CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
3550 N. Central Ave, 2nd floor
Phoenix, AZ, 85012
602-771-1601
http://www.azgs.az.gov
inquiries@azgs.az.gov

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QUALITY STATEMENT

The Arizona Geological Survey is not responsible for the accuracy of the records, information, or opinions that may be contained in the files. The Survey collects, catalogs, and archives data on mineral properties regardless of its views of the veracity or accuracy of those data.

Pincock, Allen & Holt, Inc.
4420 E. SPEEDWAY BLVD. • TUCSON, ARIZ. 85712
Telephone (602) 795-8213 • Cable KAYPIN • Telex 666457
MINING INDUSTRY CONSULTANTS

July 1, 1977

Mr. Gerry Dohm
Development Manager
Minerals Exploration Company
P.O. Box 50324
Tucson, Arizona 85703

Dear Mr. Dohm:

Following our conversations during this week with you and your staff, we submit this letter as an estimate of time and expense charges for a verification and review of your company's ore reserve estimates for the Anderson Mine area uranium deposit. As you know, it is not possible to make an exact estimate on this kind of work as we do not know in advance what we will run into. We charge for actual time and expenses according to the enclosed fee schedule. However, the following indicates what we anticipate from our understanding of your project.

Geologic Analysis - A.J. Perry

Geologic investigations, like the total reserves study, is to be of an audit nature -- checking to make certain that the tools and procedures used are reliable, that interpretations are reasonable and that no important considerations have been overlooked.

Until some checking has been commenced it is difficult to be specific as to all work that will be necessary. Tabulated below are some investigations that will be required by Perry for geologic evaluation. A technical assistant will be necessary for an estimated 1 1/2 to 2 weeks. Minimal drafting is anticipated -- say 2 to 3 days.

Anticipated procedures:

1. Examine method/accuracy of drill hole locations, collar elevation determination.

2. Determine if sampling of rotary holes was sufficiently accurate to give necessary reliability as to lithologies and mineralization encountered.

3. Determine if gamma logging was standardized and that logs can be correlated with sample chemical assays.

4. Evaluate drill hole spacing.

5. Study equilibrium factor - its method of determination and applicability to all parts of the ore body.

6. Determine reliability of chemical analyses - amount to cross checking between assayers, duplication of analyses in representative holes.

7. Determine the importance of lithologic variations relative to selectivity of mining and other aspects of mining/stripping.

8. Determine the effect of water (if present) on mining, hauling, etc.

9. Audit structural interpretations - measure their importance to stripping/mining, including selectivity of mining (ore control).

10. Determine if use of exploration x-sections for pit planning provided sufficient detail.

11. Confirm accuracy of carrying initial data to computerized sections.

12. Ascertain if there are mineralogic differences in ore types in various parts of the body that would provide process difficulties.

Geotechnical Review - R.D. Call

Included in the work for a minable reserve check would be a review of the geotechnical study used to determine the slope angles used in pit design. This would take an estimated two days by R.D. Call and a rock mechanics engineer.

Minable Ore Reserve Verification - W.K. Pincock

First, the ore reserve estimate depends for its validity on the quality of the geologic and assay data model. Therefore, the minable reserve check should follow the work outlined by A.J. Perry dealing with an audit of the geologic analysis.

Following this, it will be necessary to look at the reserve pit design to see if it is a reasonable mining shape. The method of determining economic limits should be evaluated, the pit design criteria examined and the method of assigning volume and grade values to the reserve checked. It is necessary to look at the reserve pit from the standpoint of the operator. Haulage and access should be considered and waste disposal room should be determined. Finally, there needs to be some examination of the mining sequence and the volumes of material to be moved by time periods over the life of the deposit. This has a large effect on the equipment to be used and the anticipated capital and operating costs.

Since it is my understanding that Minerals Exploration Company intends to do the pit design and planning work in-house, our involvement would be in a checking and evaluating capacity. I would estimate that our work would take possibly 10 days of an engineer's time plus 5 to 10 days of a technician's time. This checking should probably be done primarily by W.K. Pincock, possibly with some assistance from another mining engineer. The work would involve discussion with Minerals Exploration personnel, study of the computer output, some manual checks of pit volumes and possible mining sequence in order to critique and comment on the work done to this point and perhaps recommend additional steps that should be taken or ask questions that should be answered before your company goes on into full feasibility study.

