670SERBSF10,638

670SERBSF10,638

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State of North Carolina
Department of Environment, Health, and Natural Resources
Division of Solid Waste Management
P.O. Box 27687 · Raleigh, North Carolina 27611-7687

James G. Martin, Governor
William W. Cobey, Jr., Secretary

William L. Meyer
Director

August 17, 1992

Mr. Craig Benedikt
NC CERCLA Project Officer
EPA Region IV Waste Division
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Subject: Preliminary Assessment
Spann Property
Hendersonville, Henderson, NC
NCD 986 180 917

Dear Mr. Benedikt:

This letter contains findings of the Preliminary Assessment of the Spann Property site on US 25 North of Hendersonville in Henderson County, North Carolina.

INTRODUCTION

Under authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA), the North Carolina Superfund Section conducted a Preliminary Assessment (PA). The purpose of this investigation was to collect information concerning conditions at the Spann Property site sufficient to assess the threat posed to human health and the environment and to determine the need for additional CERCLA/SARA or other appropriate action. The scope of the investigation included review of available file information, a comprehensive target survey and a site reconnaissance (February 20, 1991).

SITE DESCRIPTION, OPERATIONAL HISTORY, AND WASTE CHARACTERISTICS

LOCATION

The Spann Property site is an eight acre site including a 3.5 acre active scrap yard located on US 25 North in Hendersonville, Henderson County, North Carolina (Figure 1) (Ref 14,15,32). The geographic coordinates of the site are 35^0 23' 11.9" N latitude and 82^0 30' 12.6" W longitude (Ref 5). To access the site from Asheville, travel south on I-26 to the US 25 Exit. Take US 25 south approximately 1 mile and turn left onto the property across from Shepherd Memorial Park (Fig 1,2). The site borders Mud Creek.

The climate of Henderson County is influenced strongly by elevation and irregular topography, which causes large differences in climate within the county (Ref 31). Summers are warm and humid with daily temperatures reaching 85^0 F or higher. The winter months are generally mild with daily temperatures reaching 44^0 F (Ref 31). Mean annual precipitation is 56 inches and mean annual lake evaporation is 34 inches, therefore, net precipitation for the area is 22 inches per year (Ref 12).

SITE DESCRIPTION

The Spann Property is an eight acre site which has been used, possibly since the 1950's for various types of waste disposal (Ref 32). Some of the wastes disposed have reportedly come from the General Electric (GE) plant in East Flat Rock. Currently, 3.5 acres of the site are used as an active scrap yard (Ref 15). Wastes observed on site include wrecked cars and miscellaneous automobile parts, approximately 40 full and empty drums believed to contain tar (no identifying labels found), coal cinders, x-ray tables, stoves and refrigerators, sheet metal and house gutters (Ref 15). The scrap yard property is located on Mud Creek, a small slow flowing stream (Ref 15). It is bordered by US 25 on the west and Mud Creek on the east (Ref 15)(Fig 1). There is a building and a house on the property. The perimeter of the property is fenced with a locked gate at the entrance (Ref 24).

OPERATIONAL HISTORY AND WASTE CHARACTERISTICS

The Spann Property site was owned by the now deceased John J. Spann. The property was given to his daughters, one being Mary Beck. Ms. Beck currently rents the property to Herbert Hodge. Mr. Hodge runs the site as a scrap yard called Naples Auto Disposal and Salvage Corporation. The scrap yard has an operational permit # 045004863 from the North Carolina Department of Revenue and also has a permit with Henderson County (Ref 15). The years of operation of the disposal site are unknown at this time.

Approximately 15 to 20 years ago, Gene Shepherd of East Flat Rock used the Spann Property for disposal and incineration of waste cardboard and other material. The waste came, in part, from GE in East Flat Rock. Mr. Shepherd was a contracted hauler for GE at the time (Ref 20). It is believed that the waste hauled to the Spann Property was the same type of waste that Mr. Shepherd originally hauled to his own property, currently known as the Shepherd Farm Site (NCD 986 170 686). To date, PCB's have been measured above EPA action levels in soil at the Shepherd Farm and private drinking water wells were found to contain elevated levels of tetrachloroethylene. Investigations of the Shepherd Farm site raised concern that similar contaminants might be found at the Spann Property.

Mr. Shepherd reports having hauled about 50 cubic yards of cardboard per day, two truckloads of wood per week and two barrels of buffing compound residue per week from the GE plant to the Shepherd Farm site (Ref 28). He estimates that 95% of the waste brought there was cardboard and was burned on site (Ref 29). The rest of the waste was buried on site. He also reported that occasionally electrical insulators were taken to the site and they were broken on site to salvage the copper (Ref 29). (Note: Mr. Shepherd may have been referring to capacitor not insulators as the latter generally do not contain copper parts.) It is possible that the electrical components contained PCB laden oil. According to Mr. Shepherd, he hauled the GE waste to the Spann Property after he stopped hauling to his own property due to the neighbors complaining about the burning. The waste was dumped on eight acres of the Spann Property into a swampy area and then covered with dirt using a bulldozer. They also disposed on a knoll in the middle of the swampy area and burned cardboard once a week (Ref 32). The area of disposal at this time is unknown on the property, so we assume the whole site is contaminated (Ref 11). Mr. Shepherd held no waste disposal permit during the years of hauling the GE wastes (Ref 29).

According to a GE Representative, Lee Humphrey, the Material Safety Data Sheet for the buffing compound showed "no hazardous ingredients" (Ref 30). Mr. Humphrey also stated that it was unlikely that PCB containing oil was hauled off site, all PCB oil arrived at the GE plant in railroad tank cars and was stored on site after use. Mr. Humphrey indicated that waste solvents such as trichloroethylene and tetrachloroethylene were probably hauled off site by Mr. Shepherd (Ref 30).

