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September 17, 1990

Mr. A.R. Hanke  
 Waste Programs Branch  
 Waste Management Division  
 Environmental Protection Agency  
 345 Courtland Street, N. E.  
 Atlanta, Georgia 30365

Date: 9/29/90  
 Site Disposition: SST Phase II  
 EPA Project Manager: RM

Subject: Screening Site Inspection, Phase I  
 E.R. Squibb and Sons  
 Kenly, Johnston County, North Carolina  
 EPA ID No. NCD991278730  
 TDD No. F4-9002-44

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#3163

Dear Mr. Hanke:

FIT 4 conducted a Phase I Screening Site Inspection at E.R. Squibb and Sons in Kenly, Johnston County, North Carolina. This assessment included a review of EPA and state file material, completion of a target survey, and an offsite reconnaissance of the facility and surrounding area.

E.R. Squibb and Sons is located along Flowers Road off Interstate 95 about 0.5 mile southwest of Kenly, North Carolina. The facility is located in a sparsely-populated area outside the city limits of Kenly. There are few commercial businesses with one located 0.25 mile south of the property line. Accessibility to the facility is restricted by an 8-foot wire fence and a guarded entrance (Refs. 1, 2).

E.R. Squibb and Sons began operations as a new facility in 1978. Prior to 1978, the property was used for farming. The Squibb facility is a 97-acre property which receives bulk shipments of unfinished penicillin, which it processes to such finished forms as tablets, capsules, and powders. Squibb generates halogenated and nonhalogenated solvent wastes at a rate of 125,000 lbs./yr. The waste materials identified as hazardous result from two separate process operations. The first process involves the recovery of solvents, which are collected as a mixture of spent methyl alcohol and spent methylene chloride, from tablet coating. The second process involves the recovery of solvents from the drying of penicillin cake which contains n-butyl alcohol (Refs. 3, 4).

Beginning in 1978, Squibb and Sons stored halogenated and nonhalogenated waste solvents in tanks and drums on site. These wastes are transported off site every 90 days by Seaboard Chemical Company (Ref. 3). Until January 18, 1982, Squibb stored butyl alcohol in an underground storage tank; however, file materials indicate that fuel oil is the only substance presently stored in underground tanks at the facility (Ref. 3). There is no documentation that addresses spills of any hazardous substance(s) on site.

Mr. A.R. Hanke  
Environmental Protection Agency  
TDD No. F4-9002-44  
September 17, 1990 - page two

E.R. Squibb and Sons filed a Resource Conservation and Recovery Act (RCRA) Part A application on November 13, 1980, for storage of hazardous waste (Ref. 1). The company withdrew its application, thereby requiring waste removal within the 90-day storage period. The North Carolina Department of Human Resources, Solid and Hazardous Waste Management Branch, inspected Squibb and Sons on January 23, 1990. The purpose of this inspection was to ensure the facility was in compliance with applicable 40 CFR, Parts 262, 265, and 268. Only minor violations were noted (Ref. 6). As of March 1990, the Squibb facility is classified as a large-quantity generator of hazardous waste (Refs. 5, 7). Prior to RCRA, Squibb and Sons was issued an air quality permit by the North Carolina Division of Environmental Management (Ref. 5).

The E.R. Squibb and Sons facility is located in the fall zone of North Carolina near the city of Kenly. The fall zone is an area of transition between the folded and faulted metamorphic and igneous rocks of the Piedmont Physiographic Province to the north and the sedimentary assemblage of the Atlantic Coastal Plain to the south (Ref. 8, p. 5). The topography of the area represents a fairly flat plain with 50 to 70 feet of fluvial incision along the streams (Ref. 9). The mean annual rainfall is 48 inches, with a mean net precipitation of 7 inches (Ref. 10, pp. 43, 63).

A thin blanket of surficial sands covers most of the area and ranges in thickness from 0 to 30 feet. The coarse-grained sands and gravels of the Cretaceous Tuscaloosa Formation outcrop in the fall zone and may occur as a thin layer between the surficial sands and the crystalline basement rocks (Ref. 8, p. 23).

In Kenly, the crystalline basement rocks are primarily slate. Groundwater in the study area is derived from the unconfined water-table aquifer. The groundwater resides in the surficial and Tuscaloosa sands, if present, and in the secondary faults and fractures in the slate basement rocks (Ref. 8, pp. 23, 25). Municipal wells in Kenly are cased to the slate which occurs at a depth of 40 feet below land surface (bls) (Ref. 8, p. 25).