Time and Charges Estimate - estimated completion by Sept. 1, 1977

Geologic Analysis

A.J. Perry	15 days @ $250	$ 3,750*
Technician	10 days @ $120	1,200
Reproductions, drafting, etc.		500

Geotechnical Review

R.D. Call	2 days @ $300	600*
Rock Mech. Engineer	5 days @ $225	1,125*
Reproductions, report, etc.		500

Minable Reserve Verification

W.K. Pincock	10 days @ $400	4,000*
Technician	10 days @ $120	1,200
Reproductions, drafting, report preparation		1,000

*Overhead - 15% of professional fees only	1,421
Total	$15,296
Say	$15,500

Enclosed is a copy of our current fee schedule and company brochure. We have added some people since it was published, but it will give you an idea of our firm's organization and makeup. If you have any further questions, please feel free to call us.

Very truly yours,

Thomas R. Couzens
Manager Mine Planning

TRC/ns

Enc.

Pincock, Allen & Holt, Inc.
4420 E. SPEEDWAY BLVD. • TUCSON, ARIZ. 85712
Telephone (602) 795-8213 • Cable KAYPIN • Telex 666457

July 1, 1977

FEE SCHEDULE

		Per Day
Mining		
W. K. Pincock	- President	$ 400.00
R. F. Winkle	- Vice President	300.00
D. P. Lambert	- Associate	300.00
H. H. Schou	- Associate	300.00
T. R. Couzens	- Manager, Mine Planning	250.00
R. H. Butler	- Planning Engineer	200.00
C. D. Smith	- Planning Engineer	200.00
H. E. Welhener	- Planning Engineer	175.00
Rock Mechanics & Slope Stability		
Dr. R. D. Call	- Vice President	300.00
D. E. Nicholas	- Rock Mechanics Engineer	225.00
J. P. Savely	- Rock Mechanics Engineer	225.00
J. M. Marek	- Rock Mechanics Engineer	200.00
Paul J. Visca	- Associate	225.00
Dr. J. B. Abel, Jr.	- Consultant	300.00
Dr. Carl Glass	- Consultant	250.00
Geology		
Dr. W. C. Peters	- Associate	300.00
A. J. Perry	- Associate	250.00
Metallurgy		
F. L. Holderreed	- Vice President	300.00
G. H. Roseveare	- Associate	250.00
S. M. Moos	- Associate	300.00
Smelting		
W. H. Foard	- Associate	250.00

Pincock, Allen & Holt, Inc.
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March 1, 1977

EXPENSE SCHEDULES

Support Staff

Engineering Technicians	$ 15.00/hr.
Draftsmen	12.00/hr.
Typing	6.00/hr.

Printing Charges*

Xerox	10¢ per sheet
Paper Prints	12¢ per Sq. Ft.
Sepia Prints	35¢ per Sq. Ft.
Sensitized Mylar	58¢ per Sq. Ft.

Computer Charges

HP9821	7.50/hr.
HP9821 with Plotter	10.00/hr.
HP9825	7.50/hr.
HP9825 with peripheral equipment	10.00/hr.
DEC 10 Timesharing	At Cost
Terminal Connect Time	7.50/hr.

Miscellaneous

Travel Expenses	At Cost
Telephone & Telex	At Cost
Miscellaneous Material	At Cost

Administrative & Overhead Charge - 15% of Professional Fees

*When volume output required, this is done at commercial firm and charges are at cost which is less than PAH charges.

CHAPMAN, WOOD AND GRISWOLD, INC.
MINING ENGINEERS AND GEOLOGISTS
4015 CARLISLE BOULEVARD, N.E., SUITE E
ALBUQUERQUE, NEW MEXICO 87107

TELEPHONE: (505) 883-0220
CABLE ADDRESS: CHAPWOLD

July 1, 1977

Mr. Gerald C. Dohm, Jr.
Development Manager
Minerals Exploration Company
P. O. Box 50324
Tucson, Arizona 85703

Re: Proposal to Minerals Exploration Company for verification of minable uranium reserves at the Anderson property, Yavapai County, Arizona.

Dear Gerry:

Attached is our proposal for 'verification of minable uranium reserves at the Anderson property' as requested by you in a telephone conversation with Mr. G. R. Griswold and in conversation in your offices with John Herndon and me. We are unable to make an accurate estimate of the costs because of the many variables involved in the scope of work. However, our best estimate indicates a cost ranging from $13,000 to $17,000 over a 1-1/2 month period.

Thank you for inviting us to submit this proposal. We will be pleased to discuss the scope and methods of work in detail with you and representatives of Minerals Exploration Company. Should we be awarded the job, we would like a letter from you outlining the work you wish us to do.

Sincerely,

CHAPMAN, WOOD AND GRISWOLD, INC.