GROUND WATER PATHWAY

HYDROGEOLOGIC SETTING

Henderson County is in the Western Edge of the Piedmont Physiographic Province. In the Piedmont Province, a layer of loose material called saprolite underlies the land surface and ranges in thickness from a 1-2 feet near bedrock outcrops to more than 100 feet. The saprolite consists of unconsolidated granular material, including coarse sands, gravels,

and clays, and is derived by the weathering of the underlying bedrock. The Piedmont bedrock consists of many different types of igneous, metamorphosed igneous and sedimentary rocks (Ref 25).

The greater part of Henderson County is underlain by Henderson Gneiss which is characterized by feldspar porphyroblasts, locally broken and deformed into augen. The rock varies in composition from a granite to a biotite gneiss or quartzite with a few scattered feldspar porphyroblasts. The broad valleys of the French Broad River, Mud Creek, and Hooper Creek lie mostly within the area of Henderson outcrops (Ref 25).

The soil in the general area of Spann property is Codorous loam which is a moderately well drained to somewhat poorly drained soil frequently found in depressed areas on level flood plains. The surface layer is brown loam 12 inches thick. The subsoil layer is dark brown loam and mottled grayish brown fine sandy clay loam 33 inches thick. The underlying layer, to a depth of 60 inches, is dark gray loamy sand. Permeability is moderate, and available water capacity is medium. Shrink swell potential is low (Ref 31). The average hydraulic conductivity for this type of material is 10^{-6} (Ref 34).

The large wells supplying institutions and subdivisions in Henderson County were drilled in the Henderson gneiss, which covers a large part of the county. Groundwater is found also in the saprolite overlying bedrock, which behave as a single unconfined aquifer. Water in the saprolite is found in the pore spaces, whereas water in the gneiss unit occurs in joints, fractures and bedding planes. Inventoried drilled wells have, on the average, a yield of 18.3 gallons per minute (gpm), or 0.156 gpm per foot (Ref 25). Recharge to the groundwater tends to be in the interstream areas as precipitation percolates downward to the water table. The groundwater discharges into the perennial streams and lakes, and the lowest points on the water table are at these places (Ref 25). Potable groundwater in the area is obtained from drilled wells at depths approximately 200 to 400 feet (Ref 27). Depth to groundwater at the site is estimated at about five feet based on the site elevation relative to Mud Creek (Ref 15).

GROUND WATER TARGETS

The majority of the population within a four mile radius of the site relies on a surface water intake located 4.5 miles upstream of the site near Mills River Bridge operated by Hendersonville Water Treatment Authority (Ref 21). There are 11 community well water systems within a four mile radius of Spann Property. They serve a total of 1179 residents (Ref 1)(Fig 3). Residences not connected to the Hendersonville public water supply system or community wells rely on private wells for their drinking water.

There are approximately 1658 homes within a four mile radius of the site which use private wells for drinking water (Table 1)(Ref 9). Using the 1990 US Census figure of 2.38 persons per household in Henderson County, this equates to 3944 residents using private wells within four miles of the site (Ref 13). The nearest well is located at Naples Church approximately 600 feet NW of the Spann property (Ref 26). There are no full time residents using the church well (Ref 26). Fletcher Academy is the nearest school on private ground water wells, located approximately one mile northeast of the site (Ref 27). There are 3944 residents on private groundwater plus the 1179 on public water which gives a total of approximately 5123 people that rely on ground water within the four mile radius of the site (Table 1)(Ref 9). The nearest residence believed to be using private well water is in the 0.5 mile radius (Ref 26).

GROUND WATER CONCLUSIONS

A release of hazardous substances from Spann Property to the unconfined bedrock aquifer is suspected due to bulldozing and trenching to cover waste and the shallow depth to the aquifer. There are no residences known to be using groundwater within 0.25 miles. The total ground water population potentially affected by the site is 5123 people (Table 1).

SURFACE WATER PATHWAY

HYDROLOGIC SETTING

Overland drainage from the disposal area flows northeast 200 feet to the probable point of entry (PPE) on the Mud Creek. This creek flows approximately 1.75 miles northwest to the French Broad River. The fifteen mile surface water pathway extends another 13.25 miles north along the French Broad River (Figure 4). The average flow along the surface water pathway includes Mud Creek at 178.20 cfs and French Broad River at 575.11 cfs (Ref 16). No surface water intakes were identified along the fifteen mile surface water pathway downstream of the site (Ref 21). The 2-year 24-hour rainfall event is 3.0 inches (Ref 33).

The Spann Property site is located in wetlands along Mud Creek (Ref 3,5). Wetlands border segments of Mud Creek and the French Broad River for a total of 1.5 miles of wetland frontage downstream of the site (Ref 3). Mud Creek is located in the French Broad River Basin (Ref 22). Mud Creek is a class C stream, protected for fish and wildlife propagation, secondary recreation and agriculture (Ref 10). The French Broad River is a class WS III stream, water supply segment with no categorical restrictions on watershed development or discharges (Ref 10).

SURFACE WATER TARGETS

There are no surface water intakes for drinking water within fifteen miles downstream of the PPE. Residents in the area are served by the Hendersonville municipal water system. This surface water intake is 4.5 miles upstream on the Mills River. Treated water from Hendersonville is also purchased by the town of Laurel Park and the Hoopers Creek Water System (Ref 1)(Fig 3). Residents not served by the municipal water supply obtain drinking water from individual private or public wells (Ref 21). Mud Creek and French Broad River are used for recreational fishing. Aquatic species commonly caught are catfish, muskies, bluegills and sunfish (Ref 23).

