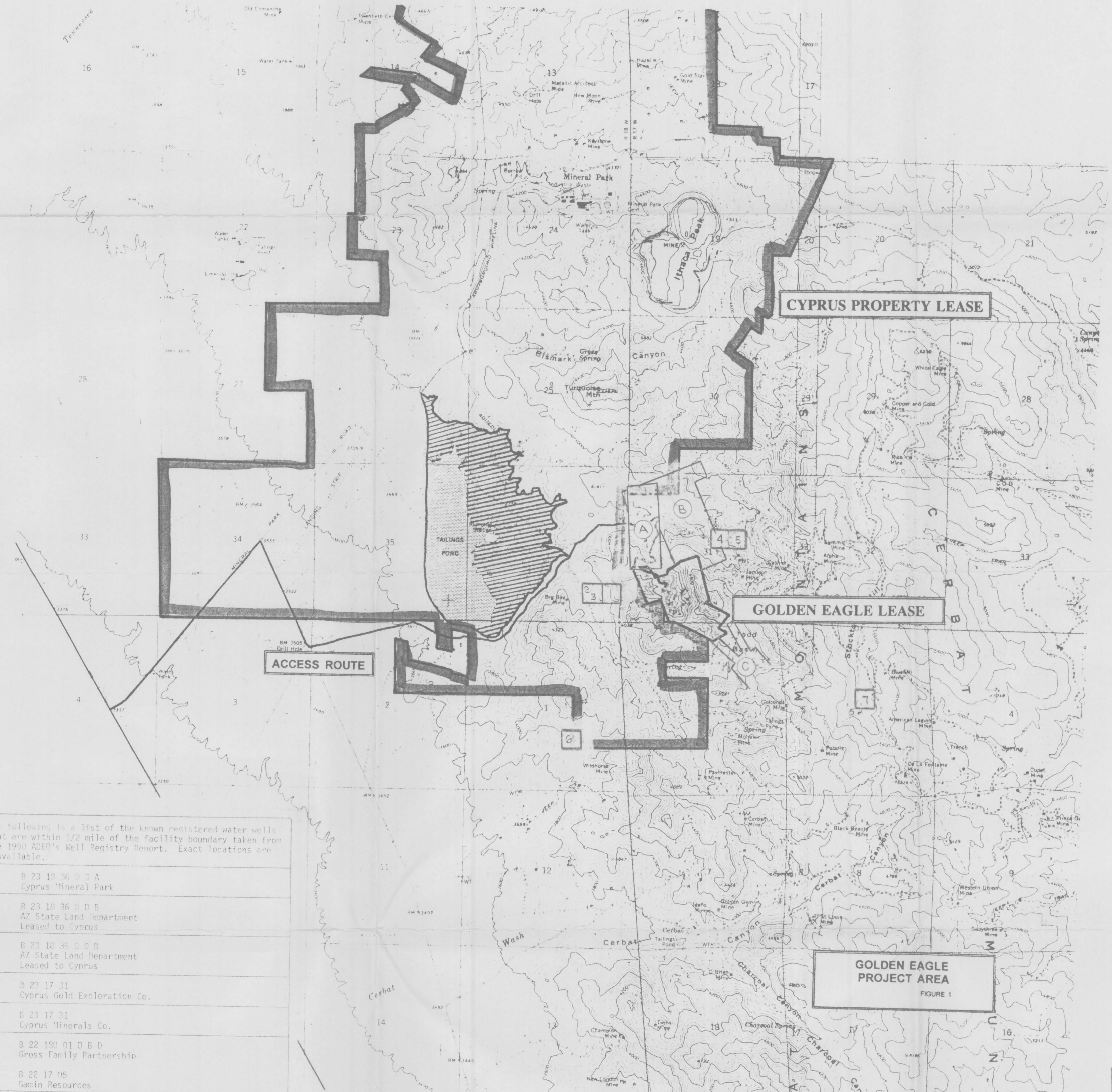
GENERAL SITE LAYOUT

LYNTEK INC.

NO.	DWG. NO.	DRAWING TITLE
		REFERENCE DRAWINGS

CAD-OP	Jeff S.	931005.1300			
CKD.	Tony K.				
APP'D	NSL	DRAWING NO.	REV.		
DATE	07-26-93	9238400D	B		
SCALE	1"=200'-0"				

PROJECT NUMBER	9238	DISK NUMBER	506	DWG. SIZE	D



GOLDEN EAGLE PROJECT AREA

FIGURE 1

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MORGAN MINING
GOLDEN EAGLE PROJECT

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LYNTEK INC.

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R-18-W R-17-W

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RECLAIM WATER TANK

MW1

MBH1

MBH3

PLANT SITE

RELOCATED ACCESS ROAD

E-4

S 2+000

S 1+500

RECYCLE WATER PIPE

0+500

0+00

E-5

0+500

WASTE HAUL ROAD

E-6

0+00

4120'

4150'

4200'

4250'

4300'

4350'

4400'

4450'

LOWEST DAYLIGHT

S 1+000

OPEN PIT MINE

S 0+500

S 0+00

4931

35° 20' 00"

114° 7' 00"

36 | 31
1 | 6

T-23-N
T-22-N

⊕ LOCATIONS OF BACKHOE AND DRILL SAMPLES

NO.	REVISIONS	BY	APP'D
B	ADDED LATITUDE & LONGITUDE	DJG	TR

MORGAN MINING GOLDEN EAGLE PROJECT

GENERAL SITE LAYOUT

LYNTEK INC.

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		REFERENCE DRAWINGS

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