Douglas F. Irving

Douglas F. Irving

DFI:gls

PROPOSAL TO MINERALS EXPLORATION COMPANY

FOR

VERIFICATION OF MINABLE URANIUM RESERVES
ANDERSON PROPERTY
YAVAPAI COUNTY, ARIZONA

JUNE 30, 1977

QUALIFICATIONS

The firm of Chapman, Wood and Griswold has provided consulting services since 1947 in the fields of mineral evaluation and production. The company has worked extensively in all of the United States uranium districts in projects ranging from acquisition and exploration through reserve estimates, mining systems and economic analyses to problems in production and grade control. We are very familiar with evaluation work involving both open-pit and underground mining operations in trend, stack and roll-type uranium deposits.

We have a staff of well-trained personnel who collectively are knowledgeable in all facets of the uranium industry with special expertise in the fields of reserve evaluation and mine-feasibility studies.

TECHNICAL CONSIDERATIONS

Uranium mining in the Date Creek Basin has not been significant, amounting to 4,300 tons grading 0.21% U_3O_8 produced from the Anderson Mine in 1958. Thus, predictions cannot be based on local experience.

The Anderson property reserves as outlined by Minerals Exploration grade about 0.05% eU_3O_8 at a cut-off of 2.0 feet of 0.02% eU_3O_8. Radiometric measuring tools utilized by the mining industry in determining the quantity of U_3O_8 in drill holes often do not provide the level of confidence required for a definitive evaluation of low-grade materials (less than 0.10% U_3O_8). Additionally, radioactive disequilibrium can pose significant problems. In most sandstone ores in the western U.S.A. it is common to find that materials above 0.08-0.10% chemical-U_3O_8 are slightly lower in grade on the radiometric basis (%eU_3O_8) and that below the 0.08-0.10% chemical-U_3O_8 range the reverse is true.

In the grade range of the Anderson deposit it is very important that both instrumentation and radioactive disequilibrium be studied in detail. (Gamma radiation is produced by the daughter product Bismuth-214 of the Uranium-238 decay series; and if Thorium is present, by the daughter product Thallium-208 of the Thorium-232 decay series.) Problems related to either instrumentation or

disequilibrium create difficulties in evaluation and later in grade control during mining.

The determination of minable reserves will necessitate a review of the proposed mining method and anticipated production costs. The ability to mine the ore in thin slices will play a major role in controlling excessive mining dilution as will lateral continuity.

SCOPE OF SERVICES

A. Verification of Base Data

1. Gather all pertinent data at the Tucson, Arizona offices of Minerals Exploration Company and make a field examination of the property.

2. Verify probe factors, i.e. K-factors and water factors. The analog data from the ERDA test-pit runs will be required.

3. Random selection of 10% of the drill holes for audit check of evaluation and verify analog interpretation of percent eU_3O_8.

4. Compare and study chemical assays, closed-can gamma assays and beta minus gamma assays on core samples. Also, compare chemical to down-the-hole gamma probe data on all cored mineralized intercepts.

5. Review coring, sampling and assaying procedures, methods of grade determination and method of reserve calculations.

6. If necessary, select samples for check radiometric and chemical assays.

7. Independently calculate tonnage and grade of selected areas as an audit of the existing computations.

8. Study geologic data to determine continuity, or lack of continuity, of mineralization so as to properly categorize the reserve estimate, i.e. Indicated and Inferred.

9. Review mining plans and methods and cost data to determine pit limits for minable reserves. Assess mining plan with respect to potential mining dilution.

10. Quantify reserves and write report for verification of minable reserves. Prepare concluding statement and make appropriate recommendations.

PROPOSED METHOD FOR PERFORMING THE WORK

It is proposed that initially a field examination and data-collection trip will be required. This will be done by D. F. Irving and J. P. Herndon who will jointly be in charge of and responsible for the work.

The checking of base-line data will be done by D. F. Irving and R. C. Jirikowic. Disequilibrium analysis will be done by R. C. Jirikowic under the direction of Irving and Herndon.

Audit check of grades and reserves will be performed by J. W. Melvin and R. C. Jirikowic with other staff members involved where appropriate. This work will be supervised by D. F. Irving.

A study of mining plans, methods and costs for determination of minable reserves will be done by J. P. Herndon. Geologic interpretations will be checked by J. W. Melvin.

Availability of any or all of the above listed staff members is subject to commitment to other projects prior to confirmation of selection of C.W.&G. for the proposed evaluation assignment of the Anderson property.

PRELIMINARY ESTIMATE OF TIME AND COST

Having examined the records and discussed the project with Minerals Exploration personnel, we estimate that to 'check the base-line data and verify the estimate of minable reserves' will require about 1-1/2 months of elapsed time at an estimated fee and expense charge ranging from $13,000 to $17,000. A service schedule of fees is attached.

As of this date (June 30) if C.W.&G. is awarded the proposed study no later than July 15, we believe that we can complete the job by September 1 provided that we do not encounter any major problems in verifying the base-line data.