There are numerous wetlands located along Mud Creek downstream of the PPE. The nearest wetland begins on site and extends wetland frontage intermittently 0.5 miles along Mud Creek (Fig 3). Along the 13.25 mile downstream surface water pathway on the French Broad River, total wetland frontage is approximately one mile.

There are many sensitive environments along the French Broad River surface water pathway. Cryptpbranchus allenganensis (Hellbender) is located along the surface water pathway seven miles downstream from the PPE on Mud Creek. This species is of special concern and extremely rare in North Carolina. Necturus Maculosus (mudpuppy) is located along the surface water pathway 7.25 miles downstream from the PPE. This species is of special concern and critically imperiled in North Carolina because of extreme rarity. Percina Macrocephala (longhead darter) is located along the surface water pathway 10 miles from the PPE. This species is of special concern and also of historical occurrence in North Carolina, perhaps not having been verified in 20 years. Vireo gilvus (warbling vireo) is located along the surface water pathway 10.50 miles downstream from the PPE and is significantly rare. It is imperiled in North Carolina because of rarity and rank of breeding population in the state. Sandy Bottom, which is a unique biotic community registered with the NC Natural Heritage Program, appears along the surface water pathway 12 miles downstream from the PPE. Hemidactylum scutatum (Salamander) living in pools, bogs and wetlands is located along the surface water pathway 12.25 miles downstream from the PPE. This species is of special concern and rare or uncommon in North Carolina. Ambystroma talpoideum (mole salamander) which breeds in fish-free semi-permanent woodland ponds is located along the surface water pathway 13 miles downstream from the PPE. This species is of special concern and imperiled in North Carolina because of rarity. Clemmys Muhlenbergii (Bog Turtle) lives in bogs and wet pastures and is located along the surface water pathway 13.5 miles downstream from the PPE. This species is threatened and imperiled in North Carolina because of rarity. Montane Alluvial Forest is a natural community located along the surface water pathway 14.45 miles downstream from the PPE (Ref 6).

SURFACE WATER CONCLUSIONS

During the site visit, there were no signs of past disposal or incineration of waste cardboard on the property, primarily because the property was covered with scrap yard waste. It was not determined whether leachate was flowing from the Spann Property to Mud Creek (Ref 15). There are no surface water supply intakes along the 15 miles downstream (Ref 21). There are numerous wetlands along Mud Creek and the French Broad River, approximately 0.5 miles of frontage along Mud Creek and 1 mile of frontage along French Broad River (Ref 14). There are numerous sensitive environments along the surface water pathway (Ref 6).

SOIL EXPOSURE AND AIR PATHWAY

PHYSICAL CONDITION

The site is covered with automobile debris, construction debris and wastes. There are grass, shrubs and weeds on site. The site is surrounded by a fence and locked gate (Ref 24).

SOIL AND AIR TARGETS

There are three residents living within 200 feet of waste disposal area (Ref 24). Fletcher Academy, the nearest school, is located approximately one mile northeast of the site (Ref 27). There are approximately 18 residences within a 0.25 miles of the site (Ref 9). The total population within a 4 mile radius of the site is 10231 as determined by the GEMS database (Ref 9). There are 20 acres of wetlands located within a 0.5 miles radius including the site itself (Ref 3). There are two sensitive environments within a four mile radius of the site. Cryptobranchus allenganiensus (Hellbender) is located 2.5 miles from the site. This species is of special concern and critically imperiled in North Carolina because of extreme rarity. Synosma cugella (Sweet Indian plantain) grows in bottomlands located 2.25 miles from the site. This plant species has an historical occurrence in North Carolina (Ref 6).

SOIL EXPOSURE AND AIR PATHWAY CONCLUSIONS

During the on site reconnaissance no soil discoloration or odors were reported at the site. There was too much debris covering the ground to make any determination. Although the site is fenced limiting access to the nearby population, there are three residents at the site and workers at the scrap yard potentially subject to soil exposure. A release to the air is not suspected because of the nature of the wastes disposed. In addition, during the perimeter survey, no odors were detected and there was no indication of blowing dust or soil (Ref 15).

SUMMARY AND CONCLUSIONS

John J. Spann operated a landfill approximately 20 years ago. During this period, the landfill accepted an unknown quantity of industrial waste from GE Flat Rock. As a result of this practice, groundwater in the vicinity of the site may have been adversely affected. Surface water also has a high potential for contamination via drainage to Mud Creek either through wetlands or overland drainage which poses a threat to the environment and to human targets through food chain contamination. Due to the coverage of junk and debris onsite, the likelihood of human exposure to contaminated soil is minimal although a resident population exists. No release to air is suspected due to lack of odors or blowing particulates during the site reconnaissance. The site is recommended for further action under CERCLA.

