

Champaign County Bank Plaza
Fourth Floor
102 East Main Street
Urbana, IL 61801
June 19, 1981

Mr. David Siefkin
U.S. Nuclear Regulatory Commission
Division of Fuel Cycle and Material Safety
Low-Level Waste Branch
Washington, D.C. 20555

Dear Mr. Siefkin:

Enclosed please find a copy of a letter being sent to U.S. Ecology, Inc., describing the projects that USGS is planning for the Sheffield rad site. In the letter we describe the nature of these projects, the areas in which instruments will be installed, types of instruments and methods of installation. We also discuss the data collection requirements of these projects, namely the need to be on site during storm events to measure runoff, collect sediment and to trace wetting fronts in the soil. In connection with data collection we discuss the necessity of establishing an agreement with U.S. Ecology, Inc. to provide for 24-hour, 7-day access to the rad site to collect this data.

Illinois Department of Nuclear Safety has reviewed our project activities and have expressed an interest in the kinds of data that these projects will develop. They will be sending a letter to U.S. Ecology, Inc. in which they will express their intent to support us in carrying out these projects. They will also request that USE, Inc. cooperate with USGS in establishing a working agreement so that we will have access to collect the necessary data.

We would appreciate your reviewing this letter and forwarding any comments to us. Also if you would inform USE, Inc., that you concur with our project activities and our need for access to the site to obtain data, it would help us to proceed with project activities. A letter from USNRC to USE, Inc., assuring them that our project activities will not interfere with their being able to meet their USNRC license requirements will probably be necessary before USE, Inc. will sign our letter of agreement. We would appreciate your forwarding such a letter to them.

If you have any questions or need any additional information, please call me at FTS 958-5376.

FOR THE DISTRICT CHIEF

Sincerely yours,

James B. Foster
Hydrologist

8109030278 810814
PDR ADOCK 02700039
C PDR

JBK:lrs
Enclosures
cc: USNRC, Region III

JUL 6 1981



United States Department of the Interior

GEOLOGICAL SURVEY

Champaign County Bank Plaza
Fourth Floor
102 East Main Street
Urbana, IL 61801
June 19, 1981

Mr. Charles F. Eason
Director for Governmental Affairs
U.S. Ecology, Inc.
1100 17th Street, N.W.
Washington, D.C. 20036

Dear Mr. Eason:

Enclosed is a letter which in effect is an amendment to the existing letter of understanding between U.S. Ecology, Inc. and USGS dated November 18, 1976. As you suggested in a telephone conversation with John B. Robertson, we have outlined the essential project activities that will be involved in our continuing research at Sheffield. We have also discussed the elements of the project operation which necessitate further agreement and understanding between USGS and U.S. Ecology, Inc.

We would appreciate your reviewing this letter of understanding and sending or relaying any suggested additions to John B. Robertson. We will then prepare a final letter to be signed by you and Mr. Cohen.

If you feel that there is a need for us to meet with your technical people to discuss the technical aspects of these projects, we will be happy to do so.

FOR THE DISTRICT CHIEF

Sincerely yours,

James B. Foster
Hydrologist

JBF:lrs

Enclosure

cc: Sid Wright, U.S. Ecology, Inc.
Maury Neuweg, IDNS
John B. Robertson, USGS

JUL 6 1981



United States Department of the Interior

GEOLOGICAL SURVEY

Champaign County Bank Plaza
4th Floor
102 East Main St.
Urbana, IL 61801
June 19, 1981

Mr. Charles F. Eason
Director for Governmental Affairs
U.S. Ecology, Inc.
1100 17th Street, N.W.
Washington, D.C. 20036

Dear Mr. Eason:

The U.S. Geological Survey is planning further research work at the Sheffield Low-level Radioactive Waste Burial Site to obtain data on two aspects of the hydrogeologic system. One project deals with movement of water through the unsaturated zone and the other with erosion and land surface degradation. The hydrologic and geologic data obtained from these projects will provide further data input to agencies concerned with developing criteria for future site selection. The purpose of this letter is to amend our original letter of understanding, dated November 18, 1976, to cover the new project activities.

In studying soil moisture movement from land surface down to the zone of saturation, we will be utilizing the area of the rad site above and adjacent to the tunnel. The area will extend from the south edge of the trench 11 to the north edge of trench 1 and from the east rad site fence west to a line extending north from the northwest corner of the tunnel area enclosure fence.

Instruments will be installed and access holes constructed to measure and monitor soil moisture movement, and to collect soil moisture samples. One and a quarter inch diameter holes will be drilled with a hand auger to depths ranging from 12 inches to 48 inches. Soil moisture tensiometers will be placed in these holes and the holes will be backfilled with soil so as to recreate as nearly as possible the undisturbed condition. Two-inch holes will be augered and suction lysimeters installed in the same manner. The lysimeters will be used to collect soil water samples. Other holes will be drilled and lined with thin walled tubing to provide access for monitoring moisture movement with a moisture meter and a density meter. These tubes will be sealed at the surface and capped when not being used. The instruments and access holes will be installed in trench caps, in valleys between trench caps and in undisturbed soil.

In connection with the soil moisture movement study we will install a weather station with instruments for recording data from which evapotranspiration rates can be calculated. A shelter (4 ft. by 4 ft. by 8 ft) for housing recording equipment will be set up on the north edge of trench 2 adjacent to the access road and about 150 feet west of the east fence. A 4 ft. by 4 ft. concrete pad will be poured to provide a base for the shelter.

The erosion study will include three micor sites from which runoff and sediment will be measured. Parshall flumes and sediment samplers will be installed in major drainageways to measure runoff and sediment loss from larger areas of the site.

Two micro sites will be set up on site, one on trench 2 and the other on trench 11 both of which will be within the area of the soil moisture study. A control micro site will be set up on the hill slope outside the south fence near well 103.

Flumes with sediment samplers will be installed at the following locations: 1) the gravel lined drainageway on the west end of trench 4; 2) near well TA-3 in the stream that drains the valley north of trench 14A; and 3) south of well 105 in the stream that drains the southwest area of the site.

Due to the nature of the data collection requirements for both of these projects, it is necessary that the U.S. Geological Survey establish an operational understanding with U.S. Ecology. The essential part of our data collection will occur during and immediately following storm events. Collecting data during storms will necessitate that we reestablish our freedom of entry to the site that was initially set up for us by verbal agreement between your attorney Mr. Schultz and the attorney for IDNS, Mr. Weaver. We are in the process of establishing a field office at the site so that a person will be there full time to maintain instruments and collect data. His presence on site will provide an opportunity to expand communication and cooperation between ourselves and your site management people.

We also need to establish some agreement concerning the maintenance of the site in the area in which soil moisture instruments will be installed. We will assume responsibility for maintaining the grass and filling in any slump holes that may develop in this area. The necessity for us to assume this responsibility is to avoid having mowing equipment or other heavy equipment destroy instrumentation.

The only vehicular travel on site will be on the access road between trenches 1 and 2 to the west end of trench 1. Travel on this road will be related to servicing equipment and transporting sediment samples.

The USGS will inform all of their personnel who may be working at the site of the security and safety regulations which USE is required to abide by under their license with USNRC. USGS personnel will be held responsible for securing and locking gates that they may use to enter or leave the rad site. The USGS will install and maintain instruments in such a way as to not disturb the vegetative cover and thus increase erosion from the site.

Sincerely,
United States Geological Survey

U.S. Ecology, Inc.

By _____
Phillip Cohen
Chief Hydrologist, Water
Resources Division

By _____
Charles F. Eason
Director for Governmental Affairs