We propose to follow our normal method of billing for services, viz. we will invoice for actual time spent on the job at our regular fees with all out-of-pocket expenses such as airfares, meals, lodging, telephone, etc. billed at cost. We submit invoices at the end of each month for services and costs during the month and request payment in full within 30 days of receipt.

STAFF

G. R. Griswold	President B.S. (Mining), M.S. Metallurgical Engineering); P. Eng. (B.C., New Mexico); A.I.M.E. Founding Principal. More than 40 years' experience in geologic and mine evaluations, mineral dressing, assaying, administration and advisory on mining investment. Recognized authority in field of evaluation of uranium deposits and operations.
D. F. Irving	Vice President Geological Engineer, B.A.Sc. (Geol. Eng.); P. Eng. (B.C.); C.I.M.M., A.I.M.E. 17 years' experience in exploration, mine planning, mine engineering, and administration.
J. P. Herndon	Mining Engineer, B.S.; P. Eng. (New Mexico); A.I.M.E. More than 45 years' worldwide experience in mine operations, design and management, including 20 years as Superintendent of the Jackpile-Paguate Mine and Assistant Manager of The Anaconda Company, New Mexico Operations.

J. W. Melvin	Senior Geologist, B.Sc., M.Sc.; G.S.A. More than 11 years' experience, chiefly in exploration and evaluation of uranium deposits including numerous ore-reserve estimates.
R. C. Jirikowic	Geologist, B.Sc. More than 7 years' experience in mineral exploration and evaluation, predominantly in the field of uranium.
C. M. Heaton	Geologist, B.S. 3 years' experience in uranium exploration and evaluation.
A. P. Shaw	Geologist, B.A. 3 years' experience in uranium exploration and evaluation.

MAJOR URANIUM PROJECTS AND EXPERIENCE

1950-PRESENT

CHAPMAN, WOOD AND GRISWOLD AND G. R. GRISWOLD

Date	Description and Location
1950	Prospecting and Examination of Uranium Deposits in Jurassic Todilto Limestone, Grants, N.M.
1954	Mapping, supervision of drilling, logging six core holes on uranium vein mineralization in precambrian granite, Sierra County, N.M.
1955-1956	Supervision of field crews in uranium exploration, Grants Mineral Belt, N.M.
1956	Evaluation Report, Sec. 32, T. 14N., R. 9W., McKinley County, N.M.
1957	Report on Moisture Sampling - Rio de Oro Mine, Ambrosia Lake, N.M.
1958	Investigation of Anaconda's Uranium Operations, Jackpile Mine and Bluewater Mill, Grants Mineral Belt, N.M.
1959	Evaluation of Uranium Ore Reserves, Quinta Corporation, Phillips Petroleum Co.
1959	Evaluation of Ranchers Exploration & Development Corp. Uranium Properties, Ambrosia Lake, N.M.
1959	Correlation of Radiometric Readings with Chemical Assays, Secs. 17 and 30, T. 14N., R. 9W., McKinley Co., N.M.
1959	Surface Stockpile Inventory, Sec. 30, T. 14N., R. 9W., McKinley County, N.M.
1959	Evaluation of Uranium Ore Reserves, Lakeview Mining Co., Lakeview Oregon.
1960	Report on Unitization of Secs. 24 and 26, T. 14N., R. 10W., McKinley County, N.M.
1962	Uranium Ore Reserve Estimate, SE/4 Sec. 11, T. 14N., R. 10W., McKinley County, N.M.

Date	Description and Location
1965	Feasibility Resport Northeast Church Rock Area, McKinley County, N.M.
1965	Consultant to Rio Tinto Canadian Exploration Ltd.
1966	Evaluation of Uranium Ore Reserves, United Nuclear Corp.-Homestake Mining Co. (H.F. Ditchburn & Associates and Chapman, Wood and Griswold.)
1967	Evaluation Report, Orphan Mine, Coconino County, Grand Canyon, Arizona.
1967	Ore Reserve Estimate & Mine Feasibility Study, Humeca U_3O_8 Deposit, Utah.
1967	Uranium Ore Reserve Study, American Nuclear Corp.-Federal Partners, Wyoming.
1967	Feasibility Study, Peters Lease, Spokane Indian Reservation, Washington.
1968	Ore Reserve Study, Golden Goose Mine, Crooks Gap, Wyoming.
1968	Evaluation Report, Secs. 18, 20 and 30, T. 14N., R. 9W., McKinley County, N.M.
1969	Ore Reserve Estimate, Mariano Lake Deposit, N.M.
1969	Ore Reserve Estimate, Live Oak County, Texas.
1969	Examination of Schwartzwalder Mine, Front Range, Golden, Colorado.
1969	Preliminary Report, Denison Mines Ltd., Elliott Lake, Ontario.
1969	Underground Cost Estimates - Keradamex Joint Venture, Ambrosia Lake, N.M.
1970	Expert Witness, Kerr-McGee Corp. vs. Bokum Corp.
1971	Mine Plans and Capital Cost Estimates, Mariano Lake Deposit.
1971	Evaluation Apex Mine, Austin, Nevada.
1972	Uranium Leaching Studies.
1972	Uranium Evaluation, Alaska.
1972	Uranium Evaluation, Southwest Africa.
1973	Mine Plan, Capital and Operating Cost Estimates, Grants Mineral Belt, N.M. - Sohio-Reserve.

