

MINERALS RESEARCH LABORATORY

ASHEVILLE, NORTH CAROLINA

A Brief History

In 1941, the Division of Mineral Resources of the North Carolina Department of Conservation and Development, and the Regional Minerals Section of the Tennessee Valley Authority began a cooperative investigation of the mineral resources of western North Carolina. By 1944, it was realized that mineral dressing studies were needed if these mineral resources were to be developed to their full potential.

In June, 1944, Jasper L. Stuckey, State Geologist of North Carolina and H. S. Rankin, Head, Regional Minerals Section of TVA met in Asheville and discussed the ways and means by which such a laboratory could be established in western North Carolina. Rankin stated that if the State of North Carolina would furnish a suitable building properly located and pay heat, light and water, and janitor services, the TVA would equip the building and furnish \$10,000 to \$15,000 per year to operate a mineral dressing laboratory.

Dr. Stuckey reported to Chancellor J. W. Harrelson of State College who approved the proposal and discussed it with other state officials. A site was proposed on a new test farm that was being developed a few miles east of Waynesville. Early in October 1944, H. S. Rankin and C. E. Hunter of TVA visited the site and reported to TVA officials. TVA then suggested a better located site and proposed that it be near Asheville.

Early in November 1944, Chancellor Harrelson and J. L. Stuckey presented the proposal to Governor J. M. Broughton of North Carolina who was enthusiastic about the idea and agreed that the proposed laboratory should be near Asheville. He directed Messrs. Harrelson and Stuckey to meet with representatives of TVA in Asheville and look for a suitable lot that Buncombe County and the City of Asheville might give to the State of North Carolina. He stated that if such a lot could be obtained, he would find the money for a suitable building.

The last Monday in November 1944, Messrs. Harrelson and Stuckey met Messrs. R. Brooks Taylor, H. S. Rankin and C. E. Hunter of TVA in Asheville. A meeting was held with the Chairman of the Board of County Commissioners and the County Attorney of Buncombe County. They were pleased with the proposal and asked for two or three hours in which to assemble a list of lots owned by the City of Asheville and Buncombe County. At 2:00 that afternoon the group got together and looked at several lots after which the present site of 180 Coxe Avenue was agreed upon.

Following this, the contents of an operating contract and the size and space arrangements of a laboratory building were discussed. The TVA representatives agreed to furnish proposals relative to an operating contract and a building for approval by the State of North Carolina.

The last week in December 1944, on recommendation of Governor J. M. Broughton, the Council of State approved \$60,000 for construction of the building.

During March and April 1945, a contract for operating the Laboratory was prepared and agreed upon. Cooperation in operating the Laboratory was to be conducted through the Department of Geology of the North Carolina State College of the University of North Carolina. Under the contract, the University of North

Carolina (North Carolina State College) was to be represented by the Professor of Geology at North Carolina State College and the TVA was to be represented by the Head Regional Product Research Division, Commerce Department, TVA.

Because of the problem of clearing up unpaid taxes, title to the lot at 180 Coxe Avenue was not furnished to the State of North Carolina until June 1945. As soon as title to the lot was secured, Mr. Ross Shumaker, Architect for North Carolina State College began drafting plans for the building and construction work began about October 1, 1945. Mr. L. L. McMurray was employed as Chief Engineer and began work October 1, 1945 in order to supervise the planning of the mineral dressing space.

Due to war conditions and the shortage of materials, progress on constructing the building was slow. By April 1946 it had progressed to the point that a chemist was employed and began supervision of the installation of the chemical testing equipment. Philip N. Sales was employed as chemist and placed on the payroll of the Division of Mineral Resources of the Department of Conservation and Development, thus making the North Carolina Department of Conservation and Development an informal cooperator in the operation of the Minerals Research Laboratory. In June 1946, J. R. LeGrand was employed as an ore dressing engineer in the Laboratory.

Electricity was turned on in the building about July 18, 1946. Although the building was not fully completed until the middle of August, formal operation of the State College Minerals Research Laboratory began in July 1946 with a staff consisting of a chief engineer, an ore dressing engineer, a chemist, a secretary and a janitor.

In September 1946, the Minerals Research Laboratory received its first request to undertake a major project. Mr. Carroll P. Rogers, Sr., and associates operating as the Feldspar Milling Company requested a complete Pilot Plant test on the separation of feldspar from associated minerals by froth flotation. The project was undertaken and completed to the satisfaction of Mr. Rogers and his associates.