Sincerely,

Holly Spires

Holly Spires
Hydrogeologist
NC Superfund Section

HS/yw

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Spann Property
Henderson County
NCD 986 180 917

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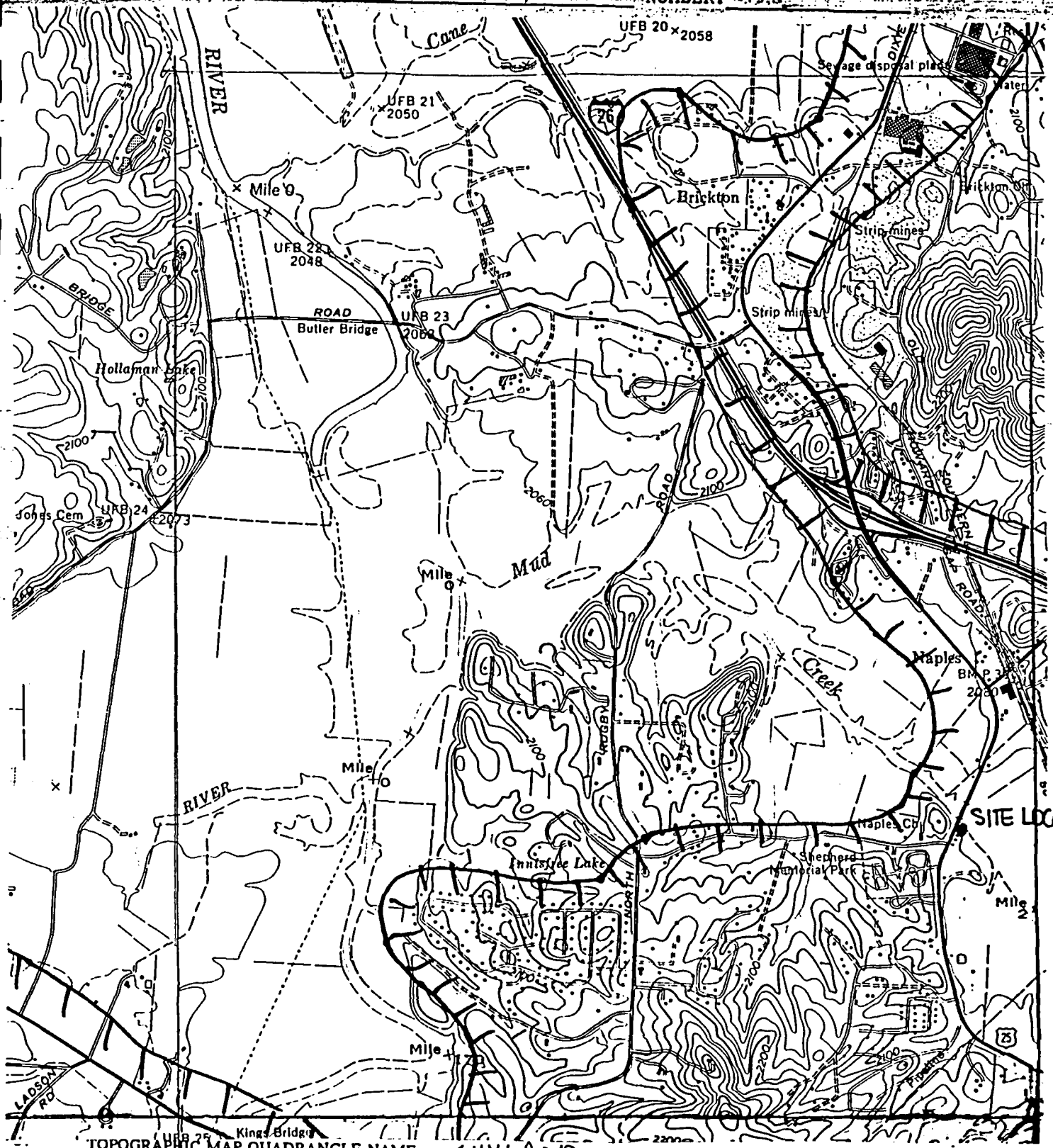
Figure