Date	Description and Location
1973	Ore Reserve Estimate, Northeast Churchrock Uranium Deposit, Grants Mineral Belt, N.M.
1974	Ore Reserve Estimate, Green Mountain, Wyoming.
1974	Mine Plan, Capital and Operating Costs Estimates 2 deposits - Grants Mineral Belt, N.M.
1975	Geological engineering and evaluation of solution mining operations in Texas and N.M.
1975	Examination and evaluation of uranium property submittals for several utility companies.
1975	Evaluation of 57,000-acre Kaycee Uranium Project, Johnson County, Wyoming.
1975	Evaluation of Marquez Tract, Sandoval County, New Mexico.
1976	Reserve, recovery and cost estimates for major in-situ uranium operation, George West, Texas.
1976	Uranium reserve estimates for 2 companies, Crownpoint District, McKinley County, New Mexico.
1976	Reserve estimate, Bernabe Montano uranium deposits, Sandoval County, N.M.
1976	Reserve estimate, Jabiluka uranium deposit, Northern Territory Australia.
1976	Reserve estimate, mine plan, capital and operating cost estimate, SW 1/4 Section 12, T.14N., R.10W., McKinley County, New Mexico.
1977	Reserve and economic analysis, Treeline uranium deposit, McKinley County, New Mexico.
1977	Reserve and economic analysis, Green River uranium deposit, Emery County, Utah.
1977	Reserve and economic analysis, Moore Ranch uranium deposits, Campbell County, Wyoming.
1977	Reserve verification and feasibility analysis, Church Rock No. 2 uranium deposit, Navajo Indian Reservation, McKinley County, New Mexico.

CHAPMAN, WOOD AND GRISWOLD, INC.
MINING ENGINEERS AND GEOLOGISTS
4015 CARLISLE BOULEVARD, N.E., SUITE E
ALBUQUERQUE, NEW MEXICO 87107

TELEPHONE: (505) 883-0220
CABLE ADDRESS: CHAPWOLD

SERVICES SCHEDULE, SEPTEMBER 1, 1976

	Hourly	Daily
G. R. Griswold, P. Eng.	$ 60	$400
D. F. Irving, P. Eng.	50	350
J. P. Herndon, P. Eng., Mining Eng. (Associate)	40	300
J. W. Melvin, Geologist	35	250
R. C. Jirikowic, Geologist	25	175
A. P. Shaw, Geologist	20	125
C. M. Heaton, Geologist	20	125
Drafting, Typing, Report Preparation	15	

Company vehicles are charged as follows:

4-wheel drive vehicles $25 per day rental plus 25¢ per mile.

2-wheel drive vehicles $15 per day rental plus 20¢ per mile.

Out-of-pocket expenses are charged at cost.

Minerals Exploration Company
P.O. Box 50324
Mine Development Group
1846 W. Grant Road, Suite 108
Tucson, Arizona 85705
Telephone: (602) 884-8073

union 76 MINERALS

Head Office:
P.O. Box 54945
Los Angeles, California 90054
(213) 486-6929

July 12, 1977

Mr. Thomas R. Couzens
Manager Mine Planning
Pincock, Allen & Holt, Inc.
4420 East Speedway Blvd.
Tucson, Arizona 85712

Dear Mr. Couzens:

After careful consideration of the proposals submitted for the ore reserve audit of the Anderson Mine Uranium Project data, we have elected to let the contract to Chapman, Wood and Griswold, Inc. We want to thank you for your proposal and let you know we appreciate the time and effort that was involved and hope that we may solicit other proposals from Pincock, Allen & Holt for future projects.

Thanks for your cooperation.

Sincerely,

Gerald C. Dohm, Jr.
Manager, Mine Development

GCD/pb

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Head Office:
P.O. Box 54945
Los Angeles, California 90054
(213) 486-6929

July 12, 1977

Mr. Richard F. Douglas
Vice President
David S. Robertson & Associates, Inc.
777 South Yarrow
Denver, Colorado 80226

Dear Mr. Douglas:

After careful consideration of the proposals submitted for the ore reserve audit of the Anderson Mine Uranium Project data, we have elected to let the contract to Chapman, Wood and Griswold, Inc. We want to thank you for your proposal and let you know we appreciate the time and effort that was involved and hope that we may solicit other proposals from David S. Robertson & Associates for future projects.