At the June 4, 1946 meeting of the Board of Trustees of the Greater University of North Carolina, Governor Broughton introduced the following resolution and moved that it be adopted:

"Resolved that North Carolina State College be authorized to establish a Minerals Research Institute at such time as is deemed advisable without incurring any expense beyond funds available within the budget."

This resolution was unanimously adopted.

On July 29, 1946, Chancellor Harrelson issued an administrative memorandum in which he quoted the above resolution by Governor Broughton and stated:

"Pursuant to this authority a Minerals Research Institute be and the same is hereby established. Dr. Jasper L. Stuckey is hereby appointed Director of said Minerals Research Institute.

"The Minerals Research Institute is to be an agency directly under the office of the chancellor of the college.

"The Minerals Research Institute shall have:

1. Jurisdiction over the Minerals Research Laboratory of Asheville, North Carolina.
2. Jurisdiction over all cooperative research investigation projects conducted at the Minerals Research Laboratory in Asheville under such regulations, agreements, and contracts as are agreed upon by the cooperating agencies and the college.
3. To be the college representative with the Bureau of Mines Laboratory on the State College campus in all matters involving commercial minerals research in which the college may participate."

On September 6, 1946, the Executive Committee of the Board of Trustees of the University of North Carolina authorized the appointment of an Advisory Committee for the Minerals Research Institute. After consultation with TVA officials, Chancellor Harrelson on October 3, 1946 appointed the following to this committee:

Jasper L. Stuckey, Chairman, State Geologist
J. M. Broughton, former Governor of North Carolina
E. Willard Berry, Duke University
T. G. Murdock, N. C. Dept. Conservation & Development
J. M. Parker III, N. C. State College
W. F. Prouty, University of North Carolina

He outlined the program of the Minerals Research Institute as follows:

"At present the Minerals Research Institute is mainly concerned with the operation of a Minerals Research Laboratory in Asheville, North Carolina, in cooperation with the Tennessee Valley Authority. There are under discussion for the Institute such projects as mineral surveys and topographic mapping in North Carolina, expanded programs for the Asheville Laboratory, graduate work including the use of the Asheville facility and the possibility of taking some students on a cooperative basis."

Due to administrative difficulties, the Minerals Research Institute never did function according to the plans worked out by the Administration at State College and authorities of TVA.

The Advisory Committee for the Minerals Research Institute met infrequently on call. A most important meeting was held on March 1, 1947. Those present were Messrs. Stuckey, Broughton, Murdock, Parker, Prouty and Chancellor J. W. Harrelson. Two important actions were taken by the Committee at this meeting. First the Committee approved the agreement made with Feldspar Milling Company and set this as the policy of the Asheville Laboratory in dealing with other industries concerning cooperative investigations. Second, after strong statements by former Governor Broughton and Chancellor Harrelson, a motion stating that "in the future, any money provided by industrial concerns for Laboratory services be paid to North Carolina State College and carried as non-reportable funds in the college business office," was unanimously adopted. Chancellor Harrelson handled this motion with the business office of State College. Since that resolution, all money provided by industry for the Minerals Research Laboratory has been kept separate from state and federal funds.

On May 5, 1947, at an open house, the Minerals Research Laboratory was dedicated by Director James P. Pope of TVA. The Governor of North Carolina was represented at this meeting by Mr. Brandon Hodges, State Treasurer.

On August 14, 1950, after consultation with officials of TVA and the Director of the Department of Conservation and Development, Chancellor J. W. Harrelson appointed an Advisory Board for the Minerals Research Laboratory consisting of the following:

John E. Boyd, United Feldspar and Minerals Company,
Spruce Pine

S. W. Enloe, Harris Clay Company, Spruce Pine

John H. Isenhour, Isenhour Brick and Tile Company,
Salisbury

Carroll P. Rogers, Sr., Tryon

W. Trent Ragland, Superior Stone Company, Raleigh

Jasper L. Stuckey, Chairman, Raleigh

In September 1950, TVA officially notified the State of North Carolina that it (TVA) was being required by the United States Budget to curtail operations and as a result would have to discontinue support of the Minerals Research Laboratory. Support of the Laboratory was to be reduced \$3,000 per year beginning in 1951 and continuing through 1955.

The Advisory Board for the Minerals Research Laboratory was called to meet in Asheville on November 10, 1950. Representatives of TVA and a number of friends of the Laboratory were invited to attend this meeting. The purpose of the meeting was to discuss the future of the Laboratory. The opinion at this meeting was unanimous that the State of North Carolina through some state institute or agency should continue to operate the Laboratory.