SITE NAME: SPANN PROPERTY NUMBER: NCD 986 180917

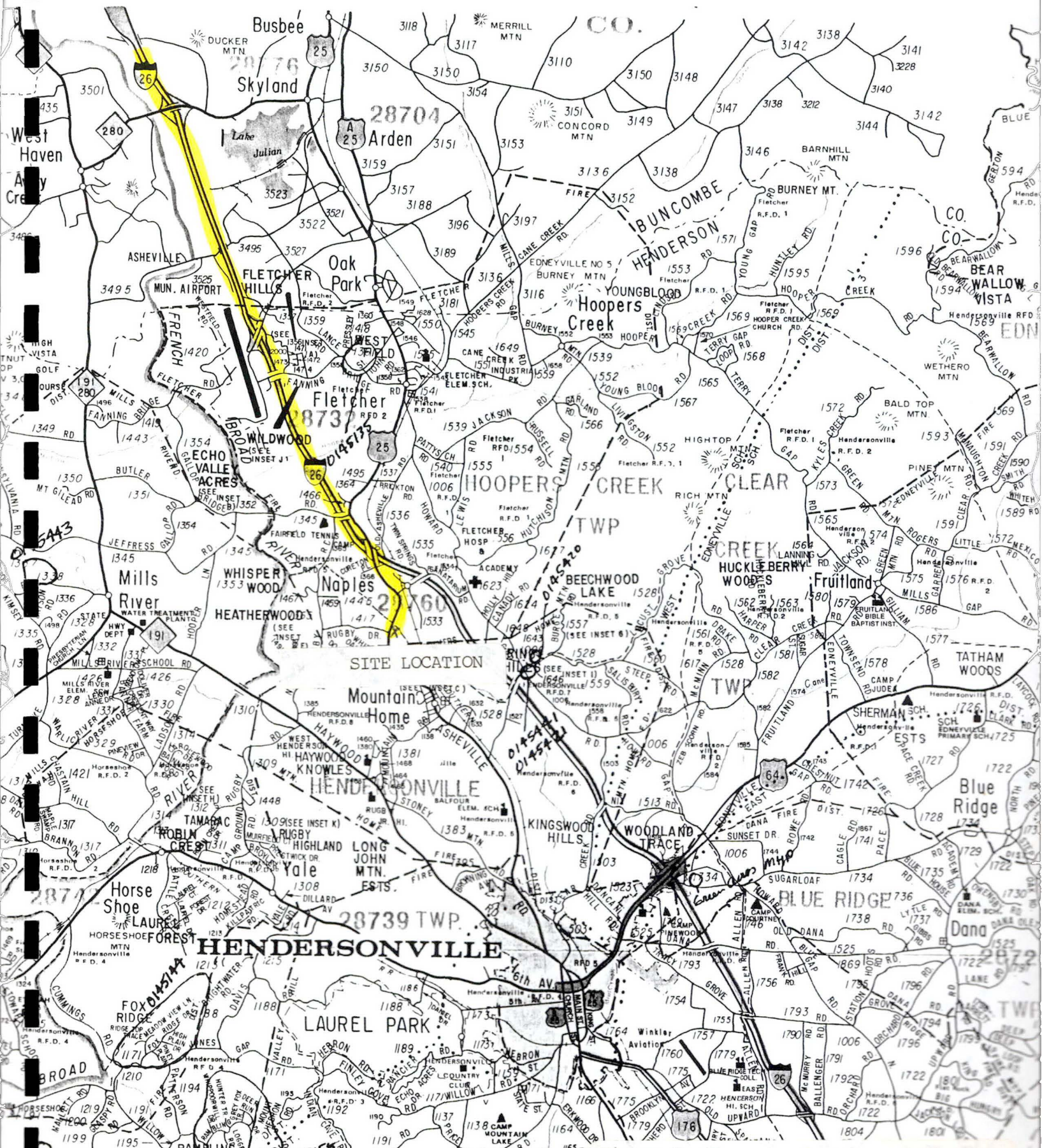


TOPOGRAPHIC MAP QUADRANGLE NAME: SKYLAND SCALE: 1:24,000

COORDINATES OF LOWER RIGHT-HAND CORNER OF 2.5-MINUTE GRID:

LATITUDE: 35° 23' 11.9" LONGITUDE: 82° 30' 12.1"

Figure 1
SPANN PROPERTY
NCD 986 180917
LOCATION MAP


SITE LOCATION
HENDERSONVILLE
Skyland
Busbee
Arden
Oak Park
Fletcher
Mills River
Naples
Mountain Home
Fruitland
Blue Ridge
Dana
Hoopers Creek
Laurel Park
Horse Shoe
Yale
Rugby
Edneyville
Bear Wallow Vista
Lake Julian
Mun. Airport
Fletcher Hills
West Fletcher
Wildwood
Echo Valley Acres
Whisper Wood
Heatherwoods
Beechwood Lake
Huckleberry Woods
Tatham Woods
Sherman Ests.
Woodland Trace
Kingswood Hills
Long John Mtn. Ests.
Highland Ests.
Robin Crest
Tamarac
Laurel Forest
Fox Ridge
Rambling Ridge
Camp Mountain Lake
Adkinson Elem.
Crooked Creek Golf Course
Camp Courtney
Camp Pinewood
Blue Ridge Coll.
Henderson Hi. Sch.
Winkler Aviation
Fletcher Elem. Sch.
Fletcher Industrial Pk.
Fairfield Tennis Camp
Fruitland Bible Baptist Inst.
Edneyville Primary Sch.
Mills River Elem. Sch.
Mills River Water Treatment Plant
Hwy Dept
Presbyterian Church
Balfour Elem. Sch.
Fletcher Hosp.
Academy
Hooper Creek Church
Hooper Creek Industrial Pk.
Country Club
Merrill Mtn.
Ducker Mtn.
Concord Mtn.
Burney Mt.
Burney Mtn.
Barnhill Mtn.
Bald Top Mtn.
Hightop Mtn.
Rich Mtn.
Piney Mtn.
Wethero Mtn.
Horseshoe Mtn.
Bell Mtn.
Buncombe
Henderson
Clear Creek
Hoopers Creek Twp
Blue Ridge
Sugarloaf
Sunset Dr.
Dana
Fruitland
Edneyville
Mills River
Haywood Knobs
Rugby
Yale
Laurel Park
Hendersonville
Arden
Skyland
Fletcher
Mills River
Naples
Mountain Home
Fruitland
Blue Ridge
Dana