Thanks for your cooperation.

Sincerely,

Gerald C. Dohm, Jr.
Manager, Mine Development

GCD/pb

ANDERSON MINE

ORE RESERVE AUDIT BID REVIEW

Category	CWG	PAH	Robertson
Cost	$13-17,000	$15,500	$9-11,000
Time Required	6 Weeks	6 Weeks	6-8 Weeks
Experience	37 Since 1965	Limited	Competent
Service Schedule	$25-60/hr	$25-50/hr	$31-55/hr
Scope			
Field Exam	Yes	No	No
Evaluate Drilling Density	No	Yes	Yes
Verify Probe Factors	Yes	Yes	Yes
Review Test Pit Runs	Yes	Yes	Yes
Analog Interpret	10%	No	10%
Equilibrium Study	Yes	Yes	Yes
Chem URS Gamma Probe	Yes	Yes	No
Sampling & Assay Procedures	Yes	Yes	Yes
Recommendations for Reassay (if required)	Yes	Probably	No
Independent Check of Grades & Tons	Yes	No	No-but will check Minerals' Coromputer Interpretatiions
Review Geologic Data	Yes	Yes	No
Determine Ore Continuity	Yes	Yes	No
Review Mining Plans	Yes	Yes	No
Review Cost Data	Yes	Yes	No
Determine Geologic Reserves	No	No	Yes
Determine Mineable Reserves	Yes	Check	No
Assess Potential Mining Dilution	Yes	Yes	No
Review Geotechnical Study	No	Yes	No
Categorize Reserves Inferred or Indicated	Yes	No	Indicated Only
Quantify Reserves	Yes	No	Yes
Recommendations	Yes	Yes	No-Methods of Analysis and Results Only

ANDERSON MINE

ORE RESERVE AUDIT BID REVIEW

Category	CWG	PAH	Robertson
Cost	$13-17,000	$15,500	$9-11,000
Time Required	6 Weeks	6 Weeks	6-8 Weeks
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Analog Interpret	10%	No	10%
Equilibrium Study	Yes	Yes	Yes
Chem URS Gamma Probe	Yes	Yes	No
Sampling & Assay Procedures	Yes	Yes	Yes
Recommendations for Reassay (if required)	Yes	Probably	No
Independent Check of Grades & Tons	Yes	No	No-but will check Minerals' Computer Interpretations
Review Geologic Data	Yes	Yes	No
Determine Ore Continuity	Yes	Yes	No
Review Mining Plans	Yes	Yes	No
Review Cost Data	Yes	Yes	No
Determine Geologic Reserves	No	No	Yes
Determine Mineable Reserves	Yes	Check	No
Assess Potential Mining Dilution	Yes	Yes	No
Review Geotechnical Study	No	Yes	No
Categorize Reserves			
Inferred or Indicated	Yes	No	Indicated Only
Quantify Reserves	Yes	No	Yes
Recommendations	Yes	Yes	No-Methods of Analysis and Results Only

SUMMARY

FINAL @ 15.6 T.F.
Oct. '77

GRADE INTERVAL	TONS OF ORE	LBS OF U3O8
0.010 - 0.020	9851312.	2810266.
0.020 - 0.030	4656576.	2271613.
0.030 - 0.040	2468625.	1704463.
0.040 - 0.050	1892668.	1692766.
0.050 - 0.060	1352950.	1494538.
0.060 - 0.070	865324.	1120133.
0.070 - 0.080	662457.	990593.
0.080 - 0.090	449004.	762085.
0.090 - 0.100	422209.	801454.
0.100 - 0.110	288317.	605593.
0.110 - 0.120	185821.	425617.
0.120 - 0.130	181812.	452102.
0.130 - 0.140	161428.	433416.
0.140 - 0.150	159915.	464192.
0.150 - 1.000	786943.	3769529.

