390SERBSF10,625

390SERBSF10,625

Site Name (Subject):	STARLING DAVID PROPERTY
Site ID (Document ID):	NCD003185311
Document Name (DocType):	Correspondence (C)
Report Segment:	
Description:	General Correspondence, 1971 - 1995
Date of Document:	8/22/1995
Date Received:	
Box: *Enter SF and # with no spaces*	SF10,625
Access Level:	PUBLIC
Division:	WASTE MANAGEMENT
Section:	SUPERFUND
Program (Document Group):	SERB (SERB)
Document Category:	FACILITY

Print Report for Record | **Go to New Blank Record** | **Go to New Record - (default to last record values)** | **Delete Record**

EPA DID NOT MAIL
TO FACILITY

DATE: August 22, 1995

SUBJECT: REMOVAL FROM EPA'S CERCLIS INVENTORY

FROM: Matthew J. Robbins, Brownfields Coordinator
Waste Management Division, Region IV

TO: STARLING DAVID PROPERTY
HWY 258N
FARMVILLE
NC 27828

EPA has identified the Brownfields Initiative as one of the Agency's top priorities. The term "brownfields" refers to previously used properties that may lie vacant because potential contamination makes them unmarketable to the private sector. EPA has recently announced a comprehensive Brownfields strategy, including Pilot grants to municipalities, to stimulate economic revitalization.

One part of the strategy has been for EPA to review its complete inventory of Superfund sites. These sites have been screened and determined to require no remedial action under the Federal Superfund Program based on information available as well as on conditions and policies that currently exist. This is to notify you that EPA has removed your facility from EPA's computer inventory known as CERCLIS. THIS DOES NOT INDICATE THAT THE STATE HAS MADE A SIMILAR DETERMINATION.

If you have any questions, please call me at 404/347-5059 ext. 6214.

cc: State Agency

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

JAN 12 1995

4WD-WPB

Ms. Pat DeRosa, Head
CERCLA Branch
North Carolina Department of Environment,
Health and Natural Resources
Division of Solid Waste Management
401 Oberlin Road
Raleigh, North Carolina 27605-1350

Dear Ms. DeRosa:

The following reports have recently been reviewed and accepted by EPA - Region IV Site Assessment Section:

Preliminary Assessments

Cardinal Chemical Warehouse Robeson County NCD 986 209 575	No Further Remedial Action Planned (NFRAP).
New Bern Coal Gas Plant Craven County NCD 986 197 259	Further Action (FA).

Site Inspection Prioritizations (SIPs)

CF Industries Hertford County NCD 065 288 847	FA
Chemical Leaman Tank Lines New Hanover County NCD 062 677 273	NFRAP
Duke University Gate # 11 Durham County NCD 000 813 519	NFRAP
Stanadyne Inc. Beaufort County NCD 091 567 065	NFRAP

Starling David Property NFRAP
Pitt County
NCD 003 185 311

Ulah Battery Lead Reclaiming NFRAP
Randolph County
NCD 981 864 614

Enclosed please find the Remedial Site Assessment Decision Forms for each report generated by the North Carolina Superfund program and a copy of the actual report generated by the EPA Contractor.

In addition, I have enclosed a copy of the Emergency Response Kaplan Ethyl Ether Drum file.

If you have any questions concerning these site decisions, please call me at (404) 347-5059, Extension 6150.

Sincerely,

Cynthia Gurley

Cynthia K. Gurley
NC Project Officer

Enclosures

To: NC.

REMEDIAL SITE ASSESSMENT DECISION - EPA REGION IV

Site Name: Starling David Property EPA ID#: NC0003185311

Alias Site Names: _____

City: Farmville, NC County or Parish: Pitt State: NC

Refer to Report Dated: 8/31/94 Report type: Draft Site Inspection Prioritization

Report developed by: Black & Veatch Waste Science, Inc.

DECISION:

|✓| 1. **Further Remedial Site Assessment under CERCLA (Superfund) is not required because:**

|✓| 1a. Site does not qualify for further remedial site assessment under CERCLA (No Further Remedial Action Planned - NFRAP)

| | 1b. Site may qualify for further action, but is deferred to: | | RCRA | | NRC

| | 2. **Further Assessment Needed Under CERCLA:** 2a. (optional) Priority: | | Higher | | Lower

2b. Activity Type: | | PA | | SI | | ESI | | HRS evaluation

| | Other: _____

DISCUSSION/RATIONALE:

Although the preliminary HRS score is of low priority, it is recommended that further action be taken to mitigate the release of hazardous material from this site. It is recommended that the PRPs, with state oversight, implement a plan of action as outlined in its correspondence of Nov. 16, 1984 to Mark Ourway (NC DHR). Additional concerns are noted below:*

Report Reviewed and Approved by: Kay L. Crane Signature: Kay L. Crane Date: 9/29/94

Site Decision Made by: Tom McKeon Signature: [signature] Date: 9/30/1994

EPA Form # 9100-3

* Site Inspection/Ranking based on '83/84 data collected by PRPs' contractor. 1986 GW sample results indicate contamination in shallow aquifer and hydrogeological report indicates confining unit is 'leaky.' Could a documented release migrate from the shallow to deeper aquifer? Have the PRPs continued to monitor the release as stated in their 1984 letter to M. Ourway?

Site Name: Starling David Property
Site Number: NCD 003 185 311

Site Location: Farmville, N.C.
Pitt County
Latitude: 35 38 22.0
Longitude: 77 37 38.5

Date: July 06, 1992

Calculation Results

Distance from Site Location	Population Per Ring	Population Cumulative	Number of Households Per Ring	Number of Households Cumulative
0 to 1/4 mile	12	12	3	3
>1/4 to 1/2 mile	49	61	16	19
>1/2 to 1 mile	137	198	53	72
>1 to 2 miles	476	674	176	248
>2 to 3 miles	1,010	1,684	416	664
>3 to 4 miles	3,561	5,245	1,435	2,099

Note: The populations and number of households within specified target distance rings were calculated for the NC Superfund Section by the NC State Center for Geographic Information and Analysis using the 1990 US Census data. These values were calculated by summing the population and the number of households data for each census block located within each target ring. For census blocks lying only partially within the ring, the per cent area of the block within the ring was multiplied by the population and household densities of the block.

26 Jan. 1990

To: File

From: Jack Butler

Subject: David Starling Property, NCD003185311.

Mr. Ira Oakley (919/753-4353) was contacted by our office on this date concerning the subject site. Mr. Oakley owns property adjacent to this site and is concerned about the material buried on the site. Mr. Oakley reported that he had seen an oily substance in the ditch next to the burial area and had also found a dead raccoon near the ditch and burial area.

Mr. Oakley was referred to our office by Mr. Bill Morris (919/355-9000) after Mr. Oakley contacted Representative Walter Jones who in turn contacted Mr. Morris.

DSP1

Fountain

6" (Proposed)

SR 1241

SR 1244

SR 1221

SR 1225

SR 1200

Greenville

Wilson

SR 1278

SR 1218

SR 1143

SR 1142

Middle Swamp

Snow Hill

Little Contentnea

Contentnea Creek

Swamp

FARMVILLE

Meriboro

Greenville

WELLS

PROPOSED WELLS - TANK

ELEVATED TANKS

TOWN OF FARMVILLE
WATER SYSTEM
(SKETCH)

7/11/88

Date: February 5, 1982 16

County: Pitt

Notifier's name and address: F. M. Charles

270 Park Ave., New York, NY 10017

Contact's name: H. M. Parker (212) 551-4515

Site name and address: David Starling Property

Hwy 258N Farmbille, NC 27828

Site location:

Type of waste: sludges containing lead, mercury and chrome

What process generated the waste? Battery production

Volume of waste: 1100 gallons

Method of storage or disposal: burial on site

Dates of waste activity: 1972

Site history: F. M. Charles notified that Union Carbide transported sludge material to private property where it was subsequently buried. No further information was made available by the contact person.

another form indicates 10,000 gal. of waste was dumped. where is it?

*The preceding information is based on preliminary data supplied by the Environmental Protection Agency, and not on detailed site investigations.

another form indicates 10,000 gal of waste was dumped where is it?

ENVIRONMENTAL PROTECTION AGENCY
NOTIS DATA MANAGEMENT SYSTEM

NOTIS REPORT #4 — LISTING BY FACILITY — REGION: 04 STATE: NC — REPORT DATE: 10/20/81

NOTIFICATION ID NO.	SITE NAME / SITE STREET / SITE CITY / SITE COUNTY / EPA SITE ID NO.	NOTIFIER NAME / NOTIFIER STREET / NOTIFIER CITY / STATE / ZIP / (CONTACT NAME/TITLE) / (CONTACT PHONE)	NOTIFIER STATUS (PRES OWN, PAST OWN PRES OP, PAST OP TRANSPORTER, VOLUNTEER)
NCS000001180	STARLING, DAVID, PROPERTY HWY 258N FARMVILLE 27828 PITT NCD003185311	F.M. CHARLES 270 PARK AVE NEW YORK NY 10017 (PARKER, H.M., TECH MGR/ENV AFF) (212-551-4515)	

RELEASES TO THE ENVIRONMENT:

DATES OF WASTE HANDLING: 1972 TO 1972

WASTE AMOUNT: 1,100 GALLONS AREA: 0 MAP PRESENT: NO FORM TYPE: 8900-1

NOTIF. POSTMARKED DATE: 81/06/09 SIGNATURE PRESENT: YES DATE OF LAST UPDATE: 81/10/14

TYPE OF FACILITY	TYPES OF WASTES	SOURCES OF WASTE
LANDFILL	HEAVY METALS	CHEMICALS, GENERAL

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NC	D003185311

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
David Starling Property	Route 2, Box 246 (Hwy. 258N)

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Farmville	NC	27828	Pitt	074	01

09 COORDINATES LATITUDE	LONGITUDE
35° 38' 29" N	077° 37' 45" W

10 DIRECTIONS TO SITE (Starting from nearest public road)
From Farmville, take Hwy. 258N for approximately 2 to 3 miles. At the entrance to Woodland Hills Mobile Homes Estates (on right), continue an additional 0.25 miles. At Starling's address (Box 246) go left 0.1 mile; go right 100', go left (west) 100 yds to site (Map attached).

III. RESPONSIBLE PARTIES

01 OWNER (If known)	02 STREET (Business, mailing, residential)
David Starling	Route 2, Box 246 (Hwy. 258 N)

03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
Farmville	NC	27828	(919) 753-4124

07 OPERATOR (If known and different from owner)	08 STREET (Business, mailing, residential)
Union Carbide Corporation	P.O. Box 1547 Evans Street Extension

09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER
Greenville	NC	27834	(919) 756-2171

13 TYPE OF OWNERSHIP (Check one)
☒ A. PRIVATE ☐ B. FEDERAL: _____ (Agency name) ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL
☐ F. OTHER: _____ (Specify) ☐ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)
☐ A. RCRA 3001 DATE RECEIVED: ___/___/___ (MONTH DAY YEAR) ☒ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: 6/9/81 (MONTH DAY YEAR) ☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION
☐ YES DATE ___/___/___ (MONTH DAY YEAR)
☒ NO

BY (Check all that apply)
☐ A. EPA ☐ B. EPA CONTRACTOR ☐ C. STATE ☐ D. OTHER CONTRACTOR
☐ E. LOCAL HEALTH OFFICIAL ☐ F. OTHER: _____ (Specify)
CONTRACTOR NAME(S): _____

02 SITE STATUS (Check one)	03 YEARS OF OPERATION	
☐ A. ACTIVE ☒ B. INACTIVE ☐ C. UNKNOWN	1-6-71 (BEGINNING YEAR)	3-31-71 (ENDING YEAR) ☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED
Barium carbonate, barium chromate & chromic acid were disposed of at the site. Wastes from sources other than Union Carbide Corporation are unknown of. Alleged possibility of various heavy metals.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION
Law Engineering Testing Co. (Marietta, Georgia) completed a hydrogeological assessment of the David Starling disposal site in 1983, and concluded that waste "does not represent an environmental hazard for surface or ground-water resources outside the immediate disposal area."

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)
☐ A. HIGH (Inspection required promptly) ☒ B. MEDIUM (Inspection required) ☐ C. LOW (Inspect on time available basis) ☐ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NUMBER
Albert M. Nash	Union Carbide Corporation P.O. Box 16000, Rocky River, OH 44116	(216) 333-0500

04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
O.W. Strickland	DHR	S&HW	(919) 733-2178	11/21/84 (MONTH DAY YEAR)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NC	D003185311

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- ☐ A. SOLID
- ☐ B. POWDER, FINES
- ☒ C. SLUDGE
- ☐ D. OTHER (Specify)
- ☐ E. SLURRY
- ☒ F. LIQUID
- ☐ G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS: _____

CUBIC YARDS: 10,000 gals.

NO. OF DRUMS: 542 and containers

03 WASTE CHARACTERISTICS (Check all that apply)

- ☒ A. TOXIC
- ☒ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☒ D. PERSISTENT
- ☒ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☐ G. FLAMMABLE
- ☒ H. IGNITABLE
- ☐ I. HIGHLY VOLATILE
- ☒ J. EXPLOSIVE
- ☐ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE	10,000	gal.	
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS	Unknown		
BAS	BASES			
MES	HEAVY METALS	Unknown		

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
D005	Barium Chromate	-	Burial in drums	40-50%	% volume
D005	Barium Carbonate	-	and containers	50-60%	"
D002	Chromic Acid	11115745	"	Unknown	-
D009	Mercury	7439976	"	"	-
D008	Lead	7439921	"	"	-

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS	N/A		FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

1. Cercla Notficiation, 6-9-81, from F.M. Charles.
2. Albert M. Nash, Environmental Coordinator, Union Carbide Corp., Rocky River, OH
3. Lab Analysis Results from: Union Carbide Corporation; Environment I, Inc. (Greenville, NC); N.C. Div. of Health Services State Lab of Public Health.

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NC	D003185311

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☐ A. GROUNDWATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: None — 04 NARRATIVE DESCRIPTION

None detected in nearby drinking wells. Possible g-w contamination directly beneath site.

01 ☐ B. SURFACE WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

Lead: Exceeded EPA drinking water standards at surface puddle near site.
Barium: Exceeded EPA drinking water standards at surface puddle and drainage ditch near site.

01 ☐ C. CONTAMINATION OF AIR — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: None — 04 NARRATIVE DESCRIPTION

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: Unknown — 04 NARRATIVE DESCRIPTION

Chromic acid may explode on contact with reducing agents, and may ignite upon contact with organic materials.

01 ☐ E. DIRECT CONTACT — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: Unknown — 04 NARRATIVE DESCRIPTION

Material is buried in drums or containers; accidental unearthing of these could occur in future.

01 ☐ F. CONTAMINATION OF SOIL — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: Unknown (Acres) — 04 NARRATIVE DESCRIPTION

01 ☐ G. DRINKING WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: None — 04 NARRATIVE DESCRIPTION

None detected in nearby drinking wells to date.

01 ☐ H. WORKER EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: Unknown — 04 NARRATIVE DESCRIPTION

No known danger at present.

01 ☐ I. POPULATION EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: Unknown — 04 NARRATIVE DESCRIPTION

No known danger at present

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D003185311

II. HAZARDOUS CONDITIONS AND INCIDENTS *(Continued)*

01 ☐ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Unknown

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION *(Include name(s) of species)*

Unknown

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Unknown

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES *(Spills/runoff/standing liquids/leaking drums)* — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: Unknown — 04 NARRATIVE DESCRIPTION

10,000 gallons of sludge, and possibly liquids, are buried in 542 drums and containers. In time, drums and containers will leak or deteriorate.

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Unknown

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Unknown

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Presumed legal during time period that site was active.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

It is unknown as to whether wastes, other than those generated by Union Carbide Corporation, were ever buried on the site, or at other locations on David Starling's property.

III. TOTAL POPULATION POTENTIALLY AFFECTED: Unknown

IV. COMMENTS

Lab analysis results, which were achieved by a number of different independent labs, are often contradictory; thus their validity and usefulness is questionable.

V. SOURCES OF INFORMATION *(Cite specific references, e. g., state files, sample analysis, reports)*

1. Hydrogeological assessment report for David Starling Disposal Site by Law Engineering Testing Co., prepared for Union Carbide Corp., 1983.
2. The Condensed Chemical Dictionary, 10th edition, 1981.
3. As previously sited.

SITE HEALTH AND SAFETY PLAN

A. General Information

Site Name David Starling Property ID # NCD 003 185 311

Location Route 2, Box 246 (Hwy. 258N), Date August 3, 1989

Farmville, Pitt County, NC

Proposed Date of Investigation August 16, 1989

Date of Briefing August 15, 1989

Date of Debriefing August 17, 1989

Site Investigation Team: All site personnel have read the Site Health and Safety Plan and are familiar with its provisions.

	Personnel	Responsibilities	Signature
Team 1	Mark Durway	team leader, sampling	D. Mark Durway
Team 1	Jack Butler	sampling	Jack Butler
Team 2			
Team 2			

Plan Preparation:

Prepared By: David Lilley, Industrial Hygienist David Lilley

Reviewed By: Jack Butler, Environmental Engineer Jack Butler

B. SITE/WASTE CHARACTERISTICS

Waste Type(s) X Liquid X Solid X Sludge ___ Gas

Characteristics X Corrosive X Ignitable ___ Radioactive

___ Volatile X Toxic ___ Reactive ___ Other

List Known or Suspected Hazards (physical, chemical biological or radioactive) on Site and their toxicological effects. Also, if known, list chemical amounts

HAZARD	WARNING PROPERTIES	TLV
Barium Chromate	Odor Threshold (OT)=no data	no data
Barium Carbonate	OT=no data	0.5mg/m^3
Chromic Acid	OT=no data PEL=	1mg/10m^3
Mercury	OT=no data	0.01mg/m^3
Lead	OT=no data PEL=	0.05mg/m^3

ID # NCD 003 185 311

Surveillance Equipment:

_____ HNU	_____ Detector Tubes and Pumps
_____ OVA	_____ 02 Meter
_____ Explosimeter	_____ Radiation Monitor

Decontamination Procedures

_____Level C Respirator wash, respirator removal, suit wash (if needed,) suit removal, boot wash, boot removal and glove removal.

__X__Level D Boot wash and rinse and boot removal, suit removal, glove and goggle removal.

Modifications Dispose of trash properly, on-site if possible.

Work Schedule/Visit Objectives The purpose of this visit is to determine if this site poses a hazard to the public health or the environment. Sampling will consist of drinking water well sampling, and possibly surface soil sampling.

EMERGENCY PRECAUTIONS

Route of Exposure	First Aid
Eyes	irrigate immediately
Skin	soap and water wash
Inhalation	fresh air and artificial respiration
Ingestion	get medical attention immediately

ID # NCD 003 185 311

Location of Nearest Phone: nearby residences

Hospital (Address and Phone Number)

Pitt County Memorial Hospital, 200 Stantonsburg Road, Greenville, NC 27835 (919) 551-4100-can handle chemically contaminated patients

Emergency Transportation Systems (Phone Numbers)

Fire 911

Ambulance 911

Rescue Squad 911

Emergency Route to Hospital Take a left onto SR 1230, then take a right route 258 East to Farmville. Take route 264 East out of Farmville and stay on 264 approximately 12-15 miles. The hospital is well marked.

PREVAILING WEATHER CONDITIONS AND FORECAST Partially cloudy, chance of showers, high of 86°F.

EQUIPMENT CHECKLIST

___	Air purifying respirator	X	First Aid Kit
___	Cartridges for respirator	X	3 gal. Distilled H20
X	Rainsuit	X	Gloves (PE/PVC/nitrile/cloth)
___	02 Indicator	X	Boots/Boot Covers
X	Eye Wash Unit	X	Coveralls (tyvek/saranex)
___	H Nu	X	Eye Protection
___	pH Meter	X	Hard Hat
___	Explosimeter	X	Decontamination
___	Radioactive Monitor		Materials.
___	Detector Tubes and Pump		

Poison Control Center - State Coordinator
Duke University Medical Center
Telephone: 1-800-672-1697
Box 3024
Durham, NC 27710

ASHEVILLE 704-255-4490	Western NC Poison Control Center Memorial Mission Hosp. 509 Biltmore Ave. 28801	HENDERSONVILLE 704-693-6522 Ext. 555,556	Margaret R. Pardee Memorial Hospital Fleming St., 28739
CHARLOTTE 704-379-5827	Mercy Hospital 2001 Vail Ave, 28207	HICKORY 704-322-6649	Catawba Mem. Hosp. Fairgrove Chur. Rd 28601
DURHAM 1-800-672-1697	Duke Univ. Med. Center Box 3007, 27710	JACKSONVILLE 919-577-2555	Onslow Mem. Hospital Western Blvd. 28540
GREENSBORO 919-379-4105	Moses Cone Hospital 1200 N. Elm St. 27420	WILMINGTON 919-343-7046	New Hanover Mem. Hospital 2131 S. 17th St. 28401

TO BE COMPLETED BY PROJECT MANAGER

PROJECT MANAGER: Mark Durway PROJECT: David Starling Prop.

Materials Used

_____ Air Purifying respirator cartridges
_____ Detector tubes
_____ Eye Wash Units
_____ First Aid Kit
_____ Gloves (polyethylene)
_____ Gloves(PVC)
_____ Gloves (nitrile)
_____ Gloves (cloth)
_____ Boot covers
_____ Coveralls (tyvek)
_____ Coveralls (saranex)
_____ Auger Brushes

Respirator Worn By

_____
_____
_____

Approximate Time in Respirator

_____
_____
_____

Air Monitoring Data (Include Calibration Reading)

HNU: _____

OVA: _____

Explosimter: _____

Radiation Meter: _____

If the maximum personal protective equipment as outlined in the Hazard Evaluation Section was not used, please justify:

_____

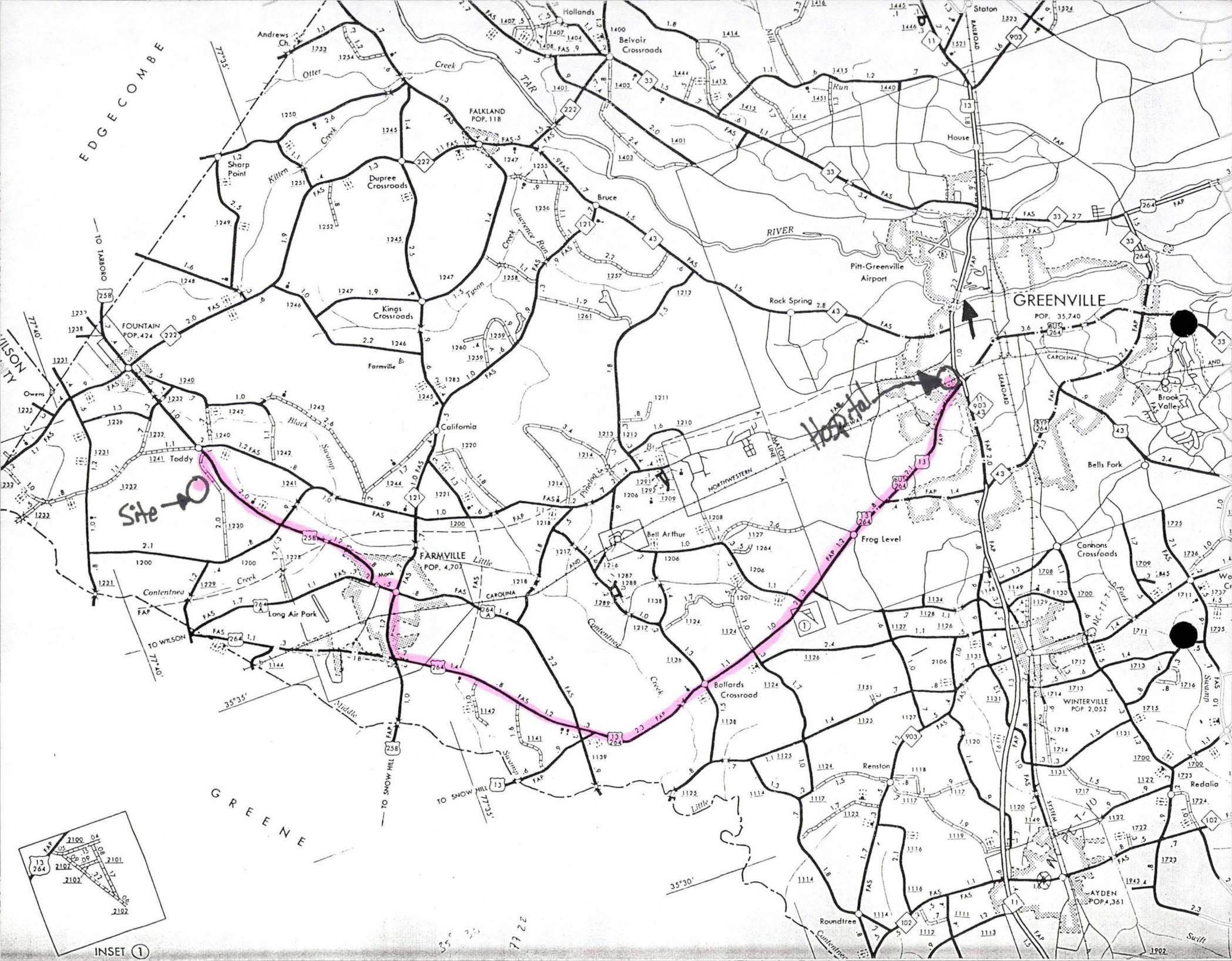
Visitors Present

_____

Orginazation Represented

_____

DL/ds/Revised 11-88


EDGECOMBE
GREENE
Andrews Ch.
Otter Creek
Hollands
Belvoir Crossroads
TAR RIVER
Staton
House
FALKLAND POP. 118
Sharp Point
Kitten Creek
Dupree Crossroads
Bruce
Lawrence Run
Pitt-Greenville Airport
Rock Spring
GREENVILLE POP. 35,740
FOUNTAIN POP. 424
Kings Crossroads
Farmville
Tyson Creek
California
Black Swamp
Toddy
Owens
Site
Hospital
Brook Valley
Bells Fork
Pinetops
NORTHWESTERN
Bell Arthur
Frog Level
Cannons Crossroads
FARMVILLE POP. 4,702
Little Contentnea Creek
Long Air Park
Middle Creek
Ballards Crossroad
WINTERVILLE POP 2,052
Renston
Redalia
Roundtree
GAYDEN POP 4,361
Swift Creek
TO WILSON
TO TARBORO
TO SNOW HILL
INSET ①

HAZARDOUS SUBSTANCE INFORMATION FORM

Chemical Name: Barium as $BaCrO4$

I. PHYSICAL/CHEMICAL PROPERTIES

	Reference
Chemical Formula given above	1
Natural Physical State at 25°C solids	
Vapor Pressure _____ mm Hg at 20°C	
Melting Point _____ °F/°C Boiling Point _____ °F/°C	
Flash Point (open or closed cup) _____ °C/°F	
Solubility - H_2O partially insoluble	1,2
Other _____	

Physical Features: (odor, color, etc.) yellow, heavy crystals

II. TOXICOLOGICAL DATA

Standards: no data TLV no data PEL no data IDLH

Routes of Exposure: inhalation, ingestion

Acute/Chronic Symptoms: respiratory tract irritation, muscle spasms, GI tract infection

First Aid: Eyes: irrigate immediately; Skin: water flush immediately; Inhalation: fresh air and artificial respiration; Ingestion: medical attention promptly.