Ref. 14

Figure 3

SPANN PROPERTY
NCD 986 180 917
4 MILE RADUIS TOPO MAP

Public Water Supply Wells

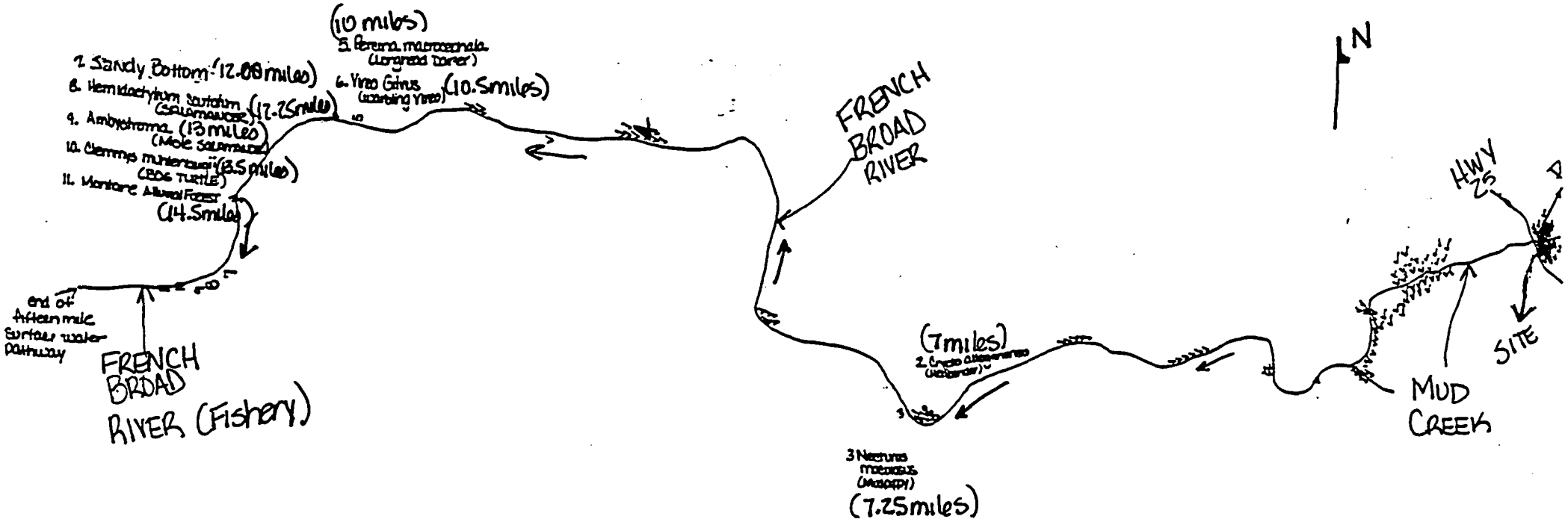
		Type	Pple serv
A.	Hendersonville Water Treatment Plant	Surface	45,100
B.	Laurel Park, Town of	Purchase	1925
B.	Hoopers Creek WTR System	Purchase	195
C.	Brightwater I & II	GW	224
D.	Fletcher Academy Inc	GW	400
E.	South Mill MHP	GW	48
F.	Green Acres Community Water System	GW	88
G.	Twin Oaks Mobile Home Park	GW	35
H.	Brightwater III	GW	100
I.	Fairfield Apartments	GW	110
J.	Holly Tree S/D	GW	42
K.	Mountain View Rest Home	GW	44
L.	Henderson Rest Home	GW	50
M.	Lambs MHP	GW	38

Note:

GW - Groundwater
Public - Purchase Water Supply
Surface- Surface water intake
Pple Serv- People actually on each water system.

WATER LINES
People served by City of Hendersonville

FIGURE 4 FIFTEEN MILE SURFACE WATER PATHWAY



VV WETLANDS

NOT TO SCALE

Figure 4

SPANN PROPERTY
NCD 986 180 917
15 MILE SURFACE WATER PATHWAY

TABLE 1
SPANN PROPERTY NCD 986 180 917
HENDERSONVILLE, HENDERSON COUNTY
GROUNDWATER POPULATION

Radius Miles	Total Population (PCGEMS, 1980)	Cumulative Population PCGEMS, 1980	Groundwater House Counts (1)	Groundwater House Counts (1) * 2.38 = (2)	Groundwater Population Public Water Supply Database (NCDHR,1992) (3)	Total Groundwater Population (2) + (3)	Cumulative Groundwater Population
0–1/4	43*	43*	18	43	0	43	43
1/4 – 1/2	152*	195*	65	152	0	152	195
1/2 – 1	248*	443*	37	88	0	88	283
1 – 2	2199*	2642*	478	1138	598	1736	2019
2 – 3	2954	5596	234	557	44	601	2620
3 – 4	4635	10231	826	1966	537	2503	5123

Note
*Population derived from house counts on topographic map.

OMB Approval Number: 2050-0095
Approved for Use Through: 1/92

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM	IDENTIFICATION	
	State: NC	CERCLIS Number: NCD986180917
	CERCLIS Discovery Date: 9-26-90	

1. General Site Information

Name:		Street Address:			
Spann Property		US 25			
City: Hendersonville	State: NC	Zip Code: 28726	County: Henderson	Co. Code: 45	Cong. Dist: 11
Latitude: 35° 23' 11.9" Longitude: 82° 30' 12.6"	Approx. Area of Site: 8 acres		Status of Site: Active		

2. Owner/Operator Information

Owner:			Operator:		
Ms Mary Beck			Herbert Hodge		
Street Address: Route 8 Box 156 A Hwy 25 North			Street Address: Route 8 Box 156A HWy 25 North		
City: Hendersonville			City: Hendersonville		
State: NC	Zip Code: 28726	Telephone: 704-693-8946	State: NC	Zip Code: 28726	Telephone: 704-693-8946
Type of Ownership: Private			How Initially Identified: State/Local Program		

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM	IDENTIFICATION	
	State: NC	CERCLIS Number: NCD986180917
	CERCLIS Discovery Date: 9-26-90	

3. Site Evaluator Information

Name of Evaluator:	Agency/Organization:	Date Prepared:
Holly Spires	NC Superfund Section	8-10-92

Street Address:	City:	State:
401 Oberlin Road	Raleigh	NC

Name of EPA or State Agency Contact:	Telephone:
Holly Spires	919-733-2801

Street Address:	City:	State:
401 Oberlin Road	Raleigh	NC

4. Site Disposition (for EPA use only)

Emergency Response/Removal Assessment Recommendation: No	CERCLIS Recommendation: Lower Priority SI	Signature:
Date:	Date:	Name:
		Position:

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM	IDENTIFICATION	
	State: NC	CERCLIS Number: NCD986180917
	CERCLIS Discovery Date: 9-26-90	

5. General Site Characteristics

Predominant Land Uses Within 1 Mile of Site:	Site Setting:	Years of Operation:
Residential Forest/Fields	Rural	Beginning Year: 0 Ending Year: 0 X Unknown