Minerals Exploration Company
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Telephone: (602) 884-8073

UNION 76 MINERALS

Head Office
P O Box 54945
Los Angeles, California 90054
(213) 486-6929

February 23, 1978

Mr. John Kaur
Digitgraph Computer Systems
P.O. Box 4249
Tucson, Arizona 85717

Dear John:

As regards the Anderson Mine property, this letter contains the new values for the variables used in the economic polygon analysis program. This run should contain no constraints as to depth or holes used. It should be run in conjunction with the individual hole disequilibrium values given you by Bob Lucht earlier this week. Values for the run are as follows:

U_3O_8 Price/lb	$42.90
Minimum Mining Thickness	2.0 ft
Cutoff Grade	0.04% U_3O_8
Primary Stripping Density	14.95 ft^3/ton (@ 5% H_2O by Wt)
Primary Stripping Cost	$0.323/ton
Secondary Stripping Density	15.45 ft^3/ton (@ 10% H_2O by Wt)
Secondary Stripping Cost	$0.70/ton
Interior Waste Density	15.45 ft^3/ton (@ 10% H_2O by Wt)
Interior Waste Cost	$0.70
Ore Density	20.46 ft^3/ton (0% H_2O)
Ore Mining Cost/Ton	$0.70/ton
Mining Recovery Percentage	100%
Haulage	0
Milling	$16.41/ton ore
General Administration	$0.79/ton ore
Royalty & Override	$0.00/ton ore
Contingency	$0.00/ton ore
Mill Recovery	0.89

A plotter output of polygons and results will not be needed for this run.

Sincerely yours,

J. C. Roberts/ps

John C. Roberts
Mining Engineer

JCR/p

Memorandum
Union Oil Company of California
union 76

MEMO TO: D.J. Soderstrom

DATE: April 5, 1978

FROM: John C. Roberts

SUBJECT: Anderson Mine Mill Feed Grade

Economic ore reserves for use in the Anderson Mine Feasibility Study II are 7.3 X 10^6 Tons of ore with an average grade of 0.069% U_3O_8. A study is currently underway to determine the feasibility of high grading the reserves to yield a higher mill feed grade during the first years of operation, therefore, while 0.069% U_3O_8 is the average grade of the ore body at this time, it cannot be assumed to be the mill feed grade. The study should be completed sometime in mid to late April. A copy of the ore reserves summary sheet is attached for your review.

JCR/cll

cc: G.C. Dohm
D.T. Arrieta
J.A. Abramo
F.H. Buchella

GRAND TOTAL REPORT. PHASE II FEASIBILITY PRIMARY + EAST & WEST PITS

TOTAL AREA	9073033 SQ FT	CUTOFF	0.028	PRICE	$42.90/LB
AVG ORE THICK	13.4 FT	WT AVG GRADE	0.069	AVG G*T	0.98

AREA COSTS:

ITEM		FACTOR	AMOUNT	ITEM COST	COST	INCOME	TOTAL
ACCUMULATED STRIPPING WASTES	PRIMARY	0.323	178,044,883 TONS	$57,508,497			
	SECONDARY	0.323	26,338,193 TONS	18,436,735			
	INTERIOR	0.700	2,078,346 TONS	1,454,842			
	BACK SLOPE	0.323	80,015,571 TONS	25,845,029			
	TOTAL PRIMARY	(0.323)	(258,060,454 TONS)	($83,353,524)			
ORE IN PLACE			7,300,000 TONS				
LESS RECOVERY PERCENTAGE		1.000	7,300,000 TONS				
MINING COST		0.700	7,300,000 TONS	$ 5,110,000			
HAULAGE		0.000	7,300,000 TONS	$ (0)			
MILLING		15.120	7,300,000 TONS	$110,376,000			
GENERAL ADMINISTRATION		0.790	7,300,000 TONS	$ 5,767,000			
ROYALTY & OVERRIDE		0.000	7,300,000 TONS	$ (0)			
CONTINGENCY		0.000	7,300,000 TONS	$ (0)			
TOTAL UNIT COST					$224,498,103		

AREA INCOME:

ORE MINED		10,124,990 LBS			
LESS MILLING RECOVERY	0.890	9,011,241 LBS			
TOTAL AREA INCOME	42.900	9,011,241 LBS			$386,582,243

NET UNIT INCOME: $17.99/LB, $22.20/TON — $162,084,140

Memorandum
Union Oil Company of California
union 76

MEMO TO: G.C. Dohm

DATE: May 24, 1978

FROM: F.E. Lucht

SUBJECT: Equilibrium determinations from 5' cuttings at Anderson Mine

Of the three holes sampled along the central fault system, two agreed within limits with the value determined by interpolation from the map. Hole AM 750 did not. The factor determined from cuttings was 1.413 compared to .35 from the map. This is probably due to the very high grades encountered in this hole. It probably indicates that there are a few high grade lenses in this area with good equilibrium surrounded by lower equilibrium material. Note that 100' away at AM 756 the situation was as predicted from the map.