On January 22, 1951, a meeting was held in Asheville to discuss the budget of the Minerals Research Laboratory. Resolutions were adopted and sent to Governor Scott and members of the Legislature. Messrs. Carroll P. Rogers, Sr., and J. L. Stuckey called upon D. Hiden Ramsey of the Asheville Citizen and secured his cooperation in preparing a very excellent editorial on the Laboratory which was published in the Asheville Citizen on January 31, 1951.

On August 22, 1952 a meeting of the Advisory Board for the Minerals Research Laboratory was held in the Laboratory Building. In addition to members of the Advisory Board a number of friends of the Laboratory were present. After a full discussion of the needs of the Laboratory and its budget, a Legislative Committee was appointed to work for the needed budget to keep the Laboratory in operation. Mr. John E. Boyd was elected Chairman and he and his committee pursued the matter through resolutions to Governor Scott and the Advisory Budget Commission and by personal contacts with members of the General Assembly.

In 1953 due to the failure of the Director of the Budget (U. S.) to make funds available to TVA it became impossible for TVA to contribute the last \$9,000 promised the Laboratory during the period 1951-1955.

In order to keep its commitment, TVA agreed to give the State of North Carolina the equipment in the Laboratory, which had a book value after depreciation of \$9,000 if the State would continue to operate the Laboratory for the benefit of the mineral producers of the area.

A contract was drawn to this effect and presented to Dr. C. H. Bostian, Chancellor of State College. After due consideration, he stated that the operation of the Minerals Research Laboratory was not a function of State College and suggested that some other State agency might be interested in it.

The status of the Laboratory was discussed at the October 1953 meeting of the Board of Conservation. At this meeting, the Board of Conservation and Development agreed to assume operation of the Laboratory if this were approved by all concerned.

A meeting was held in Raleigh on January 18, 1954 to further discuss the future of the Minerals Research Laboratory. This meeting was attended by some members of the Advisory Board of the Minerals Research Laboratory, some members of the Board of Conservation and Development, representatives of State College and a representative of TVA.

At this meeting, Chancellor Bostian changed his approach and suggested that the Laboratory be operated jointly and cooperatively by State College and the Department of Conservation and Development. Plans were worked out to this effect. TVA then drew and presented a contract giving the Laboratory equipment to the State of North Carolina if the Laboratory should continue to be operated by either State College or the Department of Conservation and Development.

Governor W. B. Umstead thought the Laboratory should be a function of State College and agreed to sign the contract to that effect when authorized by the Executive Committee of the Board of Trustees of the University. The Executive Committee approved the contract on May 10, 1954 and Governor Umstead then signed it. Shortly thereafter, President Gordon Gray of the University wrote Chancellor Bostian instructing him to turn the operation of the Laboratory over to the School of Engineering at State College. This was done and the Laboratory became the responsibility of State College as of July 1, 1954. Operation of the Laboratory was continued by the School of Engineering through its Department of Engineering Research.

The stated purpose of the Laboratory, at the time of its establishment, was to assist North Carolina Mining and Associated Mineral Industries by engaging in research programs of beneficiation and minerals development and improvement. Over the years the Laboratory has carried out this mission, but with some changes in direction, as will be noted later.

After the Laboratory came under the administration of the School of Engineering of North Carolina State College, July 1, 1954, Professor N. W. Conner, Director, in consultation with Mason K. Banks, Chief Engineer, and Dr. Jasper L. Stuckey, State Geologist, invited seven men representing the mineral industry of North Carolina to form an Advisory Committee. The purpose of the Committee was to provide a closer working relationship between the work of the Minerals Research Laboratory and the needs of the mineral industry.

At the first meeting in February 1955, the members elected N. W. Conner as Chairman and Mr. Mason K. Banks as Secretary.

Since its beginning, Committee membership has increased to fourteen of which two are permanent.

Certain operating procedures and policies were adopted by the Committee at the first and subsequent meetings as follows:

- 1) The Director of the Laboratory will serve as Chairman of the Committee.
- 2) Meetings will be held in January, May and August with the time and place to be decided at the previous meeting as the last order of business and will be made part of the minutes.
- 3) The Chief Engineer will serve as Secretary.
- 4) Approximately one month before a scheduled meeting, the Chairman will notify each member and each past member, in writing, of the time and place of the next meeting. This will be followed by a copy of the meeting agenda to each member approximately ten days prior to the meeting.
- 5) Minutes of the meeting will be mailed to members by the Secretary and to University Administrative Personnel by the Chairman.
- 6) Three members retire from the Committee each year, and three new ones are elected for four-year terms at the May meeting and become active on July 1. A reminder of this coming election is given in the letter sent one month before the meeting.
- 7) Nominations may be made by any one of the fourteen Committee members only, and each requires a second. The election is accomplished by secret ballot; the three receiving the greatest number of votes are declared elected and the fourth highest is named alternate (in case one of those elected can not serve). The Chairman and the Secretary do not vote in the election, nor do they make nominations.
- 8) After the election, the Chairman will write each new member and invite him to serve for a four-year term. Background information on Laboratory history and activities should be included.
- 9) The agenda for a meeting is prepared jointly by the Chairman and the Secretary. Suggestions from Committee members are always welcome.

- 10) Past members are eligible for reelection. Past members are welcome to attend meetings and are expected to participate in discussions and their contributions add much to the meetings. They do not, however, vote in the election of new members and on other motions.

Since its beginning, the Advisory Committee has indeed served the Laboratory well. Not only has it been the means of a strong liaison between industry and the Laboratory, but also it has given the necessary input which has insured that research projects undertaken were those most essential to the development of the mining and associated mineral industries of North Carolina.

Although the Advisory Committee has made and continues to make important contributions, three reports generated by subcommittees and accepted by the Advisory Committee stand out. The first of these was made in 1960 by a subcommittee under the chairmanship of Bruce Silvis. This report emphasized the purpose of the Laboratory and stated a number of goals to be obtained and then outlined a series of research projects to reach these goals. It suggested and recommended a broadening of the scope of Laboratory activities. The second report, which came in 1966 from a subcommittee chaired by Charles E. Hunter reassessed and reaffirmed the Silvis report. It recommended some new projects to be undertaken because of changing conditions in the Mining and Mineral Industries. Both of these reports have been accepted by the University Administration and are quoted in making "B" budget requests on behalf of the Laboratory. The third report was generated by discussions of the Advisory Committee on the probability of there being considerable quantities of undiscovered mineral deposits in North Carolina. A subcommittee, therefore, was appointed in January 1966 under the chairmanship of Dr. Leo J. Miller to conduct a study and make recommendations on a course of action. The report of this subcommittee which was accepted by the Advisory Committee recommended a program for mineral exploration within the "slate belt" by means of aeromagnetic surveying. By Committee action, the report was referred to the Division of Mineral Resources in the North Carolina Department of Conservation and Development for implementation. The division was successful in arranging a joint project with the United States geological survey. Though this recommendation was approved by the Department of Conservation and Development, it failed in the 1967 General Assembly, apparently as a result of very unfortunate publicity relating to the mining industry.

In the summer of 1958 a building adjacent to the Laboratory and with a net area of approximately 9,500 sq. ft. was offered for sale. Laboratory officials and the Advisory Committee felt that every effort should be made to secure this building and make it a part of the existing Laboratory. This urgent need was presented to the administration of North Carolina State University with the recommendation that it be included in the Capital Improvement Budget request to be presented to the 1959 General Assembly. However, it was learned that the budget requests were already developed to such a point that additions or changes were no longer possible. The President of the Consolidated University, however, offered to see that a request for appropriations for the building was placed before the General Assembly, and further agreed that he would do all he could to obtain favorable action.

In order to insure that the building would not be sold before the Legislature could act, the North Carolina Mining Association banded together and raised \$6,500 to cover a 12-month option on the building and property. The building was optioned to the Mining Association at \$65,000, and when the Legislature met, many members of the Mining Association went to Raleigh to plead with the Budget Commission to supply the funds to purchase the building and lot. The General Assembly considered the request for funds favorably and appropriated \$65,000 for the purchase of the building and lot and \$10,000 for its renovation. The transaction for acquiring the building and lot for the Laboratory was completed in August 1959. The association members who had contributed voted to donate the \$6,500 to the Laboratory for the purchase of a worthwhile item of needed equipment. Using this money, a dry grinding Patterson mill with air classification system and product collector was secured which now is in use in the new building along with many other pieces of equipment.

In May 1968, Dr. Henry B. Smith, Associate Dean of Engineering for Research and Graduate Programs, became Chairman. In January 1957, Mr. W. T. McDaniel, Chief Engineer, became Secretary. In May 1959, Dr. Jasper L. Stuckey was elected a permanent member of the Committee, and in January 1968, Professor N. W. Conner was elected a permanent member.

Respectfully submitted,

N. W. Conner
Charles E. Hunter
P. N. Sales
Jasper L. Stuckey

1/27/70