Chemical Name: BaCr04

III. HAZARDOUS CHARACTERISTICS — Reference

A. Combustibility Yes ___ No X — 1,2,3
Toxic by-products _____ _____
_____ _____

B. Flammability LEL _____ UEL _____ _____

C. Reactivity Hazard _____ _____
_____

D. Corrosivity Hazard yes/no pH: _____ 1,2,3

Neutralizing agent: _____ _____

E. Radioactive Hazard — Exposure Rate

Background	yes/no	_____	_____
Alpha particles	yes/no	_____	_____
Beta particles	yes/no	_____	_____
Gamma radiation	yes/no	_____	_____

IV. REFERENCES

1. The Merck Index, 1985
2. Documentation of the TLV's, Fourth Edition, 1980
3. Pocket Guide to Chemical Hazards, NIOSH, 1985

HAZARDOUS SUBSTANCE INFORMATION FORM

Chemical Name: Barium Carbonate

I. PHYSICAL/CHEMICAL PROPERTIES

	Reference
Chemical Formula $BaCO_3$	1
Natural Physical State at 25°C solid	1
Vapor Pressure _____ mm Hg at 20°C	
Melting Point 811 °F/°C Boiling Point _____ °F/°C	1
Flash Point (open or closed cup) NA °C/°F	
Solubility - H_2O 0.024g/liter	2
Other hydrochloric, nitric, and acetic acid, ammonium nitrate, ammonium chloride	2

Physical Features: (odor, color, etc.) white, heavy powder (2)

II. TOXICOLOGICAL DATA as barium

Standards: 0.5mg/m^3 (3) TLV 0.5mg/m^3 (4) PEL 250mg/m^3 (5) IDLH

Routes of Exposure: Ingestion, Inhalation, Skin/Eye contact

Acute/Chronic Symptoms: Upper respiratory irritant, gastrointestional distress, muscle spasms, heart problems, irritation of the eyes, skin burns

First Aid: Ingestion: get medical attention; Inhalation: fresh air, artifical respiration; Skin contact: soap and water wash; Eye contact: flush with water

Chemical Name: Barium Carbonate

III. HAZARDOUS CHARACTERISTICS — Reference

A. Combustibility Yes ___ No X — _____
Toxic by-products _____ — _____
_____ — _____

B. Flammability LEL _____ UEL _____ — _____

C. Reactivity Hazard _____ — _____

D. Corrosivity Hazard yes/no pH: _____ — _____

Neutralizing agent: _____ — _____

E. Radioactive Hazard — Exposure Rate

Background	yes/no	_____	_____
Alpha particles	yes/no	_____	_____
Beta particles	yes/no	_____	_____
Gamma radiation	yes/no	_____	_____

IV. REFERENCES

1. The Condensed Chemical Dictionary, 11th Edition, 1987
2. The Merck Index, 10th Edition, 1983.
3. Threshold Limit Values and Biological Exposure Indices for 1988-1989
4. Air Contaminants-Permissible Exposure Limits, 29 CFR 1910.1000, 1989
5. NIOSH Pocket Guide to Chemical Hazards, 1987

HAZARDOUS SUBSTANCE INFORMATION FORM

Chemical Name: Chromic Acid

I. PHYSICAL/CHEMICAL PROPERTIES

	Reference
Chemical Formula Cr 03	1
Natural Physical State at 25°C solid	1
Vapor Pressure _____ mm Hg at 20°C	
Melting Point _____ °F/°C Boiling Point _____ °F/°C	
Flash Point (open or closed cup) _____ °C/°F	
Solubility - H_2O soluble	1
Other _____	

Physical Features: (odor, color, etc.) dark red, bypyramidal crystals (1).

II. TOXICOLOGICAL DATA

Standards: none TLV 1mg/10m^3 (2) PEL 30mg/m3 (3) IDLH

Routes of Exposure: Ingestion, Inhalation, Skin/Eye contact

Acute/Chronic Symptoms: Skin contact: irritation & ulceration of skin. Inhalation: irritation & perforation of nasal system & pulmonary irritation.

First Aid: Eye: irrigate immediately, Skin: water flush immediately, Inhalation: artificial respiration, Ingestion: immediate medical attention.

Chemical Name: Chromic Acid

III. HAZARDOUS CHARACTERISTICS — Reference

A. Combustibility Yes x No ____ — 1

Toxic by-products contact with combustible material may cause fire.

B. Flammability LEL _____ UEL _____

C. Reactivity Hazard oxidizes most other organic substances. Sometimes violently.

D. Corrosivity Hazard yes/no pH: _____

Neutralizing agent: _____

E. Radioactive Hazard — Exposure Rate

Background	yes/no	_____	_____
Alpha particles	yes/no	_____	_____
Beta particles	yes/no	_____	_____
Gamma radiation	yes/no	_____	_____

IV. REFERENCES

1. The Merck Index, 10th Edition, 1983.
2. Air Contaminants-Permissible Exposure Limits, 29 CFR 1910.1000, 1989
3. NIOSH Pocket Guide to Chemical Hazards, 1987

HAZARDOUS SUBSTANCE INFORMATION FORM

Chemical Name: Mercury-inorganic

I. PHYSICAL/CHEMICAL PROPERTIES

	Reference
Chemical Formula Hg	1
Natural Physical State at 25°C liquid	2
Vapor Pressure 0.0012 mm Hg at 20°C	2
Melting Point -38 °F/°C Boiling Point 674 °F/°C	2
Flash Point (open or closed cup) None °C/°F	2
Solubility - H_2O 0.002%	2
Other	

Physical Features: (odor, color, etc.) Silvery, mobile odorless liquid (2)

II. TOXICOLOGICAL DATA

Standards: 0.01 mg/m^3(3) TLV 1 mg/10m^3(4) PEL 28 mg/m^3(2) IDLH

Routes of Exposure: Inhalation, skin and/or eye absorption, Ingestion (2)

Acute/Chronic Symptoms: Acute: soluble salts have violent corrosive effect on skin and mucous membranes, severe nausea, vomiting, abdominal pains, blood, diarrhea, kidney damage, death usually with 10 days; Chronic: inflammation of mouth and gums, excessive salivation, loosening of teeth, kidney damage, muscle tension, jerky gait, spasms of extremities, personality changes, depression, irritability, nervousness(1).

First Aid: Eyes: irrigate immediately; Skin: wash with soap and water immediately; Inhalation: artificial respiration; Ingestion: get medical attention immediately (2).

Chemical Name: Mercury-inorganic

III. HAZARDOUS CHARACTERISTICS — Reference

A. Combustibility Yes ___ No X — 2

Toxic by-products _____

_____

B. Flammability LEL none UEL none — 2

C. Reactivity Hazard Incompatible with acetylenes, ammonia gases — 2

(insoluable salts)

D. Corrosivity Hazard yes/no pH: _____ — 1

Neutralizing agent: _____

E. Radioactive Hazard — Exposure Rate

Background	yes/no	_____	_____
Alpha particles	yes/no	_____	_____
Beta particles	yes/no	_____	_____
Gamma radiation	yes/no	_____	_____

IV. REFERENCES

(1) The Merck Index, 10th Edition, 1983

(2) Pocket Guide to Chemical Hazards, NIOSH, 1985

(3) Threshold Limit Values and Biological Exposure Indices for 1988-89, ACGIH.

(4) Air Contaminants-Permissible Exposure Limits, 29 CFR 1910.1000, 1989.

HAZARDOUS SUBSTANCE INFORMATION FORM

Chemical Name: Lead, inorganic dusts

I. PHYSICAL/CHEMICAL PROPERTIES

	Reference
Chemical Formula Pb	1
Natural Physical State at 25°C solid	1
Vapor Pressure N/A mm Hg at 20°C	1
Melting Point 600 °F/°C Boiling Point 900 °F/°C	1
Flash Point (open or closed cup) N/A °C/°F	
Solubility - H_2O N/A	
Other N/A	

Physical Features: (odor, color, etc.) appearance and odor vary depending upon specific compound.

II. TOXICOLOGICAL DATA

Standards: .15 mg/m^3 (2) TLV 0.05 mg/m^3 (3) PEL N/A IDLH 3

Routes of Exposure: inhalation, ingestion, eye contact, skin contact(3)

Acute/Chronic Symptoms: Acute: lassitude, pallor, constipation, abdominal pain, gingival gum line, tremors. Target organs: GI tract, CNS, kidneys, blood.(3)

First Aid: Eyes: irrigate immediately; Skin: soap and water wash promptly; Inhalation: fresh air and artificial respiration; Ingestion: medical attention immediately.

Chemical Name: Lead, inorganic dusts

III. HAZARDOUS CHARACTERISTICS — Reference

A. Combustibility Yes ___ No X — _____
Toxic by-products _____ — _____
_____ — _____

B. Flammability LEL N/A UEL _____ — _____

C. Reactivity Hazard None — _____

D. Corrosivity Hazard yes/no pH: _____ — _____

Neutralizing agent: _____ — _____

E. Radioactive Hazard — Exposure Rate

Background	yes/no	_____	_____
Alpha particles	yes/no	_____	_____
Beta particles	yes/no	_____	_____
Gamma radiation	yes/no	_____	_____

IV. REFERENCES

(1) The Merck Index, 10th Edition, 1985
(2) Threshold Limit Values and Biological Exposure Indices for 1988-1989, ACGIH.
(3) Pocket Guide to Chemical Hazards, NIOSH, 1987.

North Carolina Department of Human Resources
Division of Health Services
P.O. Box 2091 • Raleigh, North Carolina 27602-2091

24 July 1989

James G. Martin, Governor
David T. Flaherty, Secretary

Ronald H. Levine, M.D., M.P.H.
State Health Director

Mr. J. Thomas Houser
Eveready Battery Company, Inc.
25225 Detroit Road
Post Office Box 45035
Westlake, Ohio 44145

SUBJECT: On-Site Solidification/Stabilization,
Starling Farm Site, NCD003185311

Dear Mr. Houser:

Our staff has reviewed the "Proposal for On-Site Solidification/Stabilization of Barium Carbonate-Barium Chromate Contaminated Materials, Starling Farm Site, Farmville, NC" prepared by Hazcon Engineering, Inc. As we discussed in our meeting on 20 July 1989, this proposal is unacceptable to the NC Superfund Branch in its present form. Specifically, the requirements set forth in the North Carolina Solid Waste Management Rules, 10 NCAC 10G, are applicable for any on-site disposal. As discussed in our meeting, these requirements include but are not limited to: (1) the bottom elevation of waste disposal must be at least 4 feet above the seasonal high water table, (2) groundwater monitoring must be provided, and (3) a liner and leachate collection system must be provided. In addition, the Resource Conservation and Recovery Act (RCRA) regulations apply to any excavation and treatment of the hazardous wastes at the subject site.

If you have any questions, please contact Jack Butler or me at (919) 733-2801.

Sincerely,

Lee Crosby

Lee Crosby, Head
NC Superfund Branch

LC/JB/ds/starling.doc/p.2

cc: R.W. Gibbs, Eveready
Jerry Parks, NC DHR/DHS
Richard Powers, NRCD
Debra Sawyer, NRCD
Jerry Rhodes, Hazardous Waste
Gordon Layton, Solid Waste

North Carolina Department of Human Resources
Division of Health Services
P.O. Box 2091 • Raleigh, North Carolina 27602-2091

James G. Martin, Governor
David T. Flaherty, Secretary

Ronald H. Levine, M.D., M.P.H.
State Health Director

31 July 1989

Mr. Paul Andrews
Environmental Health Supervisor
Pitt County Health Department
1825 West 6th Street
Greenville, NC 27834 Courier 148

RE: Screening Site Investigation
David Starling Property, Farmville, NC
NCD 003 185 311

Dear Mr. Andrews:

Pat DeRosa of the NC Superfund Branch spoke with you today to notify you that the NC Superfund Branch will conduct a screening site investigation of the David Starling Property located in Farmville, NC. The investigation will be conducted on 16 August 1989 by Mark Durway and Jack Butler of the Branch.

The purpose of the investigation is to determine if the site poses a hazard to public health or the environment because of releases of contaminants to soil, surface water, groundwater, or air. The investigation team will take samples on and around the site to determine if a hazardous condition exists. Additionally, they will locate all nearby water supplies (surface and groundwater, community and private) and any close sensitive environments, schools and day care centers.

This investigation is not an emergency situation but is a normal step in the evaluation of all uncontrolled and unregulated potential hazardous waste sites in North Carolina. You may want to have your representative meet the investigation team at the site. If so, please contact Mark Durway at (919) 733-2801 and he will coordinate a meeting. I am enclosing background data on the site for your information.

If the investigation indicates the need for future study of the site, we will contact your office to advise. If you have any questions, please don't hesitate to call Grover Nicholson or me at (919) 733-2801.

Sincerely,

Lee Crosby

Lee Crosby, Head
Superfund Branch
Solid Waste Management Section

LC/db/5.doc

Enclosures

cc: Gordon Layton
Doug Holyfield
Steve Reid
Lois Walker
Ann Rudd
Grover Nicholson

FEDERAL

TRIP
NOTIFICATION
& AUTHORIZATION

TODAY'S DATE: 7/27/89
PREPARED BY: DURWAY (Staff member filling out form)

SITE TRIP

DATE OF TRIP: 8/16/89
If trip date changed or cancelled note below:
CHANGE OF DATE TO: _____ OR CANCELLED: _____

SITE NAME: DAVID STARLING PROPERTY
NCD#: 003185311
REASON FOR TRIP: SI

CITY: FARMVILLE COUNTY: PITT

If Overnight trip, Hotel staying at: N/A
Telephone Number: _____

(Please list appropriate county health person to call to advise of trip)
ENVIRONMENTAL SUPERVISOR OR
HEALTH DIRECTOR TO CALL: Mr. Paul Andrews TITLE: Envt'l Health Supervisor
(Note if Dr., M.P., etc.)
Telephone Number: (919) 830-6380

Project Team Leader: DURWAY
Assistants: BUTLER

AUTHORIZED BY: Gene Nicholson by Pat DeMott
CERCLA Unit Supervisor

ATTACHMENT
TO NOTIFICATION FORM: 4 copies each of PRELIMINARY ASSESSMENT FORM (1st page only) NOTIFICATION FORM, & EPA TRANSMITTAL LETTER

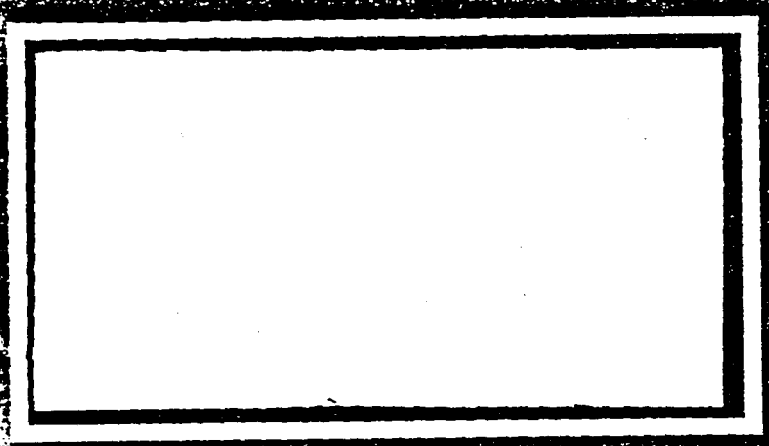
Staff Notification Procedure: (Use black Ink or Typewriter Only)
1. Above form goes to Data Management Coordinator (DMC) 10 days prior to trip
2. If date of trip changes - note changed date, or mark "X" if cancelled
3. DAY AFTER TRIP, submit to Lee Crosby a short paragraph on site trip.

NOTES: Pat DeMott contacted Mr. Paul
HEALTH DEPT. OFFICIAL CONTACTED: Andrews 7/31/89
BACK UP LETTER REQUIRED: Yes X No ___

Please send sample results + SI transmittal letter when SI is complete.

HAZCON, Inc.

HAZARDOUS WASTE SOLIDIFICATION TECHNOLOGY



P.O. Box 947
Katy, Texas U.S.A. 77492
In Houston: (713) 391-1085 Outside Houston: (713) 934-4500

CONFIDENTIAL

PROPOSAL FOR:

ON-SITE SOLIDIFICATION/STABILIZATION OF BARIUM CARBONATE-BARIUM CHROMATE CONTAMINATED MATERIALS, STARLING FARM SITE FARMVILLE, NORTH CAROLINA

JUNE, 1989

(Revision 1)

PREPARED FOR:

EVEREADY BATTERY COMPANY, INC.
GREENVILLE, NORTH CAROLINA

PREPARED BY:

HAZCON ENGINEERING, INC.
32522 McALLISTER ROAD
BROOKSHIRE, TEXAS 77423

(713) 934-4500

CONFIDENTIAL

TABLE OF CONTENTS

APPENDICES

1.0 BACKGROUND

EVEREADY Battery Company, Inc. owns and operates a manufacturing facility in Greenville, North Carolina. In the early 1970's waste material from the plant was disposed of at the Starling Farm site in nearby Farmville. An arc shaped trench approximately 120 feet long, 40 feet wide and 12 feet deep was dug by the site owner, who then placed these contaminated materials within the trench and backfilled. Several years later the location was capped with clay in order to retard the migration of contaminants into the ground water.

2.0 WASTE DESCRIPTION

The predominant waste types disposed of at the site have been identified as Barium Carbonate and Barium Chromate. The material has a sludge like consistency and is greenish yellow in color. An estimated 10 to 20 thousand gallons of the material is suspected contained within the impoundment. Most of the waste is believed to remain contained within containers of various sizes of 5 to 55 gallons. However, it is suspected that several of the containers have ruptured, thus contaminating the surrounding soils.

3.0 TREATABILITY TESTING

In an effort to identify effective treatment alternatives, EVEREADY hired HAZCON, Inc. of Texas to perform treatability studies utilizing various solidification/stabilization (S/S) methods and processes they have developed. The goals of the study were to determine an optimum S/S blend capable of reducing the contaminant mobility, yield an unconfined compressive strength sufficient to bear loading, and reduce permeability. Weathering tests were also performed to help predict the long term stability of the material if "monofilled".

Several formulations of solidification/stabilization additives were prepared by HAZCON. The treated materials were then allowed to cure for a minimum of 10 days before being forwarded to analytical and geotechnical laboratories for testing. Results of these tests are included in Appendix A of this proposal. Results predict the viability of the S/S process in rendering site wastes non-hazardous. Based on these results HAZCON is willing to proceed into full scale application offering the following treatment criteria to EVEREADY:

Unconfined Compressive Strength - >200 psi

Permeability - <2x10-7 cm/sec

Leachability, TCLP or EP Toxicity

Barium - <100 mg/l

Chromium - < 5 mg/l

Testing indicates that results much better than these criteria will be obtained.

4.0 SITE PREPARATION

Prior to implementation of the treatment to site wastes a work area must be prepared. The access road currently leading to the site in both directions will receive a layer of gravel to allow the movement of heavy equipment. Dust will be controlled by wetting the road bed.

Work zones will be taped off indicating areas for support facilities and areas were contaminants will be excavated and handled. Three specific zones will be established, they are the Exclusion Zone, Contamination Reduction Zone (CRZ), and the Support Zone. The Exclusion Zone will be off limits to all personnel not properly trained and/or protected to prevent possible contact with the hazardous contaminants as they are excavated. The Support Zone will be maintained clean from contamination and used for staging of equipment and for placement of temporary facilities needed to support the remediation. Movement between the Exclusion and Support zones will be controlled through the CRZ, this is where contaminated equipment, and personal protective wear will be stored and/or decontaminated.

5.0 MOBILIZATION

A field office trailer will be placed in the Support Zone. Temporary utilities will be connected to include electricity, water, telephone. Porta-toilets will also be provided. Excavation equipment will be brought on-site first, then blending equipment for waste processing will follow. Several tanks will also be placed for storage of diesel, run-off water, and process chemicals.

6.0 DESCRIPTION OF WORK

6.1 Removal of Cap: The clay cap presently covering the impoundment will be razed as cleanly as practical. Any visibly contaminated clay will be segregated from the clean clay on a lined stockpile. Clean clay will be stockpiled and covered for future reuse.

6.2 Excavation of Impoundment: Soils will be excavated beneath the previously capped area. Soils visibly contaminated by the greenish yellow waste will be stockpiled on 30 mil. plastic liners directly adjacent to the blending unit. Clean soils will be stockpiled separately pending leachate analysis. Containers will be removed as they are discovered and placed on a liner in the blending area. Any materials found which can not be readily identified will be temporarily stored in a fenced holding area until EVEREADY can arrange final disposal. Excavation will proceed until all visibly contaminated materials have been removed from the pit and segregated into respective stockpiles. The excavation will be wetted as necessary to prevent fugitive dust. It is anticipated that the size of the final excavation will be approximately 140'x40'x12'. Twenty samples will then be taken on a grid across the bottom of the pit. These samples will be subjected to TCLP extraction for Barium and Chromium, and results will be submitted to EVEREADY for determination.

6.3 Anomaly B: This area, located directly beside the primary impoundment, is suspected to contain some source contamination. The area will be excavated for exploration as the primary excavation proceeds. Any source contamination visibly present will be removed and materials placed along with those from the prime excavation.

6.4 Lining of Impoundment: Once excavation is determined to be complete and go ahead received from EVEREADY, a 4 inch deep layer of limestone will be placed in the pit, on the bottom and slopping sides. A 60 mil. synthetic liner will then be installed and sealed. Final impoundment dimensions will be calculated based on the estimated volume of treated product to be produced. The estimated volume increase of the treated product is 25 to 30 percent.

6.5 Waste Treatment: Contaminated soils will be moved from the stockpile and placed in material hoppers which feed the batch blending unit on a weight basis. All waste feed material will be accurately weighed at the feed hopper using load cells, thus providing the weight of material treated for billing purposes. Containerized wastes will be removed from their containers and also fed into the blender. Ratios of soil to waste will be at the discretion of HAZCON. Once inside the blender the material will be homogenized with prescribed ratios of additives as determined prior as sufficient to produce an end product capable of exceeding the established treatment criteria. Additives to be used are Type 1, Portland cement, class F, flyash, HAZCON's additive Chloranan, and water.