The water-table surface generally conforms to the topographic gradient, although it is somewhat flatter (Ref. 11, p. 9). In the facility area, groundwater flow should be northwesterly (Ref. 11, p. 9). Depth to the surficial water table is approximately 10 to 15 feet bls based on mean pool elevations of proximal surface water bodies (Ref. 9). Hydraulic conductivity for the surficial sands should be on the order of  $10^{-1}$  cm/sec (Ref. 12, p. 29).

The Squibb facility receives water from the city of Kenly. The city of Kenly purchases drinking water from the Smithfield Public Utility Authority. Smithfield Public Utilities has a surface water intake along the Neuse River. This is the only surface water intake in Johnston County (Ref. 13). The city of Kenly system connects with the Smithfield system at the intersection of Highways 2144 and 301 (Refs. 2, 9). Residents not served by a municipal water system obtain water from private wells (Ref. 2). The nearest resident and private drinking water well are located about 2,800 feet north of the facility; the well is completed at a depth of 45 feet (Ref. 14).

A house count from USGS topographic maps identifies 430 homes within a 3-mile radius using private wells. An additional 462 homes located between 3 and 4 miles from the facility also use private wells. A school and some churches are located within 1 mile of the facility, but they are on the municipal water system (Refs. 2, 9). Population is 1,372 within 1 mile of the facility and 4,960 within 4 miles (Ref. 15). Kenly maintains their own water system that has approximately 1,000 customers.

Mr. A.R. Hanke  
Environmental Protection Agency  
TDD No. F4-9002-44  
September 17, 1990 - page three

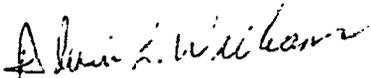
Surface water drainage from the facility appears to travel overland southwest for about 1,200 feet. The runoff continues east along Interstate 95 for about 6,500 feet before entering Little River. The Little River continues south for the remainder of the 15-mile migration pathway. Smithfield Public Utilities is not affected by surface water drainage from this facility (Refs. 9, 14). There are few wetlands located along the Little River south of the facility (Ref. 9). There are no surface water intakes located along the 15-mile migration pathway (Ref. 16). Recreational fishing does occur along the Little River (Ref. 17).

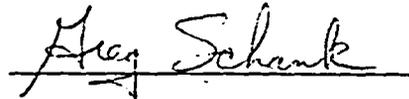
There are no critical habitats within the vicinity of the study area (Ref. 18). However, several threatened or endangered species are recognized by the state throughout Johnston County (Ref. 19).

Because of the permeability of the confining layer within the study area and the number of groundwater targets, it is recommended that Phase II of the Screening Site Inspection be conducted at E.R. Squibb and Sons on a high-priority basis. If you have any comments or questions about this assessment, please contact me at NUS Corporation.

Very truly yours,

Approved:

  
Alvin L. Williams  
Project Manager



ALW/gwn

Enclosures

cc: Robert Morris

## REFERENCES

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3. D. Mark Durway, Geologist, North Carolina Department of Human Resources, letter to Denise Bland, EPA North Carolina CERCLA Project Officer, December 19, 1985. Subject: Preliminary Assessment Report for E.R. Squibb and Sons.
4. B.H. Pharr, Plant Engineer, E.R. Squibb and Sons, letter to William Paige, North Carolina Division of Health Services, March 30, 1982. Subject: Closure plan.
5. Interim Status Inspection Report for E.R. Squibb and Sons, Kenly, North Carolina; filed by Larry D. Perry, North Carolina Solid and Hazardous Waste Management Branch, January 28, 1982.
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8. Richard D. Pusey, Geology and Ground Water in the Goldsboro Area, North Carolina Department of Water Resources, Ground Water Bulletin No. 2 (Raleigh: U.S. Geological Survey, 1960).
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10. U.S. Department of Commerce, Climatic Atlas of the United States (Washington: GPO, 1978), (Washington, D.C.: GPO, June 1968) Reprint: 1983, National Oceanic and Atmospheric Administration.
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14. NUS Corporation Water Use Survey for E.R. Squibb and Sons, TDD No. F4-9002-44, March 13, 1990.
15. U.S. Environmental Protection Agency, Graphical Exposure Modeling System (GEMS) Data Base, compiled from U.S. Bureau of the Census data (1980).

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17. Don Baker, Habitat Conservation Manager, Wildlife Resources Commission, telephone conversation with Alvin L. Williams, NUS Corporation, March 27, 1990. Subject: Recreational activity along the Neuse River, Little River, and Middle Creek.
18. U.S. Fish and Wildlife Service, Endangered and Threatened Species of the Southeastern United States (Atlanta, Georgia, 1988).
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