Type of Site Operations:	
Junk/Salvage Yard Municipal Landfill Other: Industrial Waste	Waste Generated: Offsite
	Waste Deposition Authorized By: Former Owner
	Waste Accessible to the Public No
	Distance to Nearest Dwelling, School, or Workplace: 200 Feet

6. Waste Characteristics Information

Source Type	Quantity	Tier
Landfill	8.00e+00 acres	A

General Types of Waste:
Construction/Demolition Waste
Other:
automobile parts, wrecked cars, drums,x-ray tables, sheet metal

Physical State of Waste as Deposited
Solid
Sludge

Tier Legend
C = Constituent W = Wastestream
V = Volume A = Area

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM	IDENTIFICATION	
	State: NC	CERCLIS Number: NCD986180917
	CERCLIS Discovery Date: 9-26-90	

7. Ground Water Pathway

Is Ground Water Used for Drinking Water Within 4 Miles:
Yes

Type of Ground Water Wells Within 4 Miles:
Municipal
Private

Depth to Shallowest Aquifer:
5 Feet

Karst Terrain/Aquifer Present:
No

Is There a Suspected Release to Ground Water:
Yes

Have Primary Target Drinking Water Wells Been Identified: No

Nearest Designated Wellhead Protection Area:
None within 4 Miles

List Secondary Target Population Served by Ground Water Withdrawn From:

0 - 1/4 Mile	43
>1/4 - 1/2 Mile	152
>1/2 - 1 Mile	88
>1 - 2 Miles	1736
>2 - 3 Miles	601
>3 - 4 Miles	2503
Total	5123

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8. Surface Water Pathway	Part 1 of 4
Type of Surface Water Draining Site and 15 Miles Downstream: Stream River	Shortest Overland Distance From Any Source to Surface Water: 200 Feet 0.0 Miles
Is there a Suspected Release to Surface Water: Yes	Site is Located in: >10 yr - 100 yr floodplai

8. Surface Water Pathway	Part 2 of 4

Drinking Water Intakes Along the Surface Water Migration Path: No

Have Primary Target Drinking Water Intakes Been Identified: No

Secondary Target Drinking Water Intakes:
None

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8. Surface Water Pathway — Part 3 of 4

Fisheries Located Along the Surface Water Migration Path: Yes

Have Primary Target Fisheries Been Identified: Yes

Secondary Target Fisheries:

Fishery Name	Water Body Type/Flow(cfs)
French Broad River	moderate-large stream/ >100-1000

8. Surface Water Pathway — Part 4 of 4

Wetlands Located Along the Surface Water Migration Path? (y/n) Yes

Have Primary Target Wetlands Been Identified? (y/n) Yes

Secondary Target Wetlands:
None

Other Sensitive Environments Along the Surface Water Migration Path: Yes

Have Primary Target Sensitive Environments Been Identified: Yes

Secondary Target Sensitive Environments:

Water Body/Flow(cfs)	Sensitive Environment Type
moderate-large stream/ >100-1000	Habitat for State designated end/thr spec
moderate-large stream/ >100-1000	Habitat for State designated end/thr spec
moderate-large stream/ >100-1000	Habitat for State designated end/thr spec
moderate-large stream/ >100-1000	Habitat for State designated end/thr spec

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9. Soil Exposure Pathway

Are People Occupying Residences or Attending School or Daycare on or Within 200 Feet of Areas of Known or Suspected Contamination: Yes Total Resident Population: 3	Number of Workers Onsite: 1 - 100

Have Terrestrial Sensitive Environments Been Identified on or Within 200 Feet of Areas of Known or Suspected Contamination: No

10. Air Pathway

Total Population on or Within:	
Onsite	3
0 - 1/4 Mile	40
>1/4 - 1/2 Mile	152
>1/2 - 1 Mile	248
>1 - 2 Miles	2199
>2 - 3 Miles	2954
>3 - 4 Miles	4635
Total	10231

Is There a Suspected Release to Air: No

Wetlands Located Within 4 Miles of the Site: Yes

Other Sensitive Environments Located Within 4 Miles of the Site: No

Sensitive Environments Within 1/2 Mile of the Site:

Distance	Sensitive Environment Type/Wetlands Area(acres)
0 - 1/4	Wetlands (1 to 50 acres)

Long/Lat Wkst.

Ref. 5

LATITUDE AND LONGITUDE CALCULATION WORKSHEET #2
LI USING ENGINEER'S SCALE (1/60)

SITE NAME: Spann Property CERCLIS #: NCD 986 180 917

AKA: _____ SSID: _____

ADDRESS: US 25

CITY: Hendersonville STATE: NC ZIP CODE: 28739

SITE REFERENCE POINT: center of property

USGS QUAD MAP NAME: Skyland TOWNSHIP: ____ N/S RANGE: ____ E/W

SCALE: 1:24,000 MAP DATE: 1978 SECTION: ____ 1/4 ____ 1/4 ____ 1/4

MAP DATUM: (1927) 1983 (CIRCLE ONE) MERIDIAN: _____

COORDINATES FROM LOWER RIGHT (SOUTHEAST) CORNER OF 7.5' MAP (attach photocopy):

LONGITUDE: 35 ° 22 ' 30 " LATITUDE: 82 ° 30 ' ____ "

COORDINATES FROM LOWER RIGHT (SOUTHEAST) CORNER OF 2.5' GRID CELL:

LONGITUDE: 35 ° 22 ' 30 " LATITUDE: 82 ° 30 ' ____ "

CALCULATIONS: LATITUDE (7.5' QUADRANGLE MAP)