Ingredients will be homogenized within the blender. Homogenized materials will be transferred back to the lined impoundment and placed. Treated materials will cure inside the impoundment thus producing a monofill.

Empty containers will be decontaminated then crushed prior to placement in the monofill. Wash water from container and equipment decon will be collected and incorporated in the solidification/stabilization blend.

7.0 DEWATERING

Ground water and rain water can be expected during the remediation. To preclude contamination of surrounding clean areas and interference with the excavation activity the following measures will be taken:

- Excavation areas will be sloped and covered with plastic after work hours.

- Ground water collected from low lying areas within the excavation will be pumped into holding tanks for use as process water. Any excess water remaining after all process is complete will be analyzed as outlined in Section 8.0, SAMPLING AND MONITORING.

- To minimize ground water seepage a "well point system" will be installed around the excavation to pump off ground water as necessary. Any water extracted will be released into the drainage ditch nearby.

- Stockpiled contaminated materials will be covered with plastic after work hours.

8.0 SAMPLING AND MONITORING

Sampling of treated waste will be accomplished at an interval of every 100 tons of waste processed. The samples will be analyzed by TCLP methods for Barium and Chromium. Treatment goals are <100 mg/l Barium, and <5 mg/l Chromium. Any levels exceeding these goals will be verified. If verified, the affected material will be reprocessed at the expense of HAZCON.

After all processing is complete any excess water, collected from the impoundment, remaining in storage tanks will be sampled and analyzed for total Barium and Chromium. If found present at levels exceeding the treatment goals the water will be retained at the expense of EVEREADY pending final disposal by EVEREADY. If levels are below the treatment goals the water will be pumped to the drainage ditch.

9.0 HEALTH AND SAFETY

A Health and Safety Plan (HASP) will be developed by HAZCON to govern protective measures necessary during the remediation. The plan will require 40-hours of Health & Safety training for all individuals entering the Exclusion and Contaminant Reduction Zones, as well as a minimum of 8-hours of on-site training. The plan will further dictate the zone scheme outlined in Section 4.0, levels of protection to be worn by site personnel involved in various tasks, contingency procedures, medical monitoring requirements, and other safety measures. The plan will be submitted to EVEREADY prior to mobilization. The development and implementation of the site-specific Health and Safety Plan will be consistent with all applicable laws and regulations. The following outline will be used in developing the HASP:

GENERAL INFORMATION
PURPOSE
SITE ORGANIZATION AND RESPONSIBILITY
PERSONNEL AIR MONITORING
SITE CONTROL
DESCRIPTION OF HAZARDS
LEVELS OF PROTECTION
PROCEDURES (decontamination, other)
TRAINING REQUIREMENTS
MEDICAL MONITORING
CONTINGENCY PROCEDURES

10.0 FINAL CLOSURE AND REPORTING

The cured monofill will be leveled to surrounding grade with clean soil then covered with sheets of 10 mil. plastic. Clay from the original cap and additional as needed will be used to form a domed cap having a minimum 6" depth at the excavation perimeter and 9" center. Excess clean soil from the excavation will be spread uniformly over the cap. Approximately 60 cubic yards of clean top soil will then be brought on-site and placed over the cap to a uniform depth on at least 5 inches. The entire prepared area will then be seeded at the direction of EVEREADY.

All equipment, materials, trailers, etc. will then be removed from the site. Final reports will be prepared and submitted to EVEREADY for review with the State. Reports will outline the implementation of this plan and any deviation from it. All documentation pertinent to the project will be included, such as QA/QC records, site logs, blending forms, and laboratory findings.

Appendix A
Treatability Test Findings

Based on the Treatability Study data HAZCON guarantees Eveready of its ability to meet or out perform the following treatment criteria:

Unconfined Compressive Strength	-	>200 psi
Permeability	-	<2x10-7 cm/sec
Leachability, TCLP or EP Toxicity		
Barium	-	<100 mg/l
Chromium	-	< 5 mg/l

Testing indicates that results much better than these criteria will be obtained.

A base blend of 3 parts waste to 1 part 50/50 (Type 1 Port/ class F flyash) and 300 parts waste to 1 part "Chloranan", should be capable of meeting the criteria. Treatability tests using equal or lower ratios of the same additive produced the following results:

UCS	303 psi		
Perm	2x10-7 cm/sec	BA	CR
Leachability,	TCLP	33	.09
	EP TOX	69	.43

TREATABILITY STUDY
DATA SUMMARY

Blend No.	Description	cure time (psi)			Parameters Determined						
		24	48	72hrs	U.C.S. (psi)	Perm. (cm/sec)	TCLP Ba (mg/l)	TCLP Cr (mg/l)	EP Tox Ba (mg/l)	EP Tox Cr (mg/l)	F/T
ER-1	PCW 300/15/300	>700	-	-							
ER-2	PCW 200/10/400	>700	-	-							
ER-3	PCW 200/10/600	>700	-	-							
ER-CKD-1	KCW 500/50/500	150	240	300							
ER-CKD-2	KCW 250/25/500	90	200	260							
ER-CKD-3	KCW 167/17/500	40	180	230							
ER-50/50-1	BCW 500/50/500	>700	-	-							
ER-50/50-2	BCW 250/25/500	>700	-	-							
ER-50/50-3	BCW 167/17/500	>700	-	-							
ER-5	PCW 100/10/500	370	>700	-							
ER-2-1	PCW 300/15/300	>700	-	-			61	.16			
ER-2-2	PCW 60/ 6/300	>700	-	-			64	.09			
ER-2-3	BCW 300/15/300	>700	-	-			50	.08			
ER-2-4	BCW 60/ 6/300	200	440	>700			33	.09			
ER-2-5	F+CW 350/15/300	100	280	480			33	.15			
ER-2-6	F+CW 110/ 6/300	80	240	440			79	ND			
ER-2-A	Same as ER-2-2				718	8x10-8	35	.18			Pass
ER-2-B	Same as ER-2-4				303	2x10-7	28	.09			Pass
ER-2-C	Same as ER-2-6				19	1x10-6	71	.05			Fail
ER-2:1 50/50	Same as ER-50/50-2								94	.20	
ER-3:1 50/50	Same as ER-50/50-3								69	.43	
ER-5:1 50/50	Same as ER-2-4								111	.20	
ER-1:1 FA+	Same as ER-2-5								129	2.80	
ER-3:1 Port.	Same as ER-3								79	.66	

P - type 1, Portland cement
C - HAZCON's additive "Chloranan"
W - Waste
K - Cement Kiln Dust
F+ - Class F, flyash plus
B - 50/50, Portland/Flyash Blend

8880 Interchange Drive, Houston, Texas 77054 713/660-0901

Hazcon, Inc.
P.O. Box 947
Katy, TX 77492
Attn: B. Smith/R. Funderburk

E903322-01A
Invoice #: 258028
Report Date: 04/14/89

Eveready Battery
ER-2-1

Date Received: 03/20/89
Date Collected: 03/09/89

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Barium, TCLP Leachate METHOD_208_1	61 mg/l	2	04/12/89	DRL
Chromium, TCLP Leachate METHOD_218_1	0.16 mg/l	0.03	04/10/89	JC
TCLP Leachate extraction	Complete		03/24/89	NDW

Quality Assurance: These analyses are performed in accordance with EPA guidelines for quality assurance. These procedures include the following as a minimum requirement: comparisons against known standards in each run, one in ten sample splits, and a quarterly method review against known spike samples.

SOUTHERN PETROLEUM LABORATORIES, INC.

Daniel D. Pastalaniec

Daniel D. Pastalaniec

8880 Interchange Drive, Houston, Texas 77054 713/660-0901

Hazcon, Inc.
P.O. Box 947
Katy, TX 77492
Attn: B. Smith/R. Funderburk

E903322-02A
Invoice #: 258028
Report Date: 04/14/89

Eveready Battery
ER-2-2

Date Received: 03/20/89
Date Collected: 03/09/89

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Barium, TCLP Leachate METHOD_208_1	64 mg/l	2	04/12/89	DRL
Chromium, TCLP Leachate METHOD_218_1	0.09 mg/l	0.03	04/10/89	JC
TCLP Leachate extraction	Complete		03/24/89	NDW

Quality Assurance: These analyses are performed in accordance with EPA guidelines for quality assurance. These procedures include the following as a minimum requirement: comparisons against known standards in each run, one in ten sample splits, and a quarterly method review against known spike samples.

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Daniel D. Pastalaniec

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8880 Interchange Drive, Houston, Texas 77054 713/660-0901

Hazcon, Inc.
P.O. Box 947
Katy, TX 77492
Attn: B. Smith/R. Funderburk

E903322-03A
Invoice #: 258028
Report Date: 04/14/89

Eveready Battery
ER-2-3

Date Received: 03/20/89
Date Collected: 03/09/89

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Barium, TCLP Leachate METHOD_208_1	50 mg/l	2	04/12/89	DRL
Chromium, TCLP Leachate METHOD_218_1	0.08 mg/l	0.03	04/10/89	JC
TCLP Leachate extraction	Complete		03/24/89	NDW

Quality Assurance: These analyses are performed in accordance with EPA guidelines for quality assurance. These procedures include the following as a minimum requirement: comparisons against known standards in each run, one in ten sample splits, and a quarterly method review against known spike samples.

SOUTHERN PETROLEUM LABORATORIES, INC.

Daniel D. Pastalaniec

Daniel D. Pastalaniec

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Hazcon, Inc.
P.O. Box 947
Katy, TX 77492
Attn: B. Smith/R. Funderburk

E903322-04A
Invoice #: 258028
Report Date: 04/14/89

Eveready Battery
ER-2-4

Date Received: 03/20/89
Date Collected: 03/09/89

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Barium, TCLP Leachate METHOD_208_1	33 mg/l	2	04/12/89	DRL
Chromium, TCLP Leachate METHOD_218_1	0.09 mg/l	0.03	04/10/89	JC
TCLP Leachate extraction	Complete		03/24/89	NDW

Quality Assurance: These analyses are performed in accordance with EPA guidelines for quality assurance. These procedures include the following as a minimum requirement: comparisons against known standards in each run, one in ten sample splits, and a quarterly method review against known spike samples.

SOUTHERN PETROLEUM LABORATORIES, INC.

Daniel D. Pastalaniec

Daniel D. Pastalaniec

8880 Interchange Drive, Houston, Texas 77054 713/660-0901

Hazcon, Inc.
P.O. Box 947
Katy, TX 77492
Attn: B. Smith/R. Funderburk

E903322-05A
Invoice #: 258028
Report Date: 04/14/89

Eveready Battery
ER-2-5

Date Received: 03/20/89
Date Collected: 03/09/89

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Barium, TCLP Leachate METHOD_208_1	33 mg/l	2	04/12/89	DRL
Chromium, TCLP Leachate METHOD_218_1	0.15 mg/l	0.03	04/10/89	JC
TCLP Leachate extraction	Complete		03/24/89	NDW

Quality Assurance: These analyses are performed in accordance with EPA guidelines for quality assurance. These procedures include the following as a minimum requirement: comparisons against known standards in each run, one in ten sample splits, and a quarterly method review against known spike samples.

SOUTHERN PETROLEUM LABORATORIES, INC.

Daniel D. Pastalaniec

Daniel D. Pastalaniec

8880 Interchange Drive, Houston, Texas 77054 713/660-0901

Hazcon, Inc.
P.O. Box 947
Katy, TX 77492
Attn: B. Smith/R. Funderburk

E903322-06A
Invoice #: 258028
Report Date: 04/14/89

Eveready Battery
ER-2-6

Date Received: 03/20/89
Date Collected: 03/09/89

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Barium, TCLP Leachate METHOD_208_1	79 mg/l	2	04/12/89	DRL
Chromium, TCLP Leachate METHOD_218_1	ND mg/l	0.03	04/10/89	JC
TCLP Leachate extraction	Complete		03/24/89	NDW

Quality Assurance: These analyses are performed in accordance with EPA guidelines for quality assurance. These procedures include the following as a minimum requirement: comparisons against known standards in each run, one in ten sample splits, and a quarterly method review against known spike samples.

SOUTHERN PETROLEUM LABORATORIES, INC.

Daniel D. Pastalaniec

Daniel D. Pastalaniec

TEST REPORT

Report No.: 0401-1011-L **Date:** May 22, 1989

Material: Solidified Mass

Client: Hazcon, Inc.

Project: Hazcon - Various

Sampled by: Client on April 25, 1989

Laboratory No.: See Below

Permeability
US COE EM 1110-2-1906
Revisions Dated May 1, 1980

Sample Identification	Moisture Content (%)	Unit Dry Weight (pcf)	Permeability (cm/sec)
ER2-A	30.7	97.6	$8x10^{-8}$
ER2-B	31.9	96.1	$2x10^{-7}$
ER2-C	35.9	92.3	$1x10^{-6}$

Unconfined Compressive Strength
ASTM D 2166

Sample Number	Moisture Content (%)	Unit Dry Weight (pcf)	Strain (%)	Unconfined Compressive Strength (psi)
ER2-A	32.5	94.3	0.5	718
ER2-B	34.5	93.3	0.3	303
ER2-C	57.0	79.1	1.7	19

[redacted]
Water Content
Blend - 1 28.4% ASTM D95
Blend - 2 42.0% ASTM D2216
Blend - 3 33.1% ASTM D95

TEST REPORT

Report No.: 0401-1011-L
Client: Hazcon, Inc.

Date: May 22, 1989

Freezing and Thowing Test
ASTM D-560

Sample Identification	Moisture Content (%)	Unit Dry Weight (pcf)	Freeze/Thaw Loss (%)
ER2-A	31	98.6	51 (10 cycles)
ER2-B	32	96.2	82 (10 cycles)
ER2-C	36	90.9	61 (2 cycles)

NOTE: Sample C could not be tested more then two cycles. It became very soft and could not withstand more brushing.

Respectfully submitted
McCLELLAND CONSULTANTS
(SOUTHWEST), INC.

Kenneth W Hill

Kenneth W. Hill
Laboratory Testing Manager

KWH/hpm(TR\TR1011)

8880 Interchange Drive, Houston, Texas 77054 713/660-0901

Hazcon, Inc.
P.O. Box 947
Katy, TX 77492
Attn: Timothy Smith

E904332-01A
Invoice #: 260343
Report Date: 05/09/89

Eveready - North Carolina
ER-2-A-1

Date Received: 04/25/89
Date Collected: 04/15/89

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Barium, EP Leachate METHOD_6010	790 mg/l	10	05/07/89	DRL
Chromium, EP Leachate METHOD_218_1	4.7 mg/l	0.2	05/06/89	JC
EP Leachate extraction METHOD_1310	Complete		04/28/89	JU

SOUTHERN PETROLEUM LABORATORIES, INC.

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Hazcon, Inc.
P.O. Box 947
Katy, TX 77492
Attn: Timothy Smith

E904332-02A
Invoice #: 260343
Report Date: 05/09/89

Eveready - North Carolina
ER-2-B-1

Date Received: 04/25/89
Date Collected: 04/15/89

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Barium, EP Leachate METHOD_6010	740 mg/l	10	05/07/89	DRL
Chromium, EP Leachate METHOD_218_1	3.1 mg/l	0.2	05/06/89	JC
EP Leachate extraction METHOD_1310	Complete		04/28/89	JU

SOUTHERN PETROLEUM LABORATORIES, INC.

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Hazcon, Inc.
P.O. Box 947
Katy, TX 77492
Attn: Timothy Smith

E904332-03A
Invoice #: 260343
Report Date: 05/09/89

Eveready - North Carolina
ER-2-C-1

Date Received: 04/25/89
Date Collected: 04/15/89

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Barium, EP Leachate METHOD_6010	1530 mg/l	50	05/07/89	DRL
Chromium, EP Leachate METHOD_218_1	9.1 mg/l	0.2	05/06/89	JC
EP Leachate extraction METHOD_1310	Complete		04/28/89	JU

SOUTHERN PETROLEUM LABORATORIES, INC.

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Hazcon, Inc.
P.O. Box 947
Katy, TX 77492
Attn: Timothy Smith

E904332-04A
Invoice #: 260343
Report Date: 05/09/89

Eveready - North Carolina
ER-2-A-2

Date Received: 04/25/89
Date Collected: 04/15/89

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Barium, TCLP Leachate METHOD_6010	35 mg/l	0.5	05/07/89	DRL
Chromium, TCLP Leachate METHOD_6010	0.18 mg/l	0.02	05/09/89	DRL
TCLP Leachate extraction	Complete		04/28/89	JU

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Hazcon, Inc.
P.O. Box 947
Katy, TX 77492
Attn: Timothy Smith

E904332-05A
Invoice #: 260343
Report Date: 05/09/89

Eveready - North Carolina
ER-2-B-2

Date Received: 04/25/89
Date Collected: 04/15/89

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Barium, TCLP Leachate METHOD_6010	28 mg/l	0.5	05/07/89	DRL
Chromium, TCLP Leachate METHOD_6010	0.09 mg/l	0.02	05/09/89	DRL
TCLP Leachate extraction	Complete		04/28/89	JU

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Hazcon, Inc.
P.O. Box 947
Katy, TX 77492
Attn: Timothy Smith

E904332-06A
Invoice #: 260343
Report Date: 05/09/89

Eveready - North Carolina
ER-2-C-2

Date Received: 04/25/89
Date Collected: 04/15/89

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Barium, TCLP Leachate METHOD_6010	71 mg/l	1	05/07/89	DRL
Chromium, TCLP Leachate METHOD_6010	0.05 mg/l	0.02	05/09/89	DRL
TCLP Leachate extraction	Complete		04/28/89	JU

SOUTHERN PETROLEUM LABORATORIES, INC.

8880 Interchange Drive, Houston, Texas 77054 713/660-0901

Hazcon, Inc.
P.O. Box 947
Katy, TX 77492
Attn: Timothy E. Smith

E905319-01A
Invoice #: 260631
Report Date: 06/02/89

Eveready Battery
ER 2:1 50/50
North Carolina

Date Received: 05/19/89
Date Collected: 05/19/89

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Barium, EP Leachate METHOD_6010	94 mg/l	5	05/31/89	MM
Chromium, EP Leachate METHOD_6010	0.20 mg/l	0.02	05/31/89	MM
EP Leachate extraction METHOD_1310	Complete		05/23/89	JU

SOUTHERN PETROLEUM LABORATORIES, INC.

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Hazcon, Inc.
P.O. Box 947
Katy, TX 77492
Attn: Timothy E. Smith

E905319-02A
Invoice #: 260631
Report Date: 06/02/89

Eveready Battery
ER 3:1 50/50
North Carolina

Date Received: 05/19/89
Date Collected: 05/19/89

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Barium, EP Leachate METHOD_6010	69 mg/l	5	05/31/89	MM
Chromium, EP Leachate METHOD_6010	0.43 mg/l	0.02	05/31/89	MM
EP Leachate extraction METHOD_1310	Complete		05/23/89	JU

SOUTHERN PETROLEUM LABORATORIES, INC.

8880 Interchange Drive, Houston, Texas 77054 713/660-0901

Hazcon, Inc.
P.O. Box 947
Katy, TX 77492
Attn: Timothy E. Smith

E905319-03A
Invoice #: 260631
Report Date: 06/02/89

Eveready Battery
ER 5:1 50/50
North Carolina

Date Received: 05/19/89
Date Collected: 05/19/89

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Barium, EP Leachate METHOD_6010	111 mg/l	5	05/31/89	MM
Chromium, EP Leachate METHOD_6010	0.20 mg/l	0.02	05/31/89	MM
EP Leachate extraction METHOD_1310	Complete		05/23/89	JU

SOUTHERN PETROLEUM LABORATORIES, INC.

8880 Interchange Drive, Houston, Texas 77054 713/660-0901

Hazcon, Inc.
P.O. Box 947
Katy, TX 77492
Attn: Timothy E. Smith

E905319-04A
Invoice #: 260631
Report Date: 06/02/89

Eveready Battery
ER 1:1 FA+
North Carolina

Date Received: 05/19/89
Date Collected: 05/19/89

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Barium, EP Leachate METHOD_6010	129 mg/l	5	05/31/89	MM
Chromium, EP Leachate METHOD_6010	2.8 mg/l	0.02	05/31/89	MM
EP Leachate extraction METHOD_1310	Complete		05/23/89	JU

SOUTHERN PETROLEUM LABORATORIES, INC.

8880 Interchange Drive, Houston, Texas 77054 713/660-0901

Hazcon, Inc.
P.O. Box 947
Katy, TX 77492
Attn: Timothy E. Smith

E905319-05A
Invoice #: 260631
Report Date: 06/02/89

Eveready Battery
ER 3:1 Port.
North Carolina

Date Received: 05/19/89
Date Collected: 05/19/89

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Barium, EP Leachate METHOD_6010	79 mg/l	5	05/31/89	MM
Chromium, EP Leachate METHOD_6010	0.66 mg/l	0.02	05/31/89	MM
EP Leachate extraction METHOD_1310	Complete		05/23/89	JU

SOUTHERN PETROLEUM LABORATORIES, INC.

Appendix B
Field Experience List

FIELD EXPERIENCE LIST

Monsanto Chemical Co.
P.O.C.: Bill McCurly
(Now with A.D.Little)
713/650-0335

Contract Price: $40,000.00
Waste Volume: 50,000 gal.
Waste Type: Tank Bottoms

HAZCON while under contract with Monsanto, to accomplish emergency response, clean out polymer tanks and other solidification tasks at their Chocolate Bayou plant, provided its blending unit and operators to assist Monsanto personnel in cleaning out seven large tanks. Monsanto brought the residual tank bottoms to the HAZCON rig, dumped it into the bin where HAZCON successfully added the chemicals then extruded the resultant mass into a large clay-lined impoundment. The job required Monsanto personnel to use front-end loaders each day to remove the waste treated the previous day and transport it to their on-site landfill.

MOBIL Chemical
P.O.C.: C.B. Lindsey
409/839-1452

Contract Price: $91,000.00
Waste Volume: 87,000 gal.
Waste Type: Tank Bottoms

Mobil's facility in Beaumont contracted with HAZCON to clean out its common waste collection tank. Three other firms had unsuccessfully attempted to render it solid. The job required HAZCON to place a 40-ton silo, a truck mounted blending unit, a series of rotating dump trucks (each would exit as loaded while the waiting truck pulled into its spot) a 25-ton bulk cement carrier and a 1,000 gallon chemical tank all in an area the size of two volleyball courts. The piping and maneuver space was so limited that only one vehicle could be moved at any time. The job required the dump truck, when fully loaded with the treated waste, to pull aside and wait 17 minutes before it could move to and dump its hardened load at their on-site landfill. The load was 10 yd^3 per truck.

STERLING Chemical Co.
P.O.C.: Dan Davidson
409/942-3465

Contract Price: $5,000.00
Waste Volume: 15,000 gal.
Waste Type: Organic Sludge

While under annual contract, HAZCON used its mobile field blending unit to clean out Sterling's washout pits which contain a variety of oils and polymers flushed from various trucks and containers. The mass was blended and pumped directly into a roll-off dump trailer. The trailers were then taken to the nearby Gulf Coast Waste Disposal Authority landfill and dumped. The time from loading to dumping legally was 15 minutes for each load.

PHILLIP'S Petroleum, PR
P.O.C.: Gloria Emmanuelli
809/864-1515

Contract Price: $12,000.00
Waste Volume: 20,000 gal.
Waste Type: API Sep. Sludge

Phillip's refinery in Guayama, Puerto Rico, contracted with HAZCON to remove, blend and solidify slop oil emulsions, naphtha, polymers and crude oil from their on-site impoundment. HAZCON extracted the waste first by sludge pump, then later by backhoe as the sludge thickened, dumped the waste into the blending unit, blended same and poured the resultant material into CECOS Cubes (Brand name for CECOS' cardboard cube container that holds one yd^3 of material. Within 24-hours, the cubes were loaded on flat bed trucks and taken to the port for loading on ship and transport to Emelle, Alabama, for landfill.

TESORO Petroleum
P.O.C.: Ron Grantham
512/828-8484

Contract Price: $241,000.00
Waste Volume: 480,000 gal
Waste Type: API Sep. Sludge
Tank Bottoms

HAZCON was contracted by TESORO Petroleum, Alaska, to provide solidification technology in the closure of their surface impoundments. HAZCON provided the chemical formulation, "Chloranan", and oversaw its application in the field. HAZCON also provided on-site Safety and Health oversight and developed the Site Safety Plan. Over 480,000 gallons of highly organic sludge were treated by project completion.

ARCO Petroleum Products
P.O.C.: James O'Brien
213/486-1940

Contract Price: $43,000.00
Waste Volume: 50,000 gal.
Waste Type: Acidic Sludge

Under the management of the EPA and State of Oklahoma officials, HAZCON recently was paid to excavate several tons of waste from the Sand Springs superfund site for testing and evaluation of the effectiveness of the HAZCON system in dealing with oily waste. The waste had a pH of .85, contained about 50% crude oil and was contaminated with significant concentrations of heavy metals. After thirty days, core samples were taken from both the impoundment used, and the cubic-yard-sized blocks. The samples were them submitted to Rocky Mountain Analytical Laboratories for complete TCLP testing. The impoundment was blended with cement, Chloranan, and waste. The blocks contained various ratios of waste and cement, kiln dust and flyash (ratios varying from 1:1 to 3:1--waste:pozzolan), and Chloranan. Despite the fact that the waste was heavily laden with sulfuric acid, heavy metals and crude oil, the treated product passed all RCRA requirements for legal landfilling.

Appendix C
Chain of Custody

HAZCON Engineering, Inc.
Hazardous Waste Solidification

Analysis Request and Chain of Custody Record

Client/Project Name: EVEREADY BATTERY COMPANY

Project Location: North Carolina

Sample ID #	Date/Time	Sample Size	Sample Type (ie. solid, sludge, liquid)	Analysis Requested
ER-1	2/15/89, 2:45pm	LAB Jar	Solid	NA
ER-2	2/15/89, 3:00pm	LAB Jar	Solid	
ER-3	2/15/89, 3:15pm	LAB Jar	Solid	

Samplers: (Signature) Timothy S. Smith	Relinquished by: (Signature) Timothy S. Smith	Date: 2/23/89 Time: 4:00 pm	Received by: (Signature)	Date: Time:	Intact
Affiliation: HAZCON, Inc.	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
SAMPLER REMARKS: SAMPLES RETURNED to Client for Review, via UPS second day.			Received for laboratory: (Signature)	Date: Time:	Laboratory No.
Seal #			Data Results to:		

32522 McAllister Rd. • Brookshire, TX 77423 • 1-800-2-B-SOLID • (713) 934-4500 • FAX (713) 934-3958

HAZCON Engineering, Inc.
Hazardous Waste Solidification

Analysis Request and Chain of Custody Record

Client/Project Name: EVEREADY BATTERY

Project Location: In-House

Sample ID #	Date/Time	Sample Size	Sample Type (ie. solid, sludge, liquid)	Analysis Requested
ER-2-1	3/9/89, 1445	>150g	Solid	TCLP BARIUM, CHROMIUM, Pb, Ker Toxicity
ER-2-2	3/9/89, 1455	>150g		
ER-2-3	3/9/89 1505	>150g		
ER-2-4	3/9/89, 1515	>150g		
ER-2-5	3/9/89, 1525	>150g		
ER-2-6	3/9/89, 1535	>150g	Solid	

Samplers: (Signature)	Relinquished by: (Signature)	Date: 3/20/89 Time: 1100	Received by: (Signature)	Date: 3/20/89 Time: 1100	Intact ✓
Affiliation: HAZCON	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
SAMPLER REMARKS: Run Extraction on 3/23/89			Received for Laboratory: (Signature)	Date: 3-20-89 Time: 11:03am	Laboratory No.
Seal #			Data Results to:		

32522 McAllister Rd. • Brookshire, TX 77423 • 1-800-2-B-SOLID • (713) 934-4500 • FAX (713) 934-3958

HAZCON Engineering, Inc.
Hazardous Waste Solidification

Analysis Request and Chain of Custody Record

Client/Project Name: EUEREADY

Project Location: North Carolina

Sample ID #	Date/Time	Sample Size	Sample Type (ie. solid, sludge, liquid)	Analysis Requested
ER-2-A UCS	4/15/89, 1230	3"x6"	SOLID	ASTM D-2166 Unconfined Compressive Strength
ER-2-B UCS	4/15/89, 1340	3"x6"		
ER-2-C UCS	4/15/89, 1400	3"x6"		
ER-2-A Perm	4/15/89, 1230	3"x3"		Triaxial Permeability
ER-2-B Perm	4/15/89, 1340	3"x3"		
ER-2-C Perm	4/15/89, 1400	3"x3"		
ER-2-A F/T	4/15/89, 1230	3"x3"		Freeze/Thaw Weathering, 10 Hr Ics
ER-2-B F/T	4/15/89, 1340	3"x3"		
ER-2-C F/T	4/15/89, 1400	3"x3"	SOLID	

Samplers: (Signature)	Relinquished by: (Signature)	Date: 4-25-89 Time: 1315	Received by: (Signature) N.A. Urban	Date: 4-25-89 Time: 1315	Intact
Affiliation: HAZCON	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
SAMPLER REMARKS: F.O.L. Mr. Ken Hill			Received for laboratory: (Signature)	Date: Time:	Laboratory No.
Seal #			Data Results to:		

32522 McAllister Rd. • Brookshire, TX 77423 • 1-800-2-B-SOLID • (713) 934-4500 • FAX (713) 934-3958

HAZCON Engineering, Inc.
Hazardous Waste Solidification

Analysis Request and Chain of Custody Record

Client/Project Name: EVEREADY

Project Location: North Carolina

Sample ID #	Date/Time	Sample Size	Sample Type (ie. solid, sludge, liquid)	Analysis Requested
ER-2-A-1	11/15/89 1230	JAR, >150g	SOLID	E.P. TOXICITY Two Metals: BARIUM CHROMIUM
ER-2-B-1	11/15/89 1300	↑	↑	●
ER-2-C-1	11/15/89, 1400			
ER-2-A-2	11/15/89 1230			TCLP Two Metals: BARIUM CHROMIUM
ER-2-B-2	11/15/89, 1300	↓	↓	
ER-2-C-2	11/15/89, 1400	JAR, >150g	SOLID	
				●

Samplers: (Signature) Timothy S. Smith	Relinquished by: (Signature) Timothy S. Smith	Date: 11-20-89 Time: 1330	Received by: (Signature)	Date: Time:	Intact
Affiliation HAZCON	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
SAMPLER REMARKS: P.O.C. Kim Towler			Received for laboratory: (Signature) Verma Lance	Date 11-25-89 Time: 1:30pm	Laboratory No.
Seal #			Data Results to: Timothy Smith		

HAZCON Engineering, Inc.
Hazardous Waste Solidification

Analysis Request and Chain of Custody Record

Client/Project Name: Everady Battery | Project Location: North Carolina

Sample ID #	Date/Time	Sample Size	Sample Type (ie. solid, sludge, liquid)	Analysis Requested
ER 2:1 50/50	May 19, 1989	>100g	Solid	EP Toxicity "Do Not Crush Samples" for Ba, Cr Ref. Dan P.
ER 3:1 50/50		>100g	Solid	
ER 5:1 50/50		>100g	Solid	
ER 1:1 FA+		>100g	Solid	
ER 3:1 Pert.		>100g	Solid	

Samplers: (Signature)	Relinquished by: (Signature)	Date: 5/17/89 Time: 11:56	Received by: (Signature)	Date: Time:	Intact
Affiliation: HAZCON	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
SAMPLER REMARKS:			Received for laboratory: (Signature)	Date: 5-17-89 Time: 12:00 pm	Laboratory No.
Seal #			Data Results to: Tim. Smith.		

32522 McAllister Rd. • Brookshire, TX 77423 • 1-800-2-B-SOLID • (713) 934-4500 • FAX (713) 934-3958

DATE: 4 May 1989

TO: File

FROM: Grover Nicholson

RE: Telecon with Robert Morris

Robert Morris reported that the following NC Superfund Branch site reports have been reviewed and actions recommended.

Acme United Corp.	NCD 045 924 339	SSI
Amatek Inc.	NCD 085 443 182	SSI, Low
CF Industries	NCD 065 288 847	SSI
Davenport Creosote	NCD 980 838 726	SSI
General Electric, Mebane	NCD 057 037 194	SSI, Med.
General Wood Preserving	NCD 093 137 636	SSI, Low.
Gulf Oil Co.	NCD 075 559 526	SSI
Kelly-Springfield Tire Co.	NCD 048 958 615	LSIE, Low
Monsanto Co.	NCD 088 563 242	SSI, Low
Pantasote, Inc.	NCD 055 165 609	SSI
SCM Proctor Silex	NCD 003 234 549	SSI
Starling David Property	NCD 003 185 311	SSI, High
Union County Drum	NCD 981 930 217	NFA

Also, the following FIT site reports have been reviewed and actions recommended.

Amoco Oil	NCD 040 049 173	SSI
Holding Pond for Waste	NCD 045 920 279	SSI
Encee Chemical Sales, Inc.	NCD 003 201 837	SSI
Wilmington Branch	NCD 001 704 980	SSI

GN/db/memos.1

North Carolina Department of Human Resources
Division of Health Services
P.O. Box 2091 • Raleigh, North Carolina 27602-2091

James G. Martin, Governor
David T. Flaherty, Secretary

Ronald H. Levine, M.D., M.P.H.
State Health Director

July 27, 1988

Willie Page, Environmental Supervisor
Pitt County Health Department
1825 W. 6th Street
Greenville, NC 27834

RE: David Starling Property, Site Assessment
NCD003185311

Mark Durway and Pat DeRosa of the N.C. Superfund Branch will conduct a site assessment for the David Starling Property located at Hwy 258 North, Farmville, NC on August 2, 1988. The purpose of the site assessment is to provide our site investigation teams with accurate information on the community surrounding the site. This information will help us determine the need for a future site investigation at the David Starling Property. The assessment consists of an off-site reconnaissance, as well as determining (a) potable water source(s), (b) population served by the water source(s), and (c) the uses of ground and surface water, within a three mile radius of the site.

If the assessment indicates the need for a future investigation at the David Starling Property, we will contact your office to advise. If you have any questions, please do not hesitate to contact Mark Durway or me at (919) 733-2801.

Sincerely,

Lee Crosby

Lee Crosby, Head
Superfund Branch
Solid Waste Management Section

LC/MD/pb.ibm.health.1

North Carolina Department of Human Resources
Division of Health Services
P.O. Box 2091 • Raleigh, North Carolina 27602-2091

James G. Martin, Governor
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Sincerely,

Lee Crosby

Lee Crosby, Head
Superfund Branch
Solid Waste Management Section

LC/MD/pb.ibm.health.1

COPY

WELL DATA TABULATION

POLLUTION SOURCE MONITORING SITE

Facility Name: UNION CARbide CORp/FARmville County: PITT

Pollution Source (lagoon, landfill, etc.) LAND FILL Latitude: 35° 38' 43"

Permit No: VARIANCE BY R.F. HELMS LETTER OF 3-18-83 Longitude: 77° 37' 43"

Non-Discharge: 1791 NPDES:

Well Const.: DHS: Quad No:

Sampled By: ~~JOSEPH ALEXANDER~~ RUSSELL GIBBS

Well No.	Date Installed	Total Depth (ft)	Diam. (in)	Screen(S)/ Open hole (OH) (ft-ft)	Grout Interval (ft-ft)	Gravel/Sand Pack Interval (ft-ft)	Remarks
MW-1	4-5-83	25	2	S 4.0 - 24.0	*	*	* WELLS WERE
MW-2	4-6-83	25	2	S 3.5 - 23.5	*	*	SAND PACKED, A
MW-3	4-6-83	25	2	S 3.0 - 23.0	*	*	BENTONITE & GROUT
MW-4	4-6-83	25	2	S 3.0 - 23.0	*	*	SEAL INSTALLED -
MW-11 (5)	10-29-85	25	2	S 14.7-24.4	0-8	15-25	ACTUAL DIMENSIONS
MW-12 (6)	10-29-85	25	2	S 14.7-24.3	0-11	14-25	NOT AVAILABLE

Draw a diagram on the reverse side of this form showing map location of the site and the location (direction and distance) of each well with respect to the pollution source and to each other. Indicate sampling schedule, parameters and any changes to schedule.

NORTH CAROLINA DEPARTMENT OF NA[illegible]L RESOURCES AND COMMUNITY DEVELOPMENT
DIVISION OF ENVIRONMENTAL [illegible]GEMENT – GROUNDWATER SECTION
P.O. BOX 27687 – RALEIGH, N.C. 27611, PHONE (919) 733-5083

RECEIVED
WASHINGTON OFFICE
MAR 28 1986
D. E. M.

WELL MW-11

WELL CONSTRUCTION RECORD

FOR OFFICE USE ONLY
Quad. No. _____ Serial No. _____
Lat. _____ Long. _____ Pc _____
Minor Basin _____
Basin Code _____
Header Ent. _____ GW-1 Ent. _____

DRILLING CONTRACTOR Law Engineering Testing Co.

DRILLER REGISTRATION NUMBER 332

STATE WELL CONSTRUCTION PERMIT NUMBER: per attached variance lette

1. WELL LOCATION: (Show sketch of the location below)
Nearest Town: Farmville, NC
Highway 258, Toddy Community
(Road, Community, or Subdivision and Lot No.)
County: Pitt

2. OWNER David Starling
ADDRESS Rt. 2, Box 246 (Street or Route No.)
Farmville, NC 27826
City or Town State Zip Code

3. DATE DRILLED 10/29/85 USE OF WELL Monitoring

4. TOTAL DEPTH 25.0 ft. CUTTINGS COLLECTED ☐ Yes ☒ No

5. DOES WELL REPLACE EXISTING WELL? ☐ Yes ☒ No

6. STATIC WATER LEVEL: 7.63 FT. ☐ above ☒ below TOP OF CASING, 11/1/85
TOP OF CASING IS 2.60 FT. ABOVE LAND SURFACE.

7. YIELD (gpm): N/A METHOD OF TEST N/A

8. WATER ZONES (depth): N/A

9. CHLORINATION: Type N/A Amount N/A

10. CASING:

	Depth		Diameter	Wall Thickness or Weight/Ft.	Material
From	0.0	To 14.7 Ft.	2"i.d.	Sch 40	PVC
From		To Ft.			
From		To Ft.			

11. GROUT:

	Depth		Material	Method
From	0.0	To 8.0 Ft.	Portland ~~Cement/Bentonite~~	Trimming Pipe
From		To Ft.		

12. SCREEN:

	Depth		Diameter	Slot Size	Material
From	14.7	To 24.4 Ft.	2"i.d. in.	0.010 in.	PVC
From		To Ft.	in.	in.	
From		To Ft.	in.	in.	

13. GRAVEL PACK:

	Depth		Size	Material
From	15.0	To 25.0 Ft.	33	Concrete Sand
From		To Ft.		

14. REMARKS: Split-spoon samples were obtained on 2.5 ft. intervals

Depth From	Depth To	DRILLING LOG Formation Description
0.0	1.0	Loose Very Dark Brown Silty Organic Fine SAND
1.0	13.5	Loose to Firm Tan Silty Fine SAND with Gray Silty Sand Layers
13.5	24.5	Loose to Firm Tan to Gray Iron-Stained Silty Fine to Coarse SAND
24.5	25.0	Dark Gray Silty Very Fine SAND
	25.0	Boring Terminated

If additional space is needed use back of form.

LOCATION SKETCH
(Show direction and distance from at least two State Roads, or other map reference points)

See Enclosed Maps (3)

MW-11

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15 NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Gregory P. Myers Project Staff Geologist 3/3/86
SIGNATURE OF CONTRACTOR OR AGENT DATE

GW-1 Revised 11/84

Submit original to Division of Environmental Management and copy to well owner.

NORTH CAROLINA DEPARTMENT OF NATURAL RESOURCES AND COMMUNITY DEVELOPMENT
DIVISION OF ENVIRONMENTAL MANAGEMENT – GROUNDWATER SECTION
P.O. BOX 27687 – RALEIGH, N.C. 27611, PHONE (919) 733-5083

RECEIVED WASHINGTON OFFICE MAR 28 1986

WELL MW-12

WELL CONSTRUCTION RECORD

E & E

FOR OFFICE USE ONLY
Quad. No. _____ Serial No. _____
Lat. _____ Long. _____ Pc _____
Minor Basin _____
Basin Code _____
Header Ent. _____ GW-1 Ent. _____

DRILLING CONTRACTOR: Law Engineering Testing Co.
DRILLER REGISTRATION NUMBER: 332
STATE WELL CONSTRUCTION PERMIT NUMBER: per attached variance let

1. WELL LOCATION: (Show sketch of the location below)
Nearest Town: Farmville, NC
County: Pitt
Highway 258, Toddy Community
(Road, Community, or Subdivision and Lot No.)

2. OWNER: David Starling
ADDRESS: Rt. 2, Box 246 (Street or Route No.)
Farmville, (City or Town) NC (State) 27828 (Zip Code)

3. DATE DRILLED: 10/29/85 USE OF WELL: Monitoring

4. TOTAL DEPTH: 25.0 ft. CUTTINGS COLLECTED: ☐ Yes ☒ No

5. DOES WELL REPLACE EXISTING WELL? ☐ Yes ☒ No

6. STATIC WATER LEVEL: 6.50 FT. ☐ above ☒ below TOP OF CASING, 11/1/85
TOP OF CASING IS 2.40 FT. ABOVE LAND SURFACE.

7. YIELD (gpm): N/A METHOD OF TEST: N/A

8. WATER ZONES (depth): N/A

9. CHLORINATION: Type N/A Amount N/A

10. CASING:

	Depth From	Depth To	Diameter	Wall Thickness or Weight/Ft.	Material
	0.0	14.7 Ft.	2" i.d.	Sch 40	PVC
		Ft.			
		Ft.			

11. GROUT:

	Depth From	Depth To	Material	Method
	0.0	11.0 Ft.	Portland/ ~~Bentonite~~	Trimming Pipe
		Ft.		

12. SCREEN:

	Depth From	Depth To	Diameter	Slot Size	Material
	14.7	24.3 Ft.	2" i.d. in.	0.010 in.	PVC
		Ft.	in.	in.	
		Ft.	in.	in.	

13. GRAVEL PACK:

	Depth From	Depth To	Size	Material
	14.0	25.0 Ft.	33	Concrete Sand
		Ft.		

14. REMARKS: Split-spoon samples were obtained on 2.5 ft. intervals

Depth From	Depth To	DRILLING LOG Formation Description
0.0	1.0	Firm Dark Brown to Tan Silt Organic SAND and Slightly Silty Fine SAND
1.0	13.0	Loose to Firm Tan Silty Fin to Medium SAND
13.0	22.5	Loose to Firm, Tan to Gray Iron-Stained Silty Fine to Coarse SAND
22.5	25.0	Loose to Firm Dark Gray Sil Clayey Fine SAND to Dark Gray Silty CLAY
25.0		Boring Terminated

If additional space is needed use back of form.

LOCATION SKETCH
(Show direction and distance from at least two State Roads, or other map reference points)

See Enclosed Maps (3)

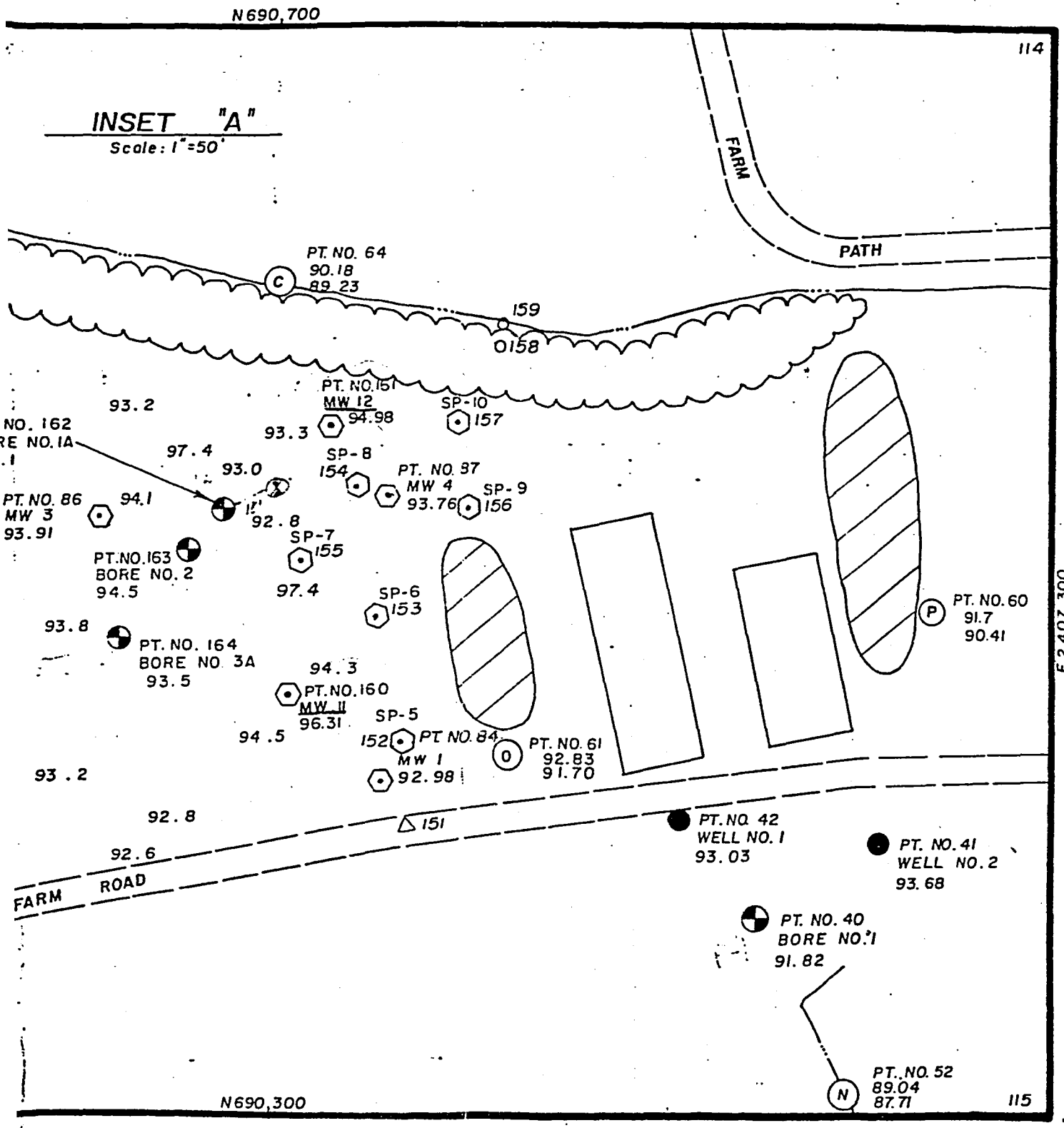
MW-12

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15 NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Gregory P. Myers PROJECT STAFF GEOLOGIST 3/3/86
SIGNATURE OF CONTRACTOR OR AGENT DATE

GW-1 Revised 11/84

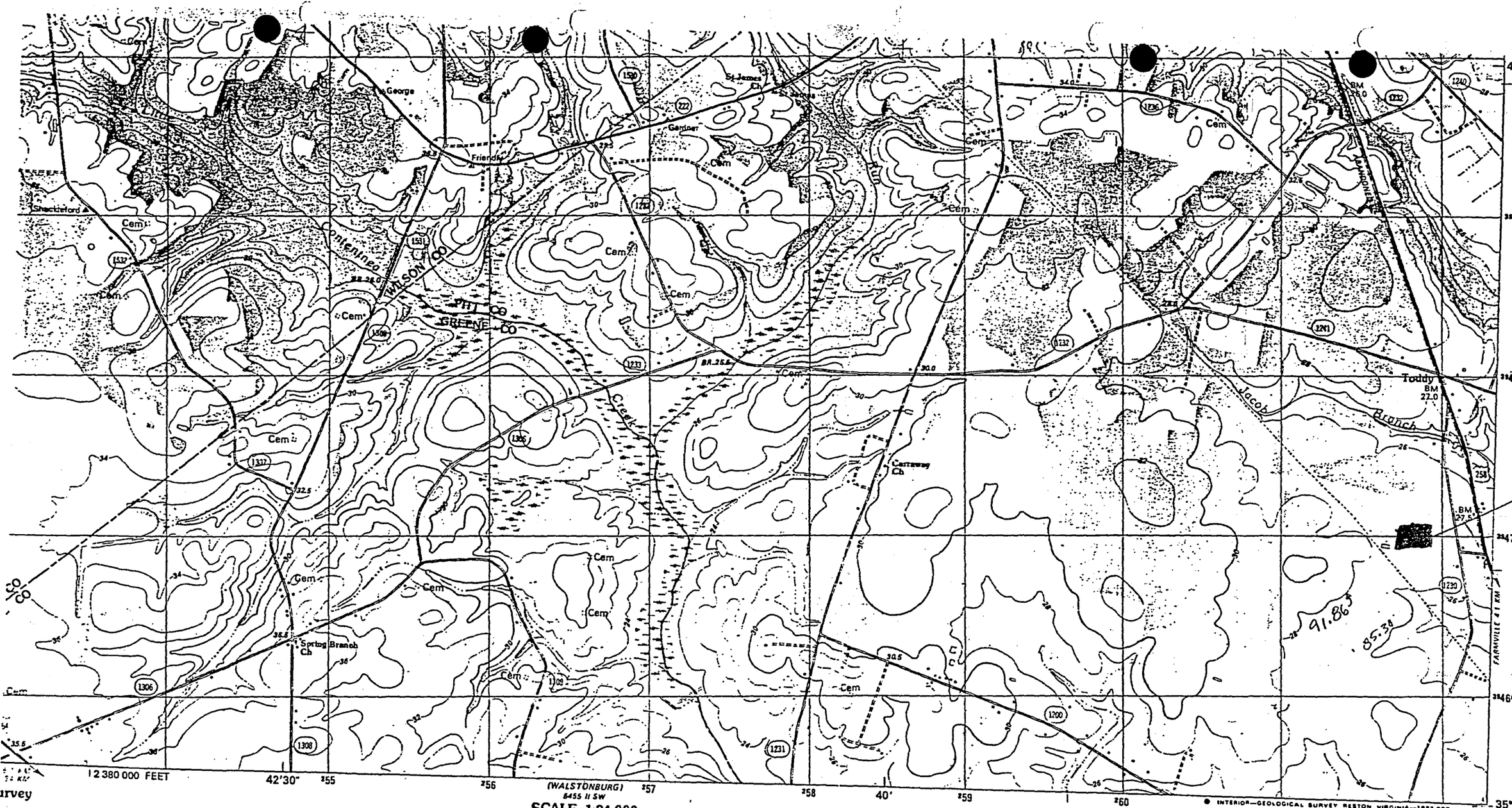
Submit original to Division of Environmental Management and copy to well owner.



Reference: Plainmetric Map - Farmville, N.C.

FIG. III

Survey work by Mc David & Ass., Inc.



SCALE 1:24 000

MN GN
7° 124 MILS 1°34' 28 MILS

UTM GRID AND 1981 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

1 .5 0 KILOMETERS 1 2
1000 0 METERS 1000 2000
1 .5 0 MILES 1
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10 000 FEET

CONTOUR INTERVAL 2 METERS
NATIONAL GEODETIC VERTICAL DATUM OF 1929
CONTROL ELEVATIONS SHOWN TO THE NEAREST 0.1 METER
OTHER ELEVATIONS SHOWN TO THE NEAREST 0.5 METER

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

N.C.

QUADRANGLE LOCATION

CONTOURS AND ELEVATIONS IN METERS

ROAD CLASSIFICATION

Primary highway, hard surface
Secondary highway, hard surface
Light-duty road, hard or improved surface
Unimproved road
Interstate Route U. S. Route State Route

FOUNTAIN, N. C.

NW/4 FALKLAND 15' QUADRANGLE
N3537.5—W7737.5/7.5

1981

DMA 5455 II NW—SERIES V842

1 .5144
2 1.2192
3 1.5240
4 1.8288
5 2.1336
6 2.4384
7 2.7432
8 3.0480

To convert feet to meters multiply by .3048
To convert meters to feet multiply by 3.28084

Approximate Site Location

91.86

85.38

2.5 to 3.0 from Farmville on Hwy 258

FIG. I

E 2,405,000

E 2,406,000

E 2,407,000

E 2,408,000

N 692,000

N 691,000

PT. NO. 66
90.58
89.78

PT. NO. 65
90.34
89.48

PT. NO. 64
90.18
89.23

PT. NO. 63
89.29
88.04

PT. NO 62
88.19
87.3

See Inset "A" for Detail

PT. NO. 43
BORE NO 2
92.99

PT. NO. 86
MW 3
93.91

PT. NO. 87
MW 4
93.76

PT. NO. 85
MW 2
93.32

PT. NO. 84
MW 1
92.98

PT. NO. 42
WELL NO. 1
93.03

PT. NO 40
BORE NO. 1
91.82

PT. NO. 52
89.04
87.71

PT. NO. 41
WELL NO. 2
93.68

PT. NO. 45
92.73
91.78

PT. NO. 44
93.02
91.82

PT. NO 46
92.96
91.41

PT. NO. 47
WELL NO. 3
95.67

PT. NO. 34

PT. NO. 38

SIGN

PT. NO. 33
IRON SET

PT. NO.
WELL
91.61

92.9
93.0
91.6
91.4
92.8
92.6
91.2
94.2
93.5
93.5
93.2
93.0
92.7
91.8

93.65,
Bench Mark Spike
in power pole

REFERENCE: Planimetric Map -
Farmville, N.C.
Survey work by
Mc Dowell & Ass. Inc.
Farmville, N.C

COMPLIANCE MONITORING REPORT FORM

Environmental Management Division
Groundwater Section
P.O. Box 27687
Raleigh,N.C. 27611
(919)733-5083

Facility Name: Eveready Battery Company, Inc.
Address: P. O. Box 1547
Greenville, N. C. 27834
Well Location: Starling Farm, Farmville, N. C.
Well Identification Number: #1 Well Depth: 25 Ft.
Well Diameter: 2" Sample (Screened) Interval: 4 Ft. To: 24 Ft.
Depth to Water Level: 6.44 ft. below measuring point. (before sampling)
Measuring point is: 0.0 feet above land surface
Gallons of water pumped bailed before sampling: 10

County: Pitt
Permit Number: Variance by R.F. Helms 3/18/83
Non-Discharge:
NPDES:
Water Use:
Injection Well:
Well Construction:
Other:

Field Analysis: pH: Specific Conductance: uMhos Temp.: 19 °C Odor: None Appearance: Tan
Date Sample Collected: 11/3/86 Date Lab Sample Analyzed: 11/3/86
Laboratory Name: ENVIRONMENT I Certification No.: 10

COD	mg/l	NO_2 as N	mg/l	Ni - Nickel	mg/l
Coliform: MF Fecal	/100ml	NO_3 as N	mg/l	Pb - Lead	mg/l
Coliform: MF Total	/100ml	Phosphorus: Total as P	mg/l	Zn - Zinc 0.140	mg/l
Dissolved Solids: Total 178	mg/l	Al - Aluminum	mg/l	Pesticides/Herbicides (Specify Compounds)	
pH (when analyzed) 5.1	units	Ba - Barium 0.155	mg/l		ug/l
TOC	mg/l	Ca - Calcium	mg/l		ug/l
Chloride 22	mg/l	Cd - Cadmium	mg/l		ug/l
Arsenic	mg/l	Chromium: Total 0.0057	mg/l	Other (Specify)	ug/l
Grease and Oils	mg/l	Cu - Copper <0.010	mg/l		ug/l
Hardness: Total	mg/l	Fe - Iron	mg/l		ug/l
Phenol 0.004	mg/l	Hg - Mercury	mg/l		ug/l
Sulfate 136	mg/l	K - Potassium	mg/l		ug/l
Specific Conductance 268	uMhos	Mg - Magnesium	mg/l		ug/l
Total Ammonia(NH_3 + NH_4) 0.24	mg/l	Mn - Manganese	mg/l		
TKN as N	mg/l	Na - Sodium	mg/l		

Note:
Values should reflect total concentrations

I CERTIFY THAT THIS REPORT IS TRUE AND ACCURATE.

J. M. Maxon/ 11/24/86
SIGNATURE OF PERMITTEE (OR AUTHORIZED AGENT*) DATE

* See back for instructions
** Submit blue and green copies to address above.

GW-59 Revised 7/85

COMPLIANCE MONITORING REPORT FORM

Environmental Management Division
Groundwater Section
P.O. Box 27687
Raleigh,N.C. 27611
(919)733-5083

Facility Name: Eveready Battery Company, Inc. County: Pitt

Address: P. O. Box 1547 Permit Number: Variance by R.F. Helm 3/18/83

Greenville, N. C. 27834 Non-Discharge:

Well Location: Starling Farm, Farmville, N. C. NPDES:

Well Identification Number: #2 Well Depth: 25 Ft. Water Use:

Well Diameter: 2" Sample (Screened) Interval: 3.5 Ft. To 23.5 Ft. Injection Well:

Depth to Water Level: 6.32 ft. below measuring point. (before sampling) Well Construction:

Measuring point is: 0.5 feet above land surface Other:

Gallons of water pumped bailed before sampling: 10

Field Analysis: pH: Specific Conductance: uMhos Temp.: 18.5 °C Odor: None Appearance: Tan

Date Sample Collected: 11/3/86 Date Lab Sample Analyzed: 11/3/86

Laboratory Name: Environment I Certification No.: 10

COD	mg/l	NO_2 as N	mg/l	Ni - Nickel	mg/l
Coliform: MF Fecal	/100ml	NO_3 as N	mg/l	Pb - Lead	mg/l
Coliform: MF Total	/100ml	Phosphorus: Total as P	mg/l	Zn - Zinc 0.164	mg/l
Dissolved Solids: Total 49	mg/l	Al - Aluminum	mg/l	Pesticides/Herbicides (Specify Compounds)	
pH (when analyzed) 4.7	units	Ba - Barium 0.148	mg/l		ug/l
TOC	mg/l	Ca - Calcium	mg/l		ug/l
Chloride 26	mg/l	Cd - Cadmium	mg/l		ug/l
Arsenic	mg/l	Chromium: Total 0.0021	mg/l	Other (Specify)	ug/l
Grease and Oils	mg/l	Cu - Copper <0.010	mg/l		ug/l
Hardness: Total	mg/l	Fe - Iron	mg/l		ug/l
Phenol <0.002	mg/l	Hg - Mercury	mg/l		ug/l
Sulfate 9.0	mg/l	K - Potassium	mg/l		ug/l
Specific Conductance 85.7	uMhos	Mg - Magnesium	mg/l		ug/l
Total Ammonia(NH_3 + NH_4) 0.03	mg/l	Mn - Manganese	mg/l		
TKN as N	mg/l	Na - Sodium	mg/l		

Note:

Values should reflect total concentrations

* See back for instructions

** Submit blue and green copies to address above.

I CERTIFY THAT THIS REPORT IS TRUE AND ACCURATE.

J. M. Maxon/ 11/24/86

SIGNATURE OF PERMITTEE (OR AUTHORIZED AGENT*) DATE

GW-59 Revised 7/85

COMPLIANCE MONITORING REPORT FORM

Environmental Management Division
Groundwater Section
P.O. Box 27687
Raleigh,N.C. 27611
(919)733-5083

Facility Name: Eveready Battery Company, Inc. — County: Pitt

Address: P. O. Box 1547 — Permit Number: Variance by R. F. Helms 3/18/83

Greenville, N. C. 27834 — Non-Discharge:

Well Location: Starling Farm, Farmville, N. C. — NPDES:

Well Identification Number: #3 — Well Depth: 25 Ft. — Water Use:

Well Diameter: 2" — Sample (Screened) Interval: 3.0 Ft. To 23 Ft. — Injection Well:

Depth to Water Level: 7.48 ft. below measuring point. (before sampling) — Well Construction:

Measuring point is: 0.8 feet above land surface — Other:

Gallons of water pumped bailed before sampling: 10

Field Analysis: pH _____ Specific Conductance _____ uMhos Temp. 19 °C Odor: None Appearance: Tan

Date Sample Collected: 11/3/86 Date Lab Sample Analyzed: 11/3/86

Laboratory Name: Environment I Certification No.: 10

COD	mg/l	NO_2 as N	mg/l	Ni - Nickel	mg/l
Coliform: MF Fecal	/100ml	NO_3 as N	mg/l	Pb - Lead	mg/l
Coliform: MF Total	/100ml	Phosphorus: Total as P	mg/l	Zn - Zinc 0.239	mg/l
Dissolved Solids: Total 166	mg/l	Al - Aluminum	mg/l	Pesticides/Herbicides (Specify Compounds)	
pH (when analyzed) 6.1	units	Ba - Barium 0.236	mg/l		ug/l
TOC	mg/l	Ca - Calcium	mg/l		ug/l
Chloride 36	mg/l	Cd - Cadmium	mg/l		ug/l
Arsenic	mg/l	Chromium: Total 0.0011	mg/l	Other (Specify)	ug/l
Grease and Oils	mg/l	Cu - Copper <0.010	mg/l		ug/l
Hardness: Total	mg/l	Fe - Iron	mg/l		ug/l
Phenol <0.002	mg/l	Hg - Mercury	mg/l		ug/l
Sulfate 7.0	mg/l	K - Potassium	mg/l		ug/l
Specific Conductance 183	uMhos	Mg - Magnesium	mg/l		ug/l
Total Ammonia(NH_3 + NH_4) 0.03	mg/l	Mn - Manganese	mg/l		
TKN as N	mg/l	Na - Sodium	mg/l		

Note:
Values should reflect total concentrations

I CERTIFY THAT THIS REPORT IS TRUE AND ACCURATE.

J. M. Maxon 11/24/86

SIGNATURE OF PERMITTEE (OR AUTHORIZED AGENT *) DATE

* See back for instructions

** Submit blue and green copies to address above.

GW-59 Revised 7/85

COMPLIANCE MONITORING REPORT FORM

Environmental Management Division
Groundwater Section
P.O. Box 27687
Raleigh,N.C. 27611
(919)733-5083

Facility Name: Eveready Battery Company, Inc. — County: Pitt

Address: P. O. Box 1547
Greenville, N. C. 27834 — Permit Number: Variance by R.F. Helms 3/18/83

Non-Discharge:

Well Location: Starling Farm, Farmville, N. C. — NPDES:

Well Identification Number: #4 — Well Depth: 25 Ft. — Water Use:

Well Diameter: 2" — Sample (Screened) Interval: 3.0 Ft. To 23 Ft. — Injection Well:

Depth to Water Level: 7.29 ft. below measuring point. (before sampling) — Well Construction:

Measuring point is: 0.5 feet above land surface — Other:

Gallons of water pumped bailed before sampling: 10

Field Analysis: pH: — Specific Conductance: — uMhos Temp.: 18.5 °C — Odor: None — Appearance: Tan

Date Sample Collected: 11/3/86 — Date Lab Sample Analyzed: 11/3/86

Laboratory Name: Environment I — Certification No.: 10

COD	mg/l	NO_2 as N	mg/l	Ni - Nickel	mg/l
Coliform: MF Fecal	/100ml	NO_3 as N	mg/l	Pb - Lead	mg/l
Coliform: MF Total	/100ml	Phosphorus: Total as P	mg/l	Zn - Zinc 0.094	mg/l
Dissolved Solids: Total 437	mg/l	Al - Aluminum	mg/l	Pesticides/Herbicides (Specify Compounds)	
pH (when analyzed) 6.0	units	Ba - Barium 0.218	mg/l		ug/l
TOC	mg/l	Ca - Calcium	mg/l		ug/l
Chloride 45	mg/l	Cd - Cadmium	mg/l		ug/l
Arsenic	mg/l	Chromium: Total 0.002	mg/l	Other (Specify)	ug/l
Grease and Oils	mg/l	Cu - Copper <0.010	mg/l		ug/l
Hardness: Total	mg/l	Fe - Iron	mg/l		ug/l
Phenol 0.006	mg/l	Hg - Mercury	mg/l		ug/l
Sulfate 89	mg/l	K - Potassium	mg/l		ug/l
Specific Conductance 597	uMhos	Mg - Magnesium	mg/l		ug/l
Total Ammonia(NH_3 + NH_4) 0.99	mg/l	Mn - Manganese	mg/l		
TKN as N	mg/l	Na - Sodium	mg/l		

Note:
Values should reflect total concentrations

I CERTIFY THAT THIS REPORT IS TRUE AND ACCURATE.

J. M. Maxon/ 11/24/86

SIGNATURE OF PERMITTEE (OR AUTHORIZED AGENT*) DATE

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** Submit blue and green copies to address above.

GW-59 Revised 7/85

COMPLIANCE MONITORING REPORT FORM

Environmental Management Division
Groundwater Section
P.O. Box 27687
Raleigh,N.C. 27611
(919)733-5083

Facility Name: Eveready Battery Company, Inc.
Address: P. O. Box 1547
Greenville, N. C. 27834
Well Location: Starling Farm, Farmville, N. C.
Well Identification Number: #11 Well Depth: 25 Ft.
Well Diameter: 2" Sample (Screened) Interval: 14.7 Ft. To 24.4 Ft.
Depth to Water Level: 8.78 ft. below measuring point. (before sampling)
Measuring point is: 2.60 feet above land surface
Gallons of water pumped bailed before sampling: 10

County: Pitt
Permit Number: Variance by R.F. Helms 3/18/83
Non-Discharge:
NPDES:
Water Use:
Injection Well:
Well Construction:
Other:

Field Analysis: pH: Specific Conductance: uMhos Temp.: 19 °C Odor: None Appearance: Tan
Date Sample Collected: 11/3/86 Date Lab Sample Analyzed: 11/3/86
Laboratory Name: Environment I Certification No.: 10

COD	mg/l	NO_2 as N	mg/l	Ni - Nickel	mg/l
Coliform: MF Fecal	/100ml	NO_3 as N	mg/l	Pb - Lead	mg/l
Coliform: MF Total	/100ml	Phosphorus: Total as P	mg/l	Zn - Zinc 0.117	mg/l
Dissolved Solids: Total 796	mg/l	Al - Aluminum	mg/l	Pesticides/Herbicides (Specify Compounds)	
pH (when analyzed) 5.8	units	Ba - Barium 0.424	mg/l		ug/l
TOC	mg/l	Ca - Calcium	mg/l		ug/l
Chloride 80	mg/l	Cd - Cadmium	mg/l		ug/l
Arsenic	mg/l	Chromium: Total 0.0012	mg/l	Other (Specify)	ug/l
Grease and Oils	mg/l	Cu - Copper <0.010	mg/l		ug/l
Hardness: Total	mg/l	Fe - Iron	mg/l		ug/l
Phenol 0.104	mg/l	Hg - Mercury	mg/l		ug/l
Sulfate <1.0	mg/l	K - Potassium	mg/l		ug/l
Specific Conductance 970	uMhos	Mg - Magnesium	mg/l		ug/l
Total Ammonia(NH_3 + NH_4) 0.36	mg/l	Mn - Manganese	mg/l		
TKN as N	mg/l	Na - Sodium	mg/l		

Note: Values should reflect total concentrations

I CERTIFY THAT THIS REPORT IS TRUE AND ACCURATE.

J. M. Maxon/ 11/24/86
SIGNATURE OF PERMITTEE (OR AUTHORIZED AGENT*) DATE

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** Submit blue and green copies to address above.

GW-59 Revised 7/85

COMPLIANCE MONITORING REPORT FORM

Environmental Management Division
Groundwater Section
P.O. Box 27687
Raleigh,N.C. 27611
(919)733-5083

Facility Name: Eveready Battery Company, Inc.
Address: P. O. Box 1547
Greenville, N. C. 27834
Well Location: Starling Farm, Farmville, N. C.
Well Identification Number: #12 Well Depth: 25 Ft.
Well Diameter: 2" Sample (Screened) Interval: 14.7 Ft. To 24.3 Ft.
Depth to Water Level: 8.62 ft. below measuring point. (before sampling)
Measuring point is: 2.40 feet above land surface
Gallons of water pumped bailed before sampling: 10

County: Pitt
Permit Number: Variance by R.F. Helms 3/18/83
Non-Discharge:
NPDES:
Water Use:
Injection Well:
Well Construction:
Other:

Field Analysis: pH: Specific Conductance: uMhos Temp.: 18.5 °C Odor: None Appearance: Tan
Date Sample Collected: 11/3/86 Date Lab Sample Analyzed: 11/3/86
Laboratory Name: Environment I Certification No.: 10

COD	mg/l	NO_2 as N	mg/l	Ni - Nickel	mg/l
Coliform: MF Fecal	/100ml	NO_3 as N	mg/l	Pb - Lead	mg/l
Coliform: MF Total	/100ml	Phosphorus: Total as P	mg/l	Zn - Zinc	0.068 mg/l
Dissolved Solids: Total	58 mg/l	Al - Aluminum	mg/l	Pesticides/Herbicides (Specify Compounds)	
pH (when analyzed)	5.6 units	Ba - Barium	0.155 mg/l		ug/l
TOC	mg/l	Ca - Calcium	mg/l		ug/l
Chloride	15 mg/l	Cd - Cadmium	mg/l		ug/l
Arsenic	mg/l	Chromium: Total	0.0017 mg/l	Other (Specify)	ug/l
Grease and Oils	mg/l	Cu - Copper	<0.010 mg/l		ug/l
Hardness: Total	mg/l	Fe - Iron	mg/l		ug/l
Phenol	<0.002 mg/l	Hg - Mercury	mg/l		ug/l
Sulfate	<1.0 mg/l	K - Potassium	mg/l		ug/l
Specific Conductance	100.4 uMhos	Mg - Magnesium	mg/l		ug/l
Total Ammonia(NH_3 + NH_4)	<0.03 mg/l	Mn - Manganese	mg/l		
TKN as N	mg/l	Na - Sodium	mg/l		

Note:
Values should reflect total concentrations

I CERTIFY THAT THIS REPORT IS TRUE AND ACCURATE.

J. M. Maxon/ 11/24/86
SIGNATURE OF PERMITTEE (OR AUTHORIZED AGENT*) DATE

* See back for instructions
** Submit blue and green copies to address above.

GW-59 Revised 7/85

NORTH CAROLINA
DEPARTMENT OF WATER RESOURCES
DIVISION OF GROUND WATER

QUALITY OF WATER DATA (Office)

Well No.: Field H-1

Location: Town FARMVILLE County PITT W.C. Permit No.: VAR, ISSUED 3/83

Facility Location: SR 1230 Type: LANDFILL Facility Permit No.:

Owner UNION CARBIDE Depth 25 ft. Diam. 2 in. Yield gpm

Aquifer WATER TABLE Screen 4-24

Contact Person: RUSSELL GIBBS Address: POB 1547 GRNVLLE Phone: 756-2171

ate	pH	Spec. Cond.	Cl Mg/l	Phenol Mg/l	TDS	COD Mg/l	TKN Mg/l	NH_3 Mg/l	NO_2 Mg/l	Cu Mg/l	Zn mg/L	Barium mg/l	chrom. mg/l	magnes. mg/l	Dissolved Sulfate mg/l	W.L.
983																
4-7	4.8	145										6.4	.010	2.4	6.	
-26	4.9	290										0.5	.012	—	—	
985																
10-25	4.6	312	33	<0.05	226			0,4		0.023	0.159	0.05	0.022		3.50	4.00
186																
3-5	4.9	240	21	0.013	178			<0.03		0.0083	0.0099	0.117	0.0059		7.5	3.56
1-86	4.3	316	43	6	225		0.51			48	174	183	5.1	85		
EM 12-86										<.01	.027	<.5	.17			
7-87	5.3	224	14	0.014	201			0.21		<0.01	0.030	0.095	0.021		56	7.83
1-14			22	0.007	172			0.61			0.012	<0.010			66	

Attachment 2

DEPARTMENT OF NATURAL RESOURCES AND COMMUNITY DEVELOPMENT
DIVISION OF ENVIRONMENTAL MANAGEMENT

WATER LEVEL MEASUREMENTS (Office)

Project Emerald / Battery Cd. Quad No. # 1

Location: Town _____ County _____ Serial No. _____

Map _____

Owner _____ Depth _____ ft.; Diam. _____ in.; Yield _____ gpm

Aquifer _____ Screen _____ Spec. cap. _____

Measuring point _____ Elev. _____ ft. above MSL

Date	Hour	Depth to water	Elev. of W. L.		Date	Hour	Depth to water	Elev. of W. L.	
1987									
11-18		8.00							

CW-4 Revised 10/1/80

NORTH CAROLINA
DEPARTMENT OF WATER RESOURCES
DIVISION OF GROUND WATER

QUALITY OF WATER DATA (Office)

Well No.: Field #2

Location: Town Farmville County Pitt W.C. Permit No.: UAR issued 3/83

Facility Location: SR 1230 Type: Landfill Facility Permit No.:

Owner Union Carbide Depth 25 ft. Diam. 2 in. Yield gpm

Aquifer Water Table Screen 3.5 – 23.5

Contact Person: Russell W. Gibbs Address: P.O.B. 1547 Granville Phone: 756-2171

Date	pH	Spec. Cond.	Cl Mg/l	Phenol Mg/l	TDS	COD Mg/l	TKN Mg/l	NH_3 Mg/l	NO_2 Mg/l	Cu Mg/l	Zn	Total Barium mg/l	Total Chrom mg/l	Total Mngnese mg/l	Dissolved Solids mg/l	W.L.
983																
4-7	4.7	25										<0.3	.005	2.8	<5.	
5-26	5.2	95										–	–	–	–	
1985																
0-25	4.4	74.3	15	<0.05	81			0.7		0.014	0.051	0.030	0.018		0.5	
1986																
3-5	4.7	80	20	<0.002	79			0.12		0.0115	0.0095	0.169	0.0018		1.0	2.46
7-86	4.3	82.3	20	.8	63			0.06		44	<10	119	2.3		7.0	
DEM 12-86										.03	.036	<.5	<.025			
1987																
3/30	4.5	36.5	14		34			<0.03		0.018	0.044	0.103	<0.010		15	
7/28	4.8	80	14	0.008	52			0.09		<0.01	0.059	0.128	<0.01		16	
11-18			12	.005	49			0.03		<0.010	<0.010	<0.010	<0.010		11	

DEPARTMENT OF NATURAL RESOURCES AND COMMUNITY DEVELOPMENT
DIVISION OF ENVIRONMENTAL MANAGEMENT

#2

WATER LEVEL MEASUREMENTS (Office)

Project: Eveready Battery Co. Quad No. ______

Location: Town ______ County ______ Serial No. ______

Map ______

Owner ______ Depth ______ ft.; Diam. ______ in.; Yield ______ gpm

Aquifer ______ Screen ______ Spec. cap. ______

Measuring point ______ Elev. ______ ft. above MSL

Date	Hour	Depth to water	Elev. of W. L.		Date	Hour	Depth to water	Elev. of W. L.	
1983									
3/31		1.83							
7/28		7.17							
11-18		7.33							

2

NORTH CAROLINA
DEPARTMENT OF WATER RESOURCES
DIVISION OF GROUND WATER

QUALITY OF WATER DATA (Office)

Well No.: Field 3

Location: Town Farmville County Pitt W.C. Permit No.: WAR Issued 3/83

Facility Location: SR 1230 Type: Landfill Facility Permit No.:

Owner Union Carbide Depth 25 ft. Diam. 2 in. Yield gpm

Aquifer Water Table Screen 3-23

Contact Person: RUSSELL GIBBS Address: Phone: 756-2171

Date	pH	Spec. Cond.	Cl Mg/l	PHENOL Mg/l	TDS	COD Mg/l	TKN Mg/l	NH_3 Mg/l	NO_2 Mg/l	Cu Mg/l	Zn mg/l	BARIUM mg/l	CHROM mg/l	MAGNESIUM mg/l	Dissolved SULFATE mg/l	W.L.
983																
4-7	6.9	560										<0.3	<.005	16.	84.	
5-26	6.7	560										—	—	—	—	
985																
10-25	5.6	233	46	<0.05	191			<0.1		0.015	0.052	0.10	0.017		2.70	
986																
3-5	6.2	380	70	<0.002	261			<0.03		0.0036	0.0226	0.168	<0.001		1.10	3.98
7-86	5.6	278	60	6	241			0.09		12	22	307	1.6		6.0	
DEM 12-86										.013	.015	<.5	<.025			
1987																
9-30	5.6	233	39	<0.002	170			<0.03		1.010	0.018	0.134	<0.010		33	
7-28	5.6	2160	57	0.016	180			0.09		<0.01	0.096	2.613	<0.01		10	
11-18			46	0.012	154			0.03		<0.010	<0.010	0.109	0.015		6	

DEPARTMENT OF NATURAL RESOURCES AND COMMUNITY DEVELOPMENT
DIVISION OF ENVIRONMENTAL MANAGEMENT

#3

WATER LEVEL MEASUREMENTS (Office)

Project Eveready Battery Co. Quad No._____

Location: Town_____ County_____ Serial No._____

Map_____

Owner_____ Depth_____ft.; Diam._____in.; Yield_____gpm

Aquifer_____ Screen_____ Spec. cap._____

Measuring point_____ Elev._____ft. above MSL

Date	Hour	Depth to water	Elev. of W. L.		Date	Hour	Depth to water	Elev. of W. L.	
3-30		3.47							
7-28		8.54'							
11-14		9.00							

GW-4 Revised 10/1/80

NORTH CAROLINA
DEPARTMENT OF WATER RESOURCES
DIVISION OF GROUND WATER

QUALITY OF WATER DATA (Office)

Well No.: Field 4

Location: Town Farmville County Pitt W.C. Permit No.: WR 1534-d

Facility Location: SR 1230 Type: Landfill Facility Permit No.:

Owner Union Carbide Depth 25 ft. Diam. 2 in. Yield gpm

Aquifer water table Screen 3.0 -23.0

Contact Person: Joseph Alexander Address: Phone:

Date	pH	Spec. Cond.	Cl Mg/l	PHENOL Mg/l	TDS	COD Mg/l	TKN Mg/l	NH_3 Mg/l	NO_2 Mg/l	Cu Mg/l	Zn mg/l	BARium mg/l	chrom mg/l	magNESium mg/l	Dissolv Sulfate Mg/l	DEPTH W.L.
1983																
4-7	5.6	1000										<0.3	<.005	34.	92.	
5-26	6.4	1100										—	—	—	—	
1985																
0-25	6.0	1116	97	<0.05	761			6.5		0.018	0.024	0.08	0.028		16.0	
1986																
3-5	7.1	1726	91	<0.002	1231			20.7		0.0056	0.287	0.114	<0.001		11	4.40
7-86	6.4	1282	37	14	902			10.8		56	29	289	11		155	
DEM 12-86										<.01	.025	<.5	<.025			
7-28-87	6.7	1201	25	0.042	982			9.90		<0.01	0.042	0.559	<0.01		92	8.62
1-18			76	0.002	823			8.1		<0.010	<0.010	0.165	<0.018		104	

Attachment 2

DEPARTMENT OF NATURAL RESOURCES AND COMMUNITY DEVELOPMENT
DIVISION OF ENVIRONMENTAL MANAGEMENT

WATER LEVEL MEASUREMENTS (Office)

Project Eveready Battery Co. Quad No. H 4

Location: Town _____ County _____ Serial No. _____

Map _____

Owner _____ Depth _____ ft.; Diam. _____ in.; Yield _____ gpm

Aquifer _____ Screen _____ Spec. cap. _____

Measuring point _____ Elev. _____ ft. above MSL

Date	Hour	Depth to water	Elev. of W. L.		Date	Hour	Depth to water	Elev. of W. L.	
11-18-87		8.58							

GW-4 Revised 10/1/80

NORTH CAROLINA
DEPARTMENT OF WATER RESOURCES
DIVISION OF GROUND WATER

~~QUALITY OF WATER DATA (Office)~~ Well No.: Field GW/MW# 5/11

Location: Town Fairmville County Pitt W.C. Permit No.: Var. issued

Facility Location: SR 1230 Type: Landfill Facility Permit No.:

Owner Union Carbide Depth 25 ft. Diam. 2 in. Yield gpm

Aquifer U.T. Screen 14.7' - 24.4'

Contact Person: Address: Phone:

ate	pH	Spec. Cond.	Cl Mg/l	Phenol Mg/l	TDS	COD Mg/l	TKN Mg/l	NH_3 Mg/l	NO_2 Mg/l	Cu mg/l	Zn mg/l	Total Barium mg/l	Total Chrom. mg/l	Total Magnes. mg/l	Dissolved Sulfate mg/l	W.L.
-5-86	5.5	1000	Unable to analyze	0.16	790			2.70		0.0183	0.0021	0.395	<.001		0.70	6.88
DEM 12-84										<.01	.062	<.5	<.035			
7-84	5.0	156	74	3	131			0.8		6.0	1	53	<1		3.0	
1987																
7-28	5.7	1182	340	0.058	1050			0.84		<0.01	0.048	0.347	0.021		6.9	11.12
11-18			310	0.045	840			0.90		<0.010	0.010	0.452	[illegible]		6	

Attachment 2

DEPARTMENT OF NATURAL RESOURCES AND COMMUNITY DEVELOPMENT
DIVISION OF ENVIRONMENTAL MANAGEMENT

WATER LEVEL MEASUREMENTS (Office)

Project Union Eveready Quad No. #11

Location: Town ________ County ________ Serial No. ________

Map ________

Owner ________ Depth ______ ft.; Diam. ______ in.; Yield ______ gpm

Aquifer ________ Screen ________ Spec. cap. ________

Measuring point ________ Elev. ________ ft. above MSL

Date	Hour	Depth to water	Elev. of W. L.		Date	Hour	Depth to water	Elev. of W. L.	
11-18		11.25							

GW-4 Revised 10/1/80

NORTH CAROLINA
DEPARTMENT OF WATER RESOURCES
DIVISION OF GROUND WATER

QUALITY OF WATER DATA (Office)

Well No.: Field GW/MW 12

Location: Town Farmville County Pitt W.C. Permit No.: Var. Issued

Facility Location: SR 1230 Type: Landfill Facility Permit No.:

Owner Union Carbide Depth 25 ft. Diam. 2 in. Yield gpm

Aquifer U.T. Screen 14.7' – 24.3'

Contact Person: Address: Phone:

Date	pH	Spec. Cond.	Cl Mg/l	Phenol Mg/l	TDS	COD Mg/l	TKN Mg/l	NH_3 Mg/l	NO_2 Mg/l	Cu Mg/l	Zn	Total Barium Mg/l	Total Chrom. Mg/l	Total Magnes. Mg/l	Dissolved Sulfate Mg/l	DEPTH W.T.
5-86	6.3	110	15	0.006	129			<0.03		0.0059	0.019	0.142	<.001		0.40	5.71
DEM 12-86										.010	.019	<.5	<.025			
1987																
3/30	5.7	128	17	0.002	118			<0.03		0.032	0.051	0.120	<0.010		22	
7-28	5.9	140	34	0.01	105			0.12		<0.01	0.039	0.221	<0.01		5.7	9.58
11-7			16	0.015	59			0.09		<0.010	0.014	0.067	0.014		5	

Attachment 2

DEPARTMENT OF NATURAL RESOURCES AND COMMUNITY DEVELOPMENT
DIVISION OF ENVIRONMENTAL MANAGEMENT

WATER LEVEL MEASUREMENTS (Office)

Project Emerald

Quad No. H12

Location: Town _____ County _____

Serial No. _____

Map _____

Owner _____ Depth _____ ft.; Diam. _____ in.; Yield _____ gpm

Aquifer _____ Screen _____ Spec. cap. _____

Measuring point _____ Elev. _____ ft. above MSL

Date	Hour	Depth to water	Elev. of W. L.		Date	Hour	Depth to water	Elev. of W. L.	
11/18		10.00							

GW-4 Revised 10/1/80

Wa

EVEREADY BATTERY COMPANY, INC.
P.O. BOX 1547
100 W. GREENVILLE BOULEVARD
GREENVILLE, NORTH CAROLINA 27834

TELEPHONE: (919) 756-2171

September 14, 1987

Environmental Management Division
Groundwater Section
P. O. Box 27687
Raleigh, N. C. 27611

Please find attached two copies each (blue and green) of Compliance Monitoring Report Form signed and dated September 14, 1987. Please note that these reports represent resampling of wells at the Starling Farm for Barium only. The sampling results for July, 1987 were submitted to you on August 25, 1987.

If you have questions please advise.

Very truly yours,

Russell W. Gibbs

Environmental Coordinator

RWG/wjb

Attachment

cc: J. M. Maxon/J. C. Card
T. K. Cagle
H. R. Reece/J. S. Cargile
A. M. Nash - R.R.
J. T. Houser - R.R.

COMPLIANCE MONITORING REPORT FORM

Environmental Management Division
Groundwater Section
P.O. Box 27687
Raleigh,N.C. 27611
(919)733-5083

Wa

Facility Name: Eveready Battery Co. Inc. — County: Pitt
Address: P. O. Box 1547 — Permit Number: Variance by R.F. Helms 3/18/83
Greenville, N. C. 27834 — Non-Discharge:
Well Location: Starling Farm, Farmville, N. C. — NPDES:
Well Identification Number: 1 — Well Depth: 25 Ft. — Water Use:
Well Diameter: 2" — Sample (Screened) Interval: 4 Ft. To 24 Ft. — Injection Well:
Depth to Water Level: _____ ft. below measuring point. (before sampling) — Well Construction:
Measuring point is: 0.0 feet above land surface — Other:
Gallons of water pumped bailed before sampling: _____
Field Analysis: pH _____ Specific Conductance _____ uMhos Temp. _____ °C Odor _____ Appearance _____
Date Sample Collected: 8/27/87 — Date Lab Sample Analyzed: 8/27/87
Laboratory Name: Environment I, Inc. — Certification No.: 10

COD	mg/l	NO_2 as N	mg/l	Ni - Nickel	mg/l
Coliform: MF Fecal	/100ml	NO_3 as N	mg/l	Pb - Lead	mg/l
Coliform: MF Total	/100ml	Phosphorus: Total as P	mg/l	Zn - Zinc	mg/l
Dissolved Solids: Total	mg/l	Al - Aluminum	O.K mg/l	Pesticides/Herbicides (Specify Compounds)	
pH (when analyzed)	units	Ba - Barium	0.223 mg/l		ug/l
TOC	mg/l	Ca - Calcium	mg/l		ug/l
Chloride	mg/l	Cd - Cadmium	mg/l		ug/l
Arsenic	mg/l	Chromium: Total	mg/l	Other (Specify)	ug/l
Grease and Oils	mg/l	Cu - Copper	mg/l		ug/l
Hardness: Total	mg/l	Fe - Iron	mg/l		ug/l
Phenol	mg/l	Hg - Mercury	mg/l		ug/l
Sulfate	mg/l	K - Potassium	mg/l		ug/l
Specific Conductance	uMhos	Mg - Magnesium	mg/l		ug/l
Total Ammonia(NH_3 + NH_4)	mg/l	Mn - Manganese	mg/l		
TKN as N	mg/l	Na - Sodium	mg/l		

RECEIVED
SEP 15 1987
GROUNDWATER SECTION
RALEIGH, NC

RECEIVED
WASHINGTON OFFICE
SEP 25 1987
DEM

Note:
Values should reflect total concentrations.

I CERTIFY THAT THIS REPORT IS TRUE AND ACCURATE.

SIGNATURE OF PERMITTEE (OR AUTHORIZED AGENT*) — DATE: 9/17/87

* See back for instructions
** Submit blue and green copies to address above.

GW-59 Revised 7/85

COMPLIANCE MONITORING REPORT FORM

Environmental Management Division
Groundwater Section
P.O. Box 27687
Raleigh,N.C. 27611
(919)733-5083

Facility Name: Eveready Battery Co. Inc. — County: Pitt
Address: P. O. Box 1547, Greenville, N. C. 27834 — Permit Number: Variance by R.F. Helms 3/18/83
Non-Discharge
NPDES
Well Location: Starling Farm, Farmville, N. C. — Water Use
Well Identification Number: 2 — Well Depth: 25 Ft. — Injection Well
Well Diameter: 2" — Sample (Screened) Interval: 3.5 Ft. To 23.5 Ft. — Well Construction
Depth to Water Level: _____ ft. below measuring point. (before sampling) — Other
Measuring point is: 0.5 feet above land surface
Gallons of water pumped bailed before sampling: _____
Field Analysis: pH _____ Specific Conductance _____ uMhos Temp. _____ °C Odor _____ Appearance _____
Date Sample Collected: 8/27/87 — Date Lab Sample Analyzed: 8/27/87
Laboratory Name: Environment I, Inc. — Certification No.: 10

COD _____ mg/l	NO_2 as N _____ mg/l	Ni - Nickel _____ mg/l
Coliform: MF Fecal _____ /100ml	NO_3 as N _____ mg/l	Pb - Lead _____ mg/l
Coliform: MF Total _____ /100ml	Phosphorus: Total as P _____ mg/l	Zn - Zinc _____ mg/l
Dissolved Solids: Total _____ mg/l	Al - Aluminum _____ mg/l	Pesticides/Herbicides (Specify Compounds)
pH (when analyzed) _____ units	Ba - Barium 0.003 mg/l	_____ ug/l
TOC _____ mg/l	Ca - Calcium _____ mg/l	_____ ug/l
Chloride _____ mg/l	Cd - Cadmium _____ mg/l	_____ ug/l
Arsenic _____ mg/l	Chromium: Total _____ mg/l	Other (Specify) _____ ug/l
Grease and Oils _____ mg/l	Cu - Copper _____ mg/l	_____ ug/l
Hardness: Total _____ mg/l	Fe - Iron _____ mg/l	_____ ug/l
Phenol _____ mg/l	Hg - Mercury _____ mg/l	_____ ug/l
Sulfate _____ mg/l	K - Potassium _____ mg/l	_____ ug/l
Specific Conductance _____ uMhos	Mg - Magnesium _____ mg/l	_____ ug/l
Total Ammonia(NH_3 + NH_4) _____ mg/l	Mn - Manganese _____ mg/l	
TKN as N _____ mg/l	Na - Sodium _____ mg/l	

Note: Values should reflect total concentrations

I CERTIFY THAT THIS REPORT IS TRUE AND ACCURATE.

SIGNATURE OF PERMITTEE (OR AUTHORIZED AGENT*) — DATE: 9/14/87

* See back for instructions
** Submit blue and green copies to address above.

GW-59 Revised 7/85

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Groundwater Section
P.O. Box 27687
Raleigh,N.C. 27611
(919)733-5083

Facility Name: Eveready Battery Co. Inc.
Address: P. O. Box 1547
Greenville, N. C. 27834
Well Location: Starling Farm, Farmville, N. C.
Well Identification Number: 3 Well Depth: 25 Ft.
Well Diameter: 2" Sample (Screened) Interval: 3 Ft. To: 23 Ft.
Depth to Water Level: _____ ft. below measuring point. (before sampling)
Measuring point is: 0.8 feet above land surface
Gallons of water pumped bailed before sampling: _____

County: Pitt
Permit Number: Variance by R.F. Helms 3/18/83
Non-Discharge: _____
NPDES: _____
Water Use: _____
Injection Well: _____
Well Construction: _____
Other: _____

Field Analysis: pH _____ Specific Conductance _____ uMhos Temp. _____ °C Odor _____ Appearance _____
Date Sample Collected: 8/27/87 Date Lab Sample Analyzed: 8/27/87
Laboratory Name: Environment I, Inc. Certification No.: 10

COD	mg/l	NO_2 as N	mg/l	Ni - Nickel	mg/l
Coliform: MF Fecal	/100ml	NO_3 as N	mg/l	Pb - Lead	mg/l
Coliform: MF Total	/100ml	Phosphorus: Total as P	mg/l	Zn - Zinc	mg/l
Dissolved Solids: Total	mg/l	Al - Aluminum	mg/l	Pesticides/Herbicides (Specify Compounds)	
pH (when analyzed)	units	Ba - Barium	0.094 mg/l		ug/l
TOC	mg/l	Ca - Calcium	mg/l		ug/l
Chloride	mg/l	Cd - Cadmium	mg/l		ug/l
Arsenic	mg/l	Chromium: Total	mg/l	Other (Specify)	ug/l
Grease and Oils	mg/l	Cu - Copper	mg/l		ug/l
Hardness: Total	mg/l	Fe - Iron	mg/l		ug/l
Phenol	mg/l	Hg - Mercury	mg/l		ug/l
Sulfate	mg/l	K - Potassium	mg/l		ug/l
Specific Conductance	uMhos	Mg - Magnesium	mg/l		ug/l
Total Ammonia(NH_3 + NH_4)	mg/l	Mn - Manganese	mg/l		
TKN as N	mg/l	Na - Sodium	mg/l		

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SEP 15 1987
GROUNDWATER SECTION
RALEIGH, NC

Note:
Values should reflect total concentrations

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COMPLIANCE MONITORING REPORT FORM

Environmental Management Division
Groundwater Section
P.O. Box 27687
Raleigh,N.C. 27611
(919)733-5083

Facility Name: Eveready Battery Co. Inc. County: Pitt

Address: P. O. Box 1547 Permit Number: Variance by R.F. Helms 3/18/83

Greenville, N. C. 27834 Non-Discharge:

Well Location: Starling Farm, Farmville, N. C. NPDES:

Well Identification Number: 4 Well Depth: 25 Ft. Water Use:

Well Diameter: 2" Sample (Screened) Interval: 3 Ft. To: 23 Ft. Injection Well:

Depth to Water Level: _____ ft. below measuring point. (before sampling) Well Construction:

Measuring point is: 0.5 feet above land surface Other:

Gallons of water pumped bailed before sampling:

Field Analysis: pH _____ Specific Conductance _____ uMhos Temp. _____ °C Odor _____ Appearance _____

Date Sample Collected: 8/27/87 Date Lab Sample Analyzed: 8/27/87

Laboratory Name: Environment I, Inc. Certification No.: 10

COD	mg/l	NO_2 as N	mg/l	Ni - Nickel	mg/l
Coliform: MF Fecal	/100ml	NO_3 as N	mg/l	Pb - Lead	mg/l
Coliform: MF Total	/100ml	Phosphorus: Total as P	mg/l	Zn - Zinc	mg/l
Dissolved Solids: Total	mg/l	Al - Aluminum	mg/l	Pesticides/Herbicides (Specify Compounds)	
pH (when analyzed)	units	Ba - Barium	0.227 mg/l		ug/l
TOC	mg/l	Ca - Calcium	mg/l		ug/l
Chloride	mg/l	Cd - Cadmium	mg/l		ug/l
Arsenic	mg/l	Chromium: Total	mg/l	Other (Specify)	ug/l
Grease and Oils	mg/l	Cu - Copper	mg/l		ug/l
Hardness: Total	mg/l	Fe - Iron	mg/l		ug/l
Phenol	mg/l	Hg - Mercury	mg/l		ug/l
Sulfate	mg/l	K - Potassium	mg/l		ug/l
Specific Conductance	uMhos	Mg - Magnesium	mg/l		ug/l
Total Ammonia (NH_3 + NH_4)	mg/l	Mn - Manganese	mg/l		
TKN as N	mg/l	Na - Sodium	mg/l		

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RECEIVED WASHINGTON OFFICE SEP 25 1987 D.E.M.

Values should reflect total concentrations

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SIGNATURE OF PERMITTEE (OR AUTHORIZED AGENT *) DATE 9/14/87

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GW-59 Revised 7/85

COMPLIANCE MONITORING REPORT FORM

Environmental Management Division
Groundwater Section
P.O. Box 27687
Raleigh,N.C. 27611
(919)733-5083

Facility Name: Eveready Battery Co. Inc. — County: Pitt

Address: P. O. Box 1547 — Permit Number: Variance by R.F. Helms 3/18/83

Greenville, N. C. 27834 — Non-Discharge:

Well Location: Starling Farm, Farmville, N. C. — NPDES:

Well Identification Number: 11 — Well Depth: 25 Ft. — Water Use:

Well Diameter: 2" — Sample (Screened) Interval: 14.7 Ft. To 24.4 Ft. — Injection Well:

Depth to Water Level: _____ ft. below measuring point. (before sampling) — Well Construction:

Measuring point is: 2.60 feet above land surface — Other:

Gallons of water pumped bailed before sampling: _____

Field Analysis: pH _____ Specific Conductance _____ uMhos Temp. _____ °C Odor _____ Appearance _____

Date Sample Collected: 8/27/87 — Date Lab Sample Analyzed: 8/27/87

Laboratory Name: Environment I, Inc. — Certification No.: 10

COD	mg/l	NO_2 as N	mg/l	Ni - Nickel	mg/l
Coliform: MF Fecal	/100ml	NO_3 as N	mg/l	Pb - Lead	mg/l
Coliform: MF Total	/100ml	Phosphorus: Total as P	mg/l	Zn - Zinc	mg/l
Dissolved Solids: Total	mg/l	Al - Aluminum	mg/l	Pesticides/Herbicides (Specify Compounds)	
pH (when analyzed)	units	Ba - Barium	0.046 mg/l		ug/l
TOC	mg/l	Ca - Calcium	mg/l		ug/l
Chloride	mg/l	Cd - Cadmium	mg/l		ug/l
Arsenic	mg/l	Chromium: Total	mg/l	Other (Specify)	ug/l
Grease and Oils	mg/l	Cu - Copper	mg/l		ug/l
Hardness: Total	mg/l	Fe - Iron	mg/l		ug/l
Phenol	mg/l	Hg - Mercury	mg/l		ug/l
Sulfate	mg/l	K - Potassium	mg/l		ug/l
Specific Conductance	uMhos	Mg - Magnesium	mg/l		ug/l
Total Ammonia(NH_3 + NH_4)	mg/l	Mn - Manganese	mg/l		
TKN as N	mg/l	Na - Sodium	mg/l		

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SEP 15 1987
GROUNDWATER SECTION
RALEIGH, NC

RECEIVED
SEP 25 1987
WASHINGTON OFFICE
D.E.N.R.

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[signature] — 9/14/87

SIGNATURE OF PERMITTEE (OR AUTHORIZED AGENT*) — DATE

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COMPLIANCE MONITORING REPORT FORM

Environmental Management Division
Groundwater Section
P.O. Box 27687
Raleigh,N.C. 27611
(919)733-5083

Facility Name: Eveready Battery Co. Inc. — County: Pitt
Address: P. O. Box 1547 — Permit Number: Variance by R.F. Helms 3/18/83
Greenville, N. C. 27834 — Non-Discharge:
Well Location: Starling Farm, Farmville, N. C. — NPDES:
Well Identification Number: 12 — Well Depth: 25 Ft. — Water Use:
Well Diameter: 2" — Sample (Screened) Interval: 14.7 Ft. To 24.3 Ft. — Injection Well:
Depth to Water Level: _____ ft. below measuring point. (before sampling) — Well Construction:
Measuring point is 2.40 feet above land surface — Other:
Gallons of water pumped bailed before sampling:
Field Analysis: pH _____ Specific Conductance _____ uMhos Temp. _____ °C Odor _____ Appearance _____
Date Sample Collected: 8/27/87 — Date Lab Sample Analyzed: 8/27/87
Laboratory Name: Environment I, Inc. — Certification No.: 10

COD	mg/l	NO_2 as N	mg/l	Ni - Nickel	mg/l
Coliform: MF Fecal	/100ml	NO_3 as N	mg/l	Pb - Lead	mg/l
Coliform: MF Total	/100ml	Phosphorus: Total as P	mg/l	Zn - Zinc	mg/l
Dissolved Solids: Total	mg/l	Al - Aluminum	mg/l	Pesticides/Herbicides (Specify Compounds)	
pH (when analyzed)	units	Ba - Barium	0.037 mg/l		ug/l
TOC	mg/l	Ca - Calcium	mg/l		ug/l
Chloride	mg/l	Cd - Cadmium	mg/l		ug/l
Arsenic	mg/l	Chromium: Total	mg/l	Other (Specify)	ug/l
Grease and Oils	mg/l	Cu - Copper	mg/l		ug/l
Hardness: Total	mg/l	Fe - Iron	mg/l		ug/l
Phenol	mg/l	Hg - Mercury	mg/l		ug/l
Sulfate	mg/l	K - Potassium	mg/l		ug/l
Specific Conductance	uMhos	Mg - Magnesium	mg/l		ug/l
Total Ammonia(NH_3 + NH_4)	mg/l	Mn - Manganese	mg/l		
TKN as N	mg/l	Na - Sodium	mg/l		

SEP 25 1987
GROUNDWATER SECTION
RALEIGH, NC

RECEIVED
WASHINGTON OFFICE
SEP 25 1987

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WASHINGTON OFFICE
SEP 25 1987

Note:
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I CERTIFY THAT THIS REPORT IS TRUE AND ACCURATE.

SIGNATURE OF PERMITTEE (OR AUTHORIZED AGENT *) — DATE: 9/14/87

* See back for instructions.
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GW-59 Revised 7/85

UNION CARBIDE CORPORATION
P. O. BOX 1547, GREENVILLE, NORTH CAROLINA 27834
Battery Products Division

March 27, 1986

North Carolina Department of Natural
and Economic Resources
P. O. Box 1507
Washington, N. C. 27889

Attention: Mr. Richard R. Powers

Dear Mr. Powers:

Please find attached copies of Well Construction Record for monitoring wells (MW-11 and MW-12) recently installed at the Starling Farm site in Farmville, North Carolina. Sampling results from these two wells will be included in our report to you for the March sampling period.

If you have questions please advise.

Very truly yours,

Russell W. Gibbs

Russell W. Gibbs

RWG/wjb

Attachments

cc: J. M. Maxon
T. K. Cagle
H. R. Reece
A. M. Nash - R.R.

MEMO

DATE: 9/2/86

TO: Willie Hardison

RECEIVED
WASHINGTON REGIONAL OFFICE
SEP 03 1986
D. E. N. R.

SUBJECT: Eveready Battery Co. Pitt Co

Note GA violations of Phenol, Cd, TDS, Cl in some combination for All 6 well samples analysed. If Cd had been analysed for All wells & not just well #1, I suspect the problem would be greater.

What is your intention re these contaminants? Do we need more wells? more frequent sampling? A hydrochemical investigation? some remediation plan submitted by company? Please put something in writing.

Bob Check

North Carolina Department of Natural Resources & Community Development

Environment 1, Incorporated

BOX 7085
GREENVILLE, N.C. 27835-7085

114 OAKMONT DRIVE
PHONE (919) 756-6208

September 8, 1986

Mr. Russell Gibbs
Union Carbide Company
P.O. Box 1547
Greenville, N.C. 27834

Dear Mr. Gibbs:

Enclosed herewith are two copies of our Standard Operating Procedures and other pertinent information specific to our present contract. If you have any questions, do not heistate to give me a call.

Sincerely,

Steve

Steve Jones

ENVIRONMENT 1, INC.
114 OAKMONT DRIVE
P.O. BOX 7085
GREENVILLE, N.C. 27834

ENVIRONMENT 1, INC. HAS BEEN IN THE FIELD OF ENVIRONMENTAL MONITORING FOR OVER TEN YEARS. OUR EXPERTISE IS IN THE AREAS OF WASTEWATER, POTABLE WATER, HAZARDOUS WASTE, FOOD MICROBIOLOGY, AND CONTRACT TESTING. OUR CLIENT LIST INCLUDES CIBA-GEIGY, PROCTOR AND GAMBLE, AND APPROXIMATELY 400 OTHER INDUSTRIES AND MUNICIPALITIES IN OUR GEOGRAPHIC AREA. WE ROUTINELY PERFORM ANALYSES BY ATOMIC ABSORPTION SPECTROSCOPY, BOTH FLAME AND FURNACE, GAS CHROMOTOGRAPHY, VISIBLE SPECTROSCOPY, WET CHEMISTRY, PHYSICAL TESTING, AND MICROBIOLOGY. METHODOLOGIES USED IN ROUTINE TESTING ARE FROM THE EPA METHODS FOR CHEMICAL ANALYSIS OF OF WATER AND WASTES (EPA 600/4-79-020, REVISED MARCH, 1983), STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER (16TH EDITION, 1985), AND FDA BACTERIOLOGICAL ANALYTICAL MANUAL (AUGUST, 1978).

FUNCTIONAL DESCRIPTION OF KEY PERSONNEL

JOHN MELVIN	MR. MELVIN SERVES AS THE LABORATORY MANAGER AND IS ALSO A FLAME / FURNACE / COLD VAPOR ATOMIC ABSORPTION SPECTROSCOPIST. HIS DEGREE IS A B.S. IN CHEMISTRY FROM THE UNIVERSITY OF GEORGIA. HE HAS BEEN IN THE EMPLOY OF THE CORPORATION SINCE ITS INCEPTION. BEFORE JOINING ENVIRONMENT 1 MR. MELVIN WORKED TEN YEARS AS A REGIONAL CHEMIST FOR THE N.C. DIVISION OF ENVIRONMENTAL MANAGEMENT.
STEVE JONES	MR. JONES IS CLASSIFIED AS A CLASSICAL INORGANIC TECHNICAL ANALYST. HIS DEGREE IS A B.S. IN ENVIRONMENTAL HEALTH FROM EAST CAROLINA UNIVERSITY. HE HAS BEEN IN THE EMPLOY OF THE COMPANY FOR THE PAST 10 YEARS.
DAWN BROOME	MS. BROOME IS CLASSIFIED AS AN INORGANIC SAMPLE PREPARATION EXPERT AND A FLAME/FURNACE /COLD VAPOR ATOMIC ABSORPTION SPECTROSCOPIST. HER DEGREE IS A B.S. IN CHEMISTRY FROM EAST CAROLINA UNIVERSITY.
SHANNON PARKS	MS. PARKS IS CLASSIFIED AS AN INORGANIC, WET CHEMISTRY, AND MICROBIOLOGICAL ANALYST. HER DEGREE IS A B.S. IN BIOLOGY FOR THE UNIVERSITY OF NORTH CAROLINA AT WILMINGTON.
BOB HILGOE	MR. HILGOE IS CLASSIFIED AS AN INORGANIC, WET CHEMISTRY, TECHNICON, AND PHYSICAL TESTING ANALYST. HIS DEGREE IS IN ENVIRONMENTAL SCIENCE FROM PITT COMMUNITY COLLEGE.
ANITA MEADE	MS. MEADE IS CLASSIFIED AS A BIOLOGICAL, WET CHEMISTRY AND PHYSICAL TESTING ANALYST. HER DEGREE IS IN BIOLOGY FROM CARSON-NEWMAN.

LABORATORY CAPITAL EQUIPMENT

PERKIN-ELMER MODEL 4000 ATOMIC ABSORPTION SPECTROPHOTOMETER

PERKIN-ELMER MODEL HGA-400 FURNACE (FOR ABOVE AA)

BECKMAN MODEL 26 SPECTROPHOTOMETER

TECHNICON AUTO-ANALYZER

YELLOW SPRINGS CONDUCTIVITY METER

GENERAL ANALYTICAL SUPPORT EQUIPMENT

FISHER ISOTEMP OVEN
FUME HOOD
MILLIPORE WATER SYSTEM (MILLI-RO15 & DE-IONIZATION)
MARKET FORGE STREILMATIC AUTOCLAVE
DESPATCH WARM AIR OVEN
FISHER CENTRIFIC CENTRIFUGE
FISHER ACCUMET PH METER
FISHER MODEL 182 MUFFLE FURNACE
FISHER ACCUMET MODEL 230A PH/ION METER
GELMAN VACUUM MANIFOLD
SAMPLE STORAGE REFRIGERATORS (2)
METTLER H70 ANALYTICAL BALANCE
OHUS TRIPLE BEAM BALANCE MODEL 700
CENTURY VACUUM PUMPS (2)
HOTPLATES (13)
AUTOMATIC DISHWASHER
BLENDERS (20)
DESSICATORS (6)
TIMERS (6)
BUNSEN BURNERS (14)
RECORDING THERMOMETER (FOR AUTOCLAVE)
NBS TRACEABLE THERMOMETER
VARIOUS THERMOMETERS (12)
LAB CARTS (8)
MORTAR & PESTLE
EVAPORATING DISHES (58)
WATCHGLASSES (13)
SPATULAS (48)
PETRI DISHES (48)
FUNNELS (38)

GRADUATED CYLINDERS	10 ML	2
	25 ML	6
	50 ML	12
	100 ML	34
	250 ML	2
	500 ML	9
	1,000 ML	25
ERLENMEYER FLASKS	125 ML	27
	250 ML	48
	500 ML	6
	1,000 ML	9
PLASTIC BEAKERS (68)		
GLASS BEAKERS	50 ML	8
	100 ML	4
	250 ML	50
	400 ML	36
	600 ML	24
	1,000 ML	7
	2,000 ML	1
	4,000 ML	3

STIRRING MAGNETS (29)

SEPATORY FUNNELS	60	ML--------8
	250	ML--------8
	500	ML--------5
	1,000	ML--------16
	2,000	ML--------6
VOLUMETRIC FLASKS	50	ML--------31
	100	ML--------47
	200	ML--------14
	250	ML--------17
	500	ML--------7
	1,000	ML--------23
	2,000	ML--------5
VOLUMETRIC PIPETS	0.5	ML--------10
	1.0	ML--------10
	2.0	ML--------28
	3.0	ML--------33
	4.0	ML--------12
	5.0	ML--------16
	6.0	ML--------2
	8.0	ML--------5
	10.0	ML--------39
	15.0	ML--------3
	20.0	ML--------30
	25.0	ML--------3
	50.0	ML--------31
	100.0	ML--------10
GRADUATED PIPETS	1	ML--------11
	10	ML--------18
	11	ML--------48
	25	ML--------2

STANDARD OPERATING PROCEDURES

ENVIRONMENT 1, INC. HAS ESTABLISHED GUIDELINES FOR SUCCESSFUL SAMPLE HANDLING, SAMPLE PREPARATION, ANALYSIS, QUALITY CONTROL/QUALITY ASSURANCE, DATA REDUCTION, AND DATA DISTRIBUTION. IT HAS BEEN OUR BEST EXPERIENCE IN SOME CASES TO EITHER ALTER STANDARD OPERATING PROCEDURES OR CUSTOM DESIGN A PROGRAM WHICH BEST SUITS THE STATEMENT OF WORK IN QUESTION. ANALYTICAL METHODS USED FOR THE ANALYSIS OF MONITORING WELL SAMPLES ARE TAKEN DIRECTLY FROM STANDARD METHODS AND THE EPA PROCEDURES MANUAL.

SAMPLE CONTROL EVERY SAMPLE WHICH ARRIVES AT ENVIRONMENT 1 IS LOGGED IN BY COMPUTER. THE INFORMATION INCLUDED CONTAINS PARAMETERS REQUESTED, DATE OF ARRIVAL IN THE LAB, ASSIGNMENT OF A SAMPLE ID NUMBER, PERSON'S NAME WHO CHECKED IN SAMPLE, PHYSICAL CONDITION OF SAMPLE IF ABNORMAL, AND ANY DISCREPANCIES NOTED IN LABELING OR PACKAGING. THE SAMPLE IS THEN PLACED IN PROPER STORAGE UNTIL THE ANALYST IN CHARGE OF THAT PARTICULAR TYPE OF ANALYSIS BEGINS HIS DETERMINATION.

DOCUMENT CONTROL EACH REGULAR CONTRACT CLIENT HAS IT'S OWN MASTER FILE WHERE PERTINENT INFORMATION IS KEPT INCLUDING, BUT NOT LIMITED TO, CHECK-IN SHEETS, FINISHED DATA REPORT SHEETS, COMPUTER PRINTOUTS, CORRESPONDENCE, AND ABSORPTION CURVES. WE KEEP IN SEPARATE FILES AND IN COMPUTER FILES DATA SUMMARIES, QUALITY CONTROL/QUALITY ASSURANCE DATA, AND INSTRUMENT LOGBOOK PAGES. COMPLETED ANALYSES SHEETS ARE COMPARED WITH THE CHECK-IN SHEET FOR EACH PARTICULAR SAMPLE TO INSURE ALL THE REQUESTED ANALYSES WERE PERFORMED IN ACCORDANCE WITH THE CLIENT'S WISHES. IN CERTAIN CASES ALL PERTINENT INFORMATION FOR A PARTICULAR CLIENT IS KEPT IN ONE LOCATION AS ELUDED TO ABOVE IN THE SAMPLE CONTROL SECTION.

DATA HANDLING UPON COMPLETION OF EACH SAMPLE, FINISHED RESULTS ARE SCRUTINIZED BY THE LABORATORY DIRECTOR. DURING THIS PROCESS RAW DATA COMPUTATIONS MADE BY ANALYSTS AND THE COMPUTER ARE VERIFIED, TRANSCRIPTION ERRORS ARE ELIMINATED, AND A SECOND CHECK IS MADE TO INSURE ALL REQUESTED PARAMETERS ARE PRESENT. RESULTS ARE THEN DELIVERED TO THE CLIENT IN THE NUMBER OF COPIES REQUESTED. A COPY OF EACH SAMPLE RESULT IS PLACED IN THE APPROPRIATE CLIENT FILE. DATA IS KEPT IN AN ACTIVE FILE FOR A PERIOD OF ONE YEAR AFTER WHICH IT IS PLACED IN AN INACTIVE STORAGE FILE. RAW DATA SHEETS, CALIBRATION CURVES, AND OTHER QUALITY CONTROL/QUALITY ASSURANCE MATERIAL IS ALSO KEPT IN THE SAME MANNER.

SAMPLE REPORTING STATUS ENVIRONMENT 1 HAS VARIOUS REPORTING TIMES CONSISTENT WITH EACH CLIENT'S PARTICULAR NEEDS. WE ROUTINELY REPORT ON A WEEKLY, BIWEEKLY, AND MONTHLY BASIS. IN SPECIAL INSTANCES WE REPORT ON A DAILY BASIS WHEN THE SITUATION WARRANTS. IN-HOUSE PROGRESS ON EACH SAMPLE MAY BE CHECKED AT ANY TIME BY SUMMONING THE PROPER COMPUTER SCREEN.

CALIBRATION STANDARDS IT IS THE PRACTICE OF THIS LAB TO PREPARE STANDARDS ACCORDANCE WITH THE METHODS DESCRIBED IN THE EPA METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES (MARCH, 1983), IN ADDITION, IT IS A COMMON PRACTICE TO USE FISHER CERTIFIED ATOMIC ABSORPTION STANDARD REFERENCE SOLUTIONS WHEN AVAILABLE. FRESH SOLUTIONS ARE MADE ON A FREQUENT BASIS TO INSURE RELIABILITY.

LABORATORY QC/QA OUR QUALITY CONTROL/QUALITY ASSURANCE PROGRAM IS DESIGNED TO INABLE US TO SUBSTANTIATE THE VALIDITY OF ANALYTICAL DATA. THESE PRACTICES ARE NECESSARY TO REDUCE ERRORS WHICH MAY OCCUR ; CAUSED BY ANALYTICAL METHODOLOGY, PERSONNEL, EQUIPMENT AND SUPPLIES.

ANALYTICAL METHODOLOGY ENVIRONMENT 1 USES APPROPRIATE METHODOLOGIES OUTLINED IN EPA METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES AND OTHER APPROVED SOURCES AS THE SITUATION DICTATES. STRICT ADHERENCE TO APPROVED METHODS IS A MUST TO INSURE QUALITY WORK. LABORATORY CONTROL SAMPLES ARE EXCLUSIVELY OBTAINED FROM THE EPA EMSL LOCATED IN CINCINNATI, OHIO. ALL BLANKS, AS WELL AS ALL REAGENTS AND SAMPLE DILUTIONS, ARE MADE WITH TYPE I WATER. CERTIFIED REAGENT GRADE CHEMICALS ARE USED WHEN APPROPRIATE.

PERSONNEL ALL ANALYSTS ARE THROUGHLY TRAINED FOR THEIR PARTICULAR AREA OF CONCENTRATION. THIS IS DONE REGARDLESS OF PREVIOUS EXPERIENCE TO ESTABLISH CONSISTENCY OF METHOD THROUGHOUT THE LABORATORY. WORK ASSIGNMENTS ARE CLEARLY DEFINED FOR EACH INDIVIDUAL. PERIODIC REVIEW OF PERSONNEL BY THE LABORATORY DIRECTOR ASSURES AN OPTIMUM LEVEL OF PERFORMANC AT ALL LEVELS OF OPERATION.

EQUIPMENT & SUPPLIES THIS AREA CONSISTS OF CAPITAL EQUIPMENT, SUPPORT EQUIPMENT, CHEMICALS, CLEANING OF THE PHYSICAL FACILITY AND CLEANING OF GLASSWARE. THE CAPITAL EQUIPMENT HELD BY ENVIRONMENT 1 MEETS OR EXCEEDS THE LEVELS FOR ACCURACY AND PRECISION NEEDED TO PERFORM THE TYPE OF ANALYSES REQUIRED BY THIS PARTICULAR CONTRACT. EQUIPMENT MAINTENANCE IS PERFORMED PERIODICALLY BY MANUFACTURER'S REPRESENTATIVES TO INSURE PROPER OPERATION AND CALIBRATION. THERMOMETERS ARE CHECKED AGAINST AN NBS TRACEABLE THERMOMETER. PH METERS ARE STANDARDIZED WITH TWO STANDARD BUFFERS BEFORE EACH TEST RUN. WEEKLY TESTS ARE RUN ON OUR REVERSE OSMOSIS/DEIONIZATION WATER SYSTEM TO INSURE PROPER WATER QUALITY. OVENS, INCUBATORS, REFRIGERATORS, AND AUTOCLAVES ARE TEMPERATURE MONITORED FOR PROPER OPERATION. SUPPORT EQUIPMENT SUCH AS BEAKERS, GRADUATES, PIPETS, HOT PLATES, ETC. ARE MAINTAINED IN GOOD WORKING ORDER. DAMAGED EQUIPMENT UNABLE TO SATISFACTORILY MEET ORIGINAL REQUIREMENTS IS DISPOSED OF. A GENEROUS SUPPLY OF THESE ITEMS EXIST AND ARE CONSTANTLY BEING REORDERED ON AN AS NEED BASIS. AN ORDER LIST IS POSTED IN THE OUTER OFFICE FOR ANALYSTS

TO CONVEY THEIR REQUESTS. CHEMICALS AND REAGENTS ARE HANDLED AS ABOVE. REAGENTS SENSITIVE TO EXPIRATION ARE DATED ON THE CONTAINER. ALL ITEMS RECEIVED ARE RECORDED IN A LOGBOOK REGARDLESS OF EXISTENCE OF EXPIRATION DATES. GLASSWARE FOR DIFFERENT TYPES OF ANALYSES ARE CLEANED IN ACCORDANCE WITH PRESCRIBED METHODS. THIS INCLUDES, BUT IS NOT TO, ACID WASHING AND DI WATER RINSING OF ATOMIC ABSORPTION GLASSWARE, ACID WASHING AND DI WATER RINSING OF ALL PIPETS, NON-DETERGENT CLEANING AND ACID WASHING OF PHOSPHATE DETERMINATION GLASSWARE, AND SOLVENT CLEANING OF ALL SEPATORY FUNNELS AFTER EACH USE.

LABORATORY SAFETY ALL PERSONNEL ARE INSTRUCTED TO USE SAFE LABORATORY PRACTICES AT ALL TIMES. PERSONAL PROTECTION SUCH AS GLOVES AND LAB COATS ARE PROVIDED FOR EACH EMPLOYEE. PROPER VENTILATION EXISTS THROUGHOUT THE LABORATORY WHERE APPLICABLE. FIRST AID KITS, EYE WASH STATIONS, AND FIRE EXTINGUISHERS ARE LOCATED THROUGHOUT THE LAB. GAS AND RADIATION LEAKS ARE CHECKED FOR ON A PERIODIC BASIS. AN ACID SPILL CONTAINMENT KIT IS ALSO ON THE PREMISES AS A PRECAUTIONARY MEASURE.

WASTE HANDLING/DISPOSAL PROCEDURES THE VOLUME GENERATED BY ENVIRONMENT 1 IN THE PAST HAS NOT BEEN LARGE ENOUGH TO CLASSIFY US AS A GENERATOR AS SPECIFIED IN THE RESOURCES CONSERVATION AND RECOVERY ACT . ALL WASTE PRODUCTS ARE PRESENTLY HANDLED BY THE CITY OF GREENVILLE. ON OCCASION, WE HAVE STORED WASTES GENERATED FROM PARTICULAR CLIENTS FOR THEIR DISPOSAL. ALL EPA GUIDELINES ARE FOLLOWED NOW AS WILL BE UNDER FUTURE STATUS CHANGES NECESSARY FOR THIS OR ANY OTHER CONTRACT ALLOCATION.

LABORATORY SPACE ALLOCATION

ENVIRONMENT 1 HAS SEPARATE WORK AREAS FOR SAMPLE CHECK-IN, SAMPLE PREPARATION, WET CHEMISTRY, AND ATOMIC ABSORPTION ANALYSES. EACH PARTICULAR AREA IS LISTED DESCRIPTIVELY BELOW.

SAMPLE CHECK-IN OUR RECEIVING ROOM IS LOCATED AT THE REAR DOOR OF OUR FACILITY. IT IS LOCATED AS TO ALLOW EASY ACCESS TO DELIVERY VEHICLES. 20 SQUARE FEET OF COUNTER SPACE EXISTS SOLELY FOR THIS PURPOSE.

SAMPLE PREPARATION ALL DIGESTIVE WORK IS PERFORMED UNDER A FUME HOOD. ANALYTICAL BALANCES (MOUNTED ON A BRICK PILLARS) ARE USED FOR ALL WEIGHT DETERMINATIONS. 22 SQUARE FEET OF COUNTER SPACE EXIST UNDER THE FUME HOODS. 38 SQUARE FEET OF COUNTER SPACE EXISTS ADJACENT TO THE FUME HOODS.

ATOMIC ABSORPTION ANALYSES 47 SQUARE FEET OF COUNTER SPACE EXISTS FOR ATOMIC ABSORPTION ANALYSES. A PERKIN-ELMER MODEL 4000 AA SPECTROPHOTOMETER WITH FURNACE IS PERMANENTLY LOCATED ON THIS COUNTER. STORAGE FOR STANDARDS, LAMPS, AND REAGENTS EXISTS ABOVE THE COUNTER IN THE FORM OF SHELVES.

TECHNICON ANALYSES ALL NUTRIENTS ARE ANALYZED USING A TECHNICON AUTOANALYZER. 47 FEET OF COUNTER SPACE IS ALLOCATED FOR THE TECHNICON AND IT'S SAMPLE PREPARATIONS.

WET LABS TWO SEPARATE WET LABS EXIST FOR THE DETERMINATION OF PH, PHENOL SOLIDS, CONDUCTIVITY AND VARIOUS OTHER TESTS. THERE IS APPROXIMATELY 100 FEET OF COUNTER SPACE IN EACH WET LAB.

EVEREADY CONTRACT SPECIFICS

MONITORING EQUIPMENT A STANDARD WELL BAILER (2" DIAMETER, 4' LONG) MADE OF PVC PLASTIC WITH AN INERT ROPE IS USED FOR ALL MONITORING WELL SAMPLING. SAMPLE CONTAINERS ARE EITHER SINGLE USE CUBITAINERS OR REUSEABLE NALGENE PLASTIC BOTTLES. A TAPE MEASURE IS USED TO DETERMINE WELL WATER LEVELS. A GLASS THERMOMETER TRACEABLE TO A NBS CERTIFIED THERMOMETER, WHICH IS KEPT AT THE LAB, IS ALSO USED.

SAMPLING PROCEDURES BEFORE EACH WELL IS SAMPLED, THE WATER LEVEL IS CHECKED AND RECORDED. THE BAILER IS USED TO EXTRACT APPROXIMATELY 7 GALLONS OF WATER FROM THE WELL CASING BEFORE SAMPLING. THE FIRST SAMPLE IS USED FOR THE TEMPERATURE DETERMINATION. ALL SAMPLE CONTAINERS FOR EACH WELL ARE THEN FILLED. SAMPLES ARE THEN DELIVERED TO THE LABORATORY WITHIN 40 MINUTES AFTER SAMPLING.

ANALYSIS PROCEDURES ONCE THE SAMPLES REACH THE LABORATORY THEY ARE DIVIDED INTO FILTERED AND UNFILTERED TEST TYPES. PH, TOTAL DISSOLVED SOLIDS, PHENOL, AND CONDUCTIVITY SAMPLES ARE NOT FILTERED. REAGENT GRADE SULFURIC ACID IS ADDED TO THE PHENOL SAMPLES AS A PRESERVATIVE. AMMONIA NITROGEN, CHLORIDE, SULFATE, BARIUM, CHROMIUM, COPPER, AND ZINC ARE FILTERED THRU A .45 MICRON FILTER. THE METALS ARE THEN ACIDIFIED WITH REAGENT GRADE NITRIC ACID AND THE AMMONIA NITROGEN IS ACIDIFIED WITH REAGENT GRADE SULFURIC ACID. PH AND CONDUCTIVITY SAMPLES ARE ANALYZED IMMEDIATELY UPON DELIVERY TO THE LABORATORY, THE OTHER PARAMETERS ARE ANALYZED WITHIN EPA ESTABLISHED HOLDING TIMES.

MEMO.

DATE: 10-15-86

TO: Jim/File

SUBJECT: Union Carbide
Starling Farm

Richard Gay is aware of activities at this site. He will forward info to DEM-GW as soon as he gets further info, analyses, reports, etc. from Law Engineering and Union Carbide. WAH has also requested Law to provide us with GW info.

Rich P.

North Carolina Department of Natural Resources & Community Development

4-22-70

A) Permit #1791 issued, NO MENTION OF SLUDGE DISP.

12-30-71

A) Letter from E.C. Hubbard (Ast. Dir.) to Plant Mgr, F.T. Motsinger granting extension of Permit #1791 to 12-31-72. Sludge disposal conditions outlined in letter reference [Motsinger to Coburn 12-6-71]

12-22-72

A) Letter from F.S. Long (Eastern Regional Chemist) to A.C. Turnage reccommending extension of Permit #1791 to 12-31-75

12-29-72

A) Letter granting extension to 12-31-75 from Ast. Dir. Hubbard to F.T. Motsinger (Plt. Mgr.)

12-3-75

A) Letter of extension from Lewis Martin to Mr. H.J. Taylor (Union Carbide). Validates Permit #1791 until 12-31-80

7-1-85

A) Letter of summary, after a meeting with Najib Habiby of Union Carbide and Richard Powers (DEM-GW), discussing monitor well sampling and reporting to DEM-GW.

9-9-85

A) Letter requesting results of sampling - Powers to Habiby

9-17-85

A) Letter from R.W. Gibbs (Env. Co-Ord) stating sampling delayed and change of personell. Mr. Gibbs will act as environmental contact.

3-27-86

A) Well data and construction specifications for Monitor Wells #11 #12 received from Mr. Gibbs.

10-13-86

A) Note from Jim Mulligan inquiring about barrels of waste(?) placed on Starling Farm site in spring 1985 by David Starling.
±100 Barrels supposed to be Union Carbide by-product [inert, pH 7.0] on ground.

EVEREADY BATTERY COMPANY, INC.

P.O. BOX 1547
GREENVILLE, NORTH CAROLINA 27834
(919) 756-2171

October 17, 1986

Environmental Management Division
Groundwater Section
P. O. Box 27687
Raleigh, N. C. 27611

Attention: Mr. Bob Cheek

Re: Compliance Monitoring Report Form for the Starling Farm, Farmville, N.C. dated August 26, 1986

Mr. Richard Powers of your Washington, N. C. office brought to my attention on October 15, 1986 the high reading of Cadmium at well #1 on the above mentioned report. After a closer review of the results from Environment I I have discovered an error in our recording of the numbers. The number on the above report for Calcium (0.0051 mg/l) and for Cadmium (0.048 mg/l) should in fact be for Chromium: Total (0.0051 mg/l) and for Copper (0.048 mg/l). There was no analysis done for Calcium and Cadmium. Please refer to the attached Results of Analysis from Environment I, dated 7/28/86 to verify the above corrections. Also, please find attached the blue and green copies of the Revised Compliance Monitoring Form, dated 10/17/86 that reflects the correct readings for Chromium and copper at well #1.

I sincerely apologize for any inconveniences this may have caused you. If you have questions or comments please advise.

Very truly yours,

Russell W. Gibbs

Russell W. Gibbs

RWG/wjb

Attachment

cc: J. M. Maxon
T. K. Cagle
H. R. Reece
A. M. Nash - R.R.
J. T. Houser - R.R.
Richard Powers - N.C. Dept. of Natural Resources

COMPLIANCE MONITORING REPORT FORM

*Revised 10/17/86

Environmental Management Division
Groundwater Section
P.O. Box 27687
Raleigh, N.C. 27611
(919)733-5083

Facility Name: Eveready Battery Co. Inc.
Address: P. O. Box 1547
Greenville, N. C. 27834
Well Location: Starling Farm, Farmville, N. C.
Well Identification Number: #1 Well Depth: 25 Ft.
Well Diameter: 2" Sample (Screened) Interval: 4 Ft. To: 24 Ft.
Depth to Water Level: 7.67 ft. below measuring point. (before sampling)
Measuring point is: 0.0 feet above land surface
Gallons of water pumped bailed before sampling: 7

County: Pitt
Permit Number: Variance by R.E. Helms 3/18/83
Non-Discharge:
NPDES:
Water Use:
Injection Well:
Well Construction:
Other:

Field Analysis: pH: ____ Specific Conductance: ____ uMhos Temp.: 18 °C Odor: None Appearance: Tan
Date Sample Collected: 7/28/86 Date Lab Sample Analyzed: 7/28/86
Laboratory Name: ENVIRONMENT I Certification No.: 10

COD	mg/l	NO_2 as N	mg/l	Ni - Nickel	mg/l
Coliform: MF Fecal	/100ml	NO_3 as N	mg/l	Pb - Lead	mg/l
Coliform: MF Total	/100ml	Phosphorus: Total as P	mg/l	Zn - Zinc 0.174	mg/l
Dissolved Solids: Total 225	mg/l	Al - Aluminum	mg/l	Pesticides/Herbicides (Specify Compounds)	
pH (when analyzed) 4.3	units	Ba - Barium 0.183	mg/l		ug/l
TOC	mg/l	Ca - Calcium	mg/l		ug/l
Chloride 43	mg/l	Cd - Cadmium	mg/l		ug/l
Arsenic	mg/l	Chromium: Total *0.0051	mg/l	Other (Specify)	ug/l
Grease and Oils	mg/l	Cu - Copper *0.048	mg/l		ug/l
Hardness: Total	mg/l	Fe - Iron	mg/l		ug/l
Phenol 0.006	mg/l	Hg - Mercury	mg/l		ug/l
Sulfate 85	mg/l	K - Potassium	mg/l		ug/l
Specific Conductance 316	uMhos	Mg - Magnesium	mg/l		ug/l
Total Ammonia (NH_3 + NH_4) 0.51	mg/l	Mn - Manganese	mg/l		
TKN as N	mg/l	Na - Sodium	mg/l		

Note:
Values should reflect total concentrations

I CERTIFY THAT THIS REPORT IS TRUE AND ACCURATE.

[signature] 10/17/86
SIGNATURE OF PERMITTEE (OR AUTHORIZED AGENT *) DATE

* See back for instructions
** Submit blue and green copies to address above.

GW-59 Revised 7/85

Environment 1, Incorporated

BOX 7085
GREENVILLE, N.C. 27835-7085

114 OAKMONT DRIVE
PHONE (919) 756-6208

0151

STARLING FARM
EVEREADY
MR. RUSSELL GIBBS
P.O. BOX 1547
GREENVILLE, NC 27834

RESULTS OF ANALYSES FOR:

EVEREADY

DATE: 07/28/86

CERTIFIED BY:

PARAMETERS	WELL #1	WELL #2	WELL #3	WELL #4	WE #1
PH, Units	4.3	4.3	5.6	6.4	5.
AMMONIA NITROGEN, mg/l	0.51	0.06	0.09	10.8	0.8
PHENOL, ug/l	6	8	6	14	5
CHLORIDE, mg/l	43	20	60	37	74
TOTAL DISSOLVED RESIDUE, mg/l	225	63	241	902	131
BARIUM, ug/l	183	119	307	289	53
COPPER, ug/l	48	44	12	56	6.
TOTAL CHROMIUM, ug/l	5.1	2.3	1.6	11	<
ZINC, ug/l	174	<10	22	29	1
SULFATE, mg/l	85	7.0	6.0	155	3.
CONDUCTIVITY, uMhos	316	82.3	278	1282	156

Environment 1 Incorporated

BOX 7085
GREENVILLE, N.C. 27835-7085

114 OAKMONT DRIV
PHONE (919) 756-620

0151

STARLING FARM
EVEREADY
MR. RUSSELL GIBBS
P.O. BOX 1547
GREENVILLE, NC 27834

RESULTS OF ANALYSES FOR:

EVEREADY

DATE: 07/28/86

CERTIFIED BY: Thos F Hu

PARAMETERS	WELL #12
PH, Units	5.7
AMMONIA NITROGEN, mg/l	0.15
PHENOL, ug/l	8
CHLORIDE, mg/l	16
TOTAL DISSOLVED RESIDUE, mg/l	88
BARIUM, ug/l	78
COPPER, ug/l	25
TOTAL CHROMIUM, ug/l	1.0
ZINC, ug/l	<10
SULFATE, mg/l	20
CONDUCTIVITY, uMhos	112.9

State of North Carolina
Department of Natural Resources and Community Development
Northeastern Region
1424 Carolina Avenue, Washington, North Carolina 27889

James G. Martin, Governor
S. Thomas Rhodes, Secretary

Lorraine G. Shinn
Regional Manager

DIVISION OF ENVIRONMENTAL MANAGEMENT
December 19, 1986

Mr. Albert M. Nash
Eveready Battery Company, Inc.
20575 Center Ridge Road
Rocky River, Ohio 44116

Dear Mr. Nash:

Thank you for the information you gave me at our November 3rd meeting. We now have a better understanding of the Starling Farm site.

The actual site looked to be adequately maintained, and the monitor wells are constructed as per state standards. If the PVC standpipes have served their purpose, they should be removed and the resulting holes filled. Consideration should be given to abandonment of the deeper wells to the southeast of the disposal area if no future use by the property owner is planned. This would not be because of concern over the disposal site but, rather, just good practice.

During our meeting, the Law Engineering schedule of planned tasks was discussed. I would recommend that this schedule be followed, with review of the contingency plan to include my office. Please send me a copy of the schedule's revised dates when available.

As we discussed, although there are no active permits for the site nor the need for any, the state's groundwater quality standards (enclosed) do govern this site. As such, the quality of the water should be monitored as per my September 9, 1985 letter. My section will work with Eveready to determine the flag points for the implementation of the contingency plan.

Overall, I see the work done at this site to be proper and showing Eveready's commitment to ensuring protection of the local groundwaters.

If I can be of any further assistance, please contact me at (919) 946-6481.

Sincerely,

Richard R. Powers
Hydrogeological Technician

RRP:mgr

Enclosures

cc: Bob Cheek, Raleigh Central Office
Russell Gibbs, Eveready Battery Co., Greenville, NC
Steve Jones, Environment One, Greenville, NC

DIVISION OF ENVIRONMENTAL MANAGEMENT

July 1, 1985

Mr. Najib E. Habiby
Union Carbide Company
P.O. Box 1547
Greenville, North Carolina 27834

Dear Mr. Habiby:

This letter is to summarize our meeting of June 23, 1985 in which I outlined groundwater monitoring requirements at the Starling Farm site. Starting as soon as practical from July, the four (possibly to include two additional deep wells) monitoring wells shall be sampled tri-annually in March, July, and November. An analysis of those samples shall be made to include the following parameters:

A) In the field, or within a short period of time after sampling:

Water levels (prior to pumping or bailing)
pH
Specific conductance
Temperature
Odor
Appearance

B) From a state certified laboratory:

Total ammonia
pH
Chlorides
Sulfates
Total dissolved solids
Barium
Chromium
Copper
Zinc
Phenols

A draft Compliance Monitoring Report form is included for your use until I can send you the final form. This form should be used to report the results

of analyses to us.

A tabulation report of the four (or six) wells you will be monitoring will eliminate any confusion over well identification numbers, depths, etc. The wells can be identified on a site diagram and the technical details reported on the GW-1 Well Record forms I gave you.

Please contact me if I can be of any assistance or help.

Sincerely,

for Richard R. Powers
Hydrologic Technician

RRP:mgr
Enclosures: Compliance Monitoring Report Forms

DIVISION OF ENVIRONMENTAL MANAGEMENT

September 9, 1985

Mr. Najib E. Habiby
Union Carbide Company
P.O. Box 1547
Greenville, North Carolina 27834

Dear Mr. Habiby:

On June 23, 1985, I met with you at your plant to discuss groundwater monitoring at the Starling Farm site. At that time, we agreed to postpone sampling of the four wells due to vacations and the need to assemble sampling equipment. It was also agreed that sampling and analysis would be performed in August instead of July.

This letter is to inquire if the August samples have been taken. You will remember that the parameters to be analyzed are:

A. In the field:
   - Water levels (prior to pumping or bailing)
   - pH
   - Specific Conductance
   - Temperature
   - Odor
   - Appearance

B. From a state certified laboratory:
   - Total Ammonia
   - pH
   - Chlorides
   - Sulfates
   - Total dissolved solids
   - Barium
   - Chromium
   - Copper
   - Zinc
   - Phenols

I have enclosed copies of the final "Compliance Monitoring Report Form" on which the results of the sampling should be reported to my office. Please use one form per well, with the blue and green copies to be sent to the Raleigh address at the top of the form.

If I can be of any assistance, please contact me at the Washington office (919/946-6481).

added: set of forms

Thank you,

RRP

Richard Powers
Hydrogeologic Technician

RRP:mgr
Enclosures
cc: Bob Cheek
Files

UNION CARBIDE CORPORATION
P. O. BOX 1547, GREENVILLE, NORTH CAROLINA 27834
Battery Products Division

September 17, 1985

Mr. Richard Powers
Department of Natural Resources and Community Development
1502 North Market Street
Washington, N. C. 27889

Dear Mr. Powers:

We have received your letter of September 9, 1985 concerning follow-up of groundwater monitoring at the Starling Farm site.

By way of this letter please be advised that Mr. Najib E. Habiby is no longer with the Corporation and future correspondence should be directed to me.

During the course of change in personnel sampling has been delayed. We have, however, made contact with a local state certified laboratory, Environment I, and sampling will be done immediately. It may take several weeks for the analyses to be performed, but we will expedite where practicable and have results to you as soon as possible.

We apologize for any delays in the sampling that were previously agreed upon and trust that our renewed efforts will meet with your approval.

Very truly yours,

R. W. Gibbs
Environmental Coordinator

RWG/wjb

cc: A. M. Nash - R.R.
J. M. Maxon/J. B. McClintock
H. A. Allen
T. K. Cagle
H. R. Reece

UNION CARBIDE CORPORATION
P. O. BOX 1547, GREENVILLE, NORTH CAROLINA 27834
Battery Products Division

November 28, 1984

Mr. Richard R. Powers
North Carolina Dept. of Natural and Economic Resources
P. O. Box 1507
Washington, N.C. 27889

Dear Mr. Powers:

Please find attached the information you requested on the Starling Farm Site. Attachments include:

1) Law Engineering letter to Russell W. Gibbs, dated November 13, 1984

2) Well Data Tabulation Sheet

3) Topography of Site Area

4) General Sludge Disposal Area and Layout of Borings

5) Results of Chemical Analyses - Ground Water

6) Mr. Robert Helms' letter to Mr. W. J. Alexander of Law Engineering, dated March 18, 1983.

If you have questions please direct them to Mr. A. M. Nash, Divisional Environmental Coordinator at Rocky River, Ohio (216-333-0500).

Very truly yours,

Russell W. Gibbs

RWG/wjb

Attachments

cc: A. M. Nash - Rocky River
J. M. Maxon/J. B. McClintock
T. K. Cagle
H. R. Reece/N. E. Habiby

LAW ENGINEERING TESTING COMPANY
geotechnical, environmental & construction materials consultants
2749 DELK ROAD, S.E.
MARIETTA, GEORGIA 30067
(404) 952-9005

November 13, 1984

Union Carbide Corporation
Battery Products Division
P.O. Box 1547
Greenville, North Carolina 27834

Attention: Mr. Russell W. Gibbs

Subject: Starling Farm Well Data Tabulation
Law Engineering Project No. MH-2303/MA-4281

Dear Mr. Gibbs:

Enclosed is the completed "Well Data Tabulation" which you transmitted to us in your letter of November 5, 1984. I have searched the job files for the filter sand and grout depths and cannot find any data.

Attached to the well data tabulation are the following:

- Figure for site location
- Figure for well/pollution source location
- Table of ground-water chemical analyses
- Letter approving variance from NCDNR well permitting

I know of no sampling schedule for these wells.

Please advise if you have any questions.

Very truly yours,

LAW ENGINEERING TESTING COMPANY

James D. Gustin

James D. Gustin, P.G.
Project Manager

DIVISION OF ENVIRONMENTAL MANAGEMENT
GROUNDWATER SECTION
September 19, 1984

Mr. W.J. Alexander, P.G.
Law Engineering Testing Company
2749 Delk Road, SE
Marietta, Georgia 30067

Dear Mr. Alexander:

This is a request for well completion reports and associated data from your company's work at the Union Carbide Corporation's disposal site near Farmville. As you may know, the Department requires a well record form to be completed and submitted for any well constructed in the state. A recent review of our data files indicates that we have not received these records.

I have enclosed six (6) blank forms for your use and would like for these to be submitted to me here at the regional office. I will process them and forward them to our central office in Raleigh.

If I may be of any assistance, please contact me.

Sincerely,

RRP

Richard R. Powers
Hydrologic Technician II

Attachments

cc: Lee Layman
Files

North Carolina Department of Natural Resources & Community Development

James B. Hunt, Jr., Governor Joseph W. Grimsley, Secretary

DIVISION OF ENVIRONMENTAL MANAGEMENT
Robert F. Helms
Director

Telephone 919 733-7015

March 18, 1983

Mr. W. J. Alexander, P.G.
Law Engineering Testing Company
2749 Delk Road, S.E.
Marietta, Georgia, 30067

Dear Mr. Alexander:

Reference is made to your request on behalf of the Union Carbide Corporation for a variance to 15 NCAC 2C .0108(b)(2) for the construction of six (6) permanent observation wells to be located on their disposal site near Farmville, Pitt County.

Permission is granted to construct the observation wells at the facility in variance to 15 NCAC 2C .0108(b)(2) based on the following conditions:

1. The entrance into each wall casing shall be secured with a lockable top and lock.

2. Each well shall be labeled to show that it is for monitoring only and not to be used for drinking purposes.

If you have any questions or require any additional information concerning this matter, please contact Jim Mulligan, Regional Supervisor, or Bill Jeter, Regional Hydrologist, Washington Regional Office, PO Box 1507, Washington, NC 27889, telephone 919/946-6481.

Sincerely yours,

for Robert F. Helms
Director

cc: Washington Regional Office

North Carolina Department of Natural Resources & Community Development
James B. Hunt, Jr., Governor
Joseph W. Grimsley, Secretary

DIVISION OF ENVIRONMENTAL MANAGEMENT
Robert F. Helms
Director
Telephone 919 733-7015

March 18, 1983

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Law Engineering Testing Company
2749 Delk Road, S.E.
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If you have any questions or require any additional information concerning this matter, please contact Jim Mulligan, Regional Supervisor, or Bill Jeter, Regional Hydrologist, Washington Regional Office, PO Box 1507, Washington, NC 27889, telephone 919/946-6481.

Sincerely yours,

for Robert F. Helms
Director

cc: Washington Regional Office

LAW ENGINEERING TESTING COMPANY
geotechnical, environmental & construction materials consultants
2749 DELK ROAD, S.E.
MARIETTA, GEORGIA 30067
(404) 952-9005

March 1, 1983

Mr. William Jeter
North Carolina Department of
Natural Resources & Community Development
Division of Environmental Management-Ground Water
P. O. Box 1507
Washington, NC 27889

Subject: Variance Request
Shallow Monitoring Wells
Law Engineering Project No. MH2303

Dear Mr. Jeter:

We would like to obtain a variance from the North Carolina Administrative Code related to well construction standards. The specific standard is found under Title 15, sub-chapter 2C, Article .0008(b) (2) for the installation of wells other than for water supply. We wish to install approximately four to six shallow ground-water quality monitoring wells near a closed waste disposal site being studied by Law Engineering for Union Carbide Corporation. The site is near Farmville, NC. These wells will be used for monitoring purposes related to site closure considerations.

The wells will be installed in the uppermost aquifer to obtain small amounts of ground water for water quality analysis and will not be used for water supply. The uppermost aquifer at the site is shallow, therefore we anticipate that the wells will not be more than twenty feet deep. The wells will be constructed in the following manner:

1. As these wells are to be used to obtain water quality samples PVC plastic will be used and no glues, cutting oils, or grease will be allowed in their construction (Figure 1). All screens and casings will be clean before set in the ground.

2. The screen will consist of schedule 40 PVC plastic of a standard design and manufactured specifically for the purpose of monitoring well construction. The bottom of the screen will be covered with a solid end cap. To prevent clogging and insure that sand grains and fines in the aquifer do not enter the monitoring well, a slot size of 0.001 inch will be used. Screen length will vary between five (5) and ten (10) feet based on aquifer thickness and the very limited amount of water required for sampling purposes.

3. Well casing consisting of solid schedule 80 PVC plastic pipe will be attached to the well screen by means of a schedule 80 PVC plastic threaded coupling. The casing will be topped with a threaded PVC plastic end cap. Casing length cannot be more than five (5) to ten (10) feet to insure that the well screen will be set in the shallow uppermost aquifer.

4. A gravel pack of clean, rounded, uniform, water-washed quartz sand will be placed around the screen and sealed above with a one (1) to two (2) foot thick bentonite clay seal. Cement grout of proper mixture will then be pumped into the annular space between the casing and the formation in an approved manner until completely filled.

5. The shallowness of the aquifer will necessitate that the thickness of the grout plug be between about 10 feet thick. (Figure 1).

6. All wells will be two inches in diameter as the amount of water required for testing will be small. The monitoring wells will be pumped or bailed to obtain a representative sample.

We ask for your consideration of a variance in the near future. We have scheduled to install these wells around the first of April, 1983.

On a separate issue, you may recall from our discussion several months ago my inquiry for hydrogeologic data that may be available near this site. We are still interested in receiving specific data (well locations, construction details, water levels, subsurface descriptions, or hydraulic test results) within approximately a four mile radius of the site (latitude 35° 38.5'N; longitude 77° 37.7'W).

Thank you for your consideration. We look forward to your reply and would be happy to answer any questions you may have.

Sincerely,

LAW ENGINEERING TESTING COMPANY

W. Joseph Alexander