AM 740 CUTOFF .005%

DEPTH	CHEM	CLOSED CAN GAMMA	EQUILIBRIUM FACTORS CHEM/CC	MAP
220-225	.0025	.009		
225-230	.011	.014		
230-232	.0025	.003		
265-270	.001	.002		
270-275	.0007	.002		
275-280	.002	.005		
	.015	.028	.535	.55

AM 750

270-275	.003	.004		
275-280	.018	.019		
280-285	.068	.053		
285-290	.165	.097		
290-295	.030	.026		
295-300	.013	.013		
	.294	.208	1.413	.35

AM 756

165-170	.004	.008		
170-175	.0055	.013		
175-180	.0055	.012		
180-185	.024	.031		
185-190	.0045	.011		
190-195	.0030	.003		
195-200	.0045	.006		
200-205	.0030	.008		

DEPTH	CHEM	CLOSED CAN GAMMA	EQUILIBRIUM FACTORS CHEM/CC	MAP
205-210	.0095	.014		
210-215	.0025	.007		
215-220	.0007	.003		
220-225	.0007	.005		
225-230	.0070	.011		
230-235	.0035	.006		
235-240	.014	.02		
240-245	.013	.013		
245-250	.013	.018		
250-255	.017	.027		
255-260	.017	.024		
260-265	.019	.029		
265-270	.017	.025		
	.184	.288	.639	.35

David S. Robertson & Associates, Inc.
CONSULTING GEOLOGISTS & MINING ENGINEERS
777 SOUTH YARROW
DENVER, COLORADO 80226
988-2600

June 23, 1977

Minerals Exploration Company
P. O. Box 50324
Tucson, Arizona 85703

Attention: Mr. Jerry Dohm

Gentlemen:

In accordance with a recent request from Mr. Jerry Dohm of Minerals Exploration Company, David S. Robertson & Associates, Inc. is pleased to submit this proposal for a "Verification of Uranium Quantities" on the Anderson Property which is located approximately 43 miles northwest of Wickenburg, Arizona.

We understand that approximately 500 holes have been drilled on the property to date, including 34 core holes, and that approximately 600 core samples have been assayed by fluorimetric and closed-can methods. We further understand that approximately 700 samples of drill hole cuttings have been assayed. We assume that gamma-ray logs, coordinates and elevations are available for all drill holes.

Robertson & Associates proposes to evaluate the foregoing data and to calculate from the results of this evaluation the total quantity of U_3O_8 which is indicated by this data. This calculation will be based upon an appropriate cutoff grade to be determined prior to commencement of the study. Upon completion of the study, we will prepare a formal engineering report detailing our method of analysis and the results thereof.

The following outline is presented as a proposed basis for the evaluation:

A. Review and evaluate procedures and methods used by MINERALS in drilling, logging, coring, assaying and data recording.

B. Manually interpret 50 gamma-ray drill hole logs and compare the results with MINERALS' computer interpretations.

C. Compile and analyze all existing chemical assays of drill core. Compare with ROBERTSON and MINERALS' gamma-ray log interpretations. Determine disequilibrium ratios.

D. Compile and analyze assays of drill hole cuttings. Discuss conclusions which can be drawn from this analysis.

E. Calculate the quantity of U_3O_8 indicated by drilling using MINERALS' computer interpretations with, if required, appropriate adjustment factors as determined by items "B," "C" and "D."

F. Evaluate density of drilling in relation to quantity calculations and disequilibrium determinations.

We propose that this verification be conducted on a time and expense basis in accordance with our standard schedule of charges. We estimate that this study can be completed in six to eight weeks and that the total cost would be in the range of $9,000.00 to $11,000.00.

We appreciate the opportunity to submit this proposal and are looking forward to proceeding with the study. If you have any further questions, please do not hesitate to contact us.

Very truly yours,

DAVID S. ROBERTSON & ASSOCIATES, INC.

R. F. Douglas

Richard F. Douglas, Vice President

RFD:pls

STANDARD FEE SCHEDULE AND EXPENSE CHARGES

In Effect January 1, 1977

TECHNICAL FEES

Short-Term Work

Principals and Senior Associates	$440/man-day
Associates and Retained Consultants	$350/man-day
Professional Staff (other than above)	$250/man-day

Long-Term Work

A project fee may be quoted without regard to man-days, or fees per man-day may be reduced. An overhead fee may be charged if administration of the project becomes a significant factor.

NON-TECHNICAL CHARGES

Typing and clerical work	$7/hour
Drafting by Robertson staff	$9.50/hour
Outside drafting help	At rate charged

EXPENSES

All out-of-pocket expenses related to a job are chargeable at cost to the client. Such expenses include, but are not limited to, the following:

1. Lodging and meals.
2. Air fares, taxis, rental cars.
3. Use of personal or company vehicles.
4. Expendable field supplies.
5. Drafting supplies.
6. Printing and duplicating services.
7. Publications, maps, etc.
8. Long distance telephone charges.
9. Outside consultants' fees.