A) NUMBER OF RULER GRADUATIONS FROM LATITUDE GRID LINE TO SITE REF POINT: 127

B) MULTIPLY (A) BY 0.3304 TO CONVERT TO SECONDS:

A x 0.3304 = 41 . 96 "

C) EXPRESS IN MINUTES AND SECONDS (1'= 60"): 0 ' 41 . 9 "

D) ADD TO STARTING LATITUDE: 35 ° 22 ' 30 . 0 " + 0 ' 41 . 9 =

SITE LATITUDE: 35 ° 23 ' 11 . 9 "

CALCULATIONS: LONGITUDE (7.5' QUADRANGLE MAP)

A) NUMBER OF RULER GRADUATIONS FROM RIGHT LONGITUDE LINE TO SITE REF POINT: 38

B) MULTIPLY (A) BY 0.3304 TO CONVERT TO SECONDS:

A x 0.3304 = 12 . 55 "

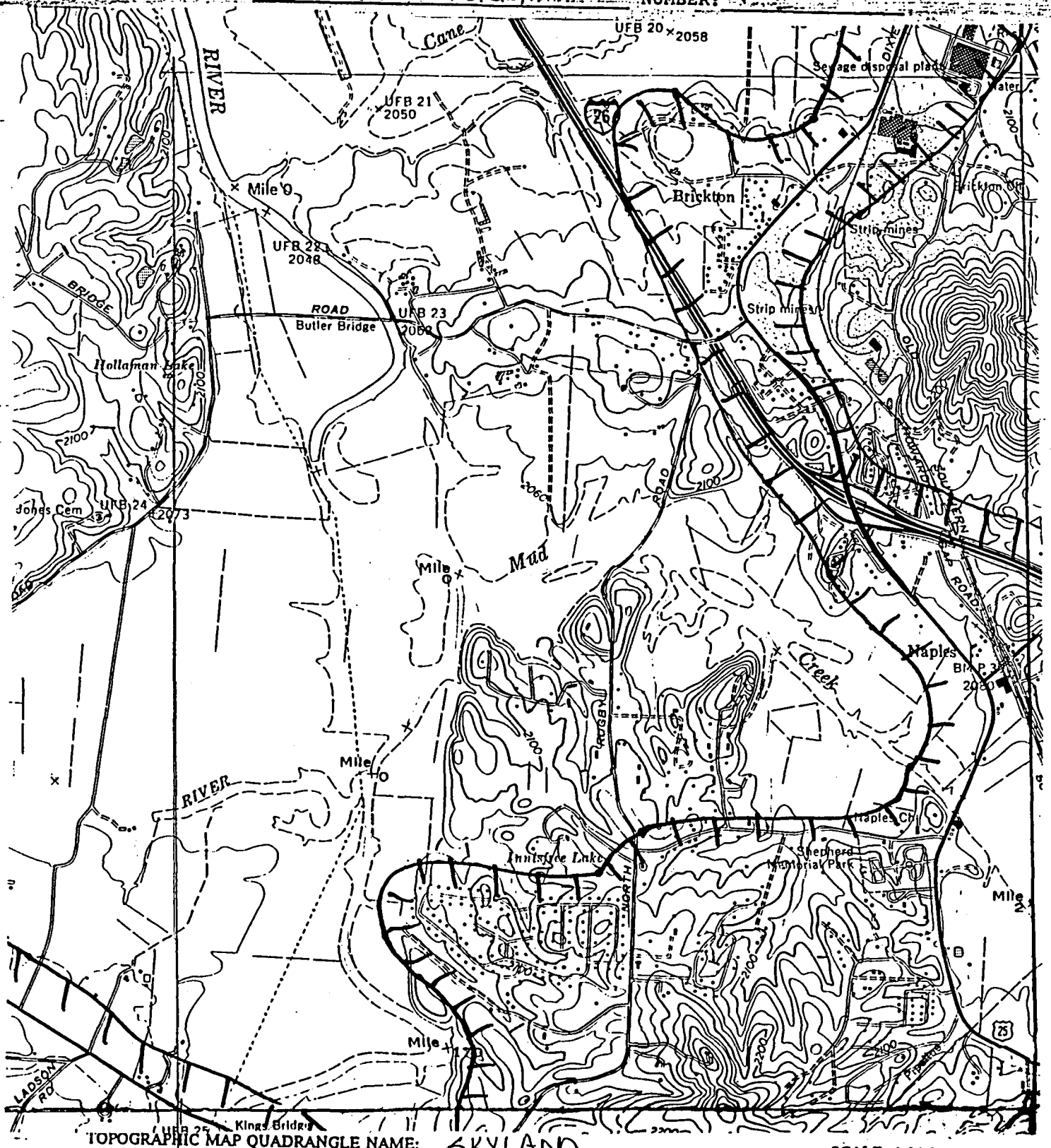
C) EXPRESS IN MINUTES AND SECONDS (1'= 60"): 0 ' 12 . 6 "

D) ADD TO STARTING LONGITUDE: 82 ° 30 ' 0 . 0 " + 0 ' 12 . 6 =

SITE LONGITUDE: 82 ° 30 ' 12 . 6 "

INVESTIGATOR: Wally L Spires DATE: 8/17/92

SITE NAME: SPANN PROPERTY NUMBER: NCD 986160917



TOPOGRAPHIC MAP QUADRANGLE NAME: SKYLAND SCALE: 1:24,000

COORDINATES OF LOWER RIGHT-HAND CORNER OF 2.5-MINUTE GRID:

LATITUDE: 35°23'11.9" LONGITUDE: 82°30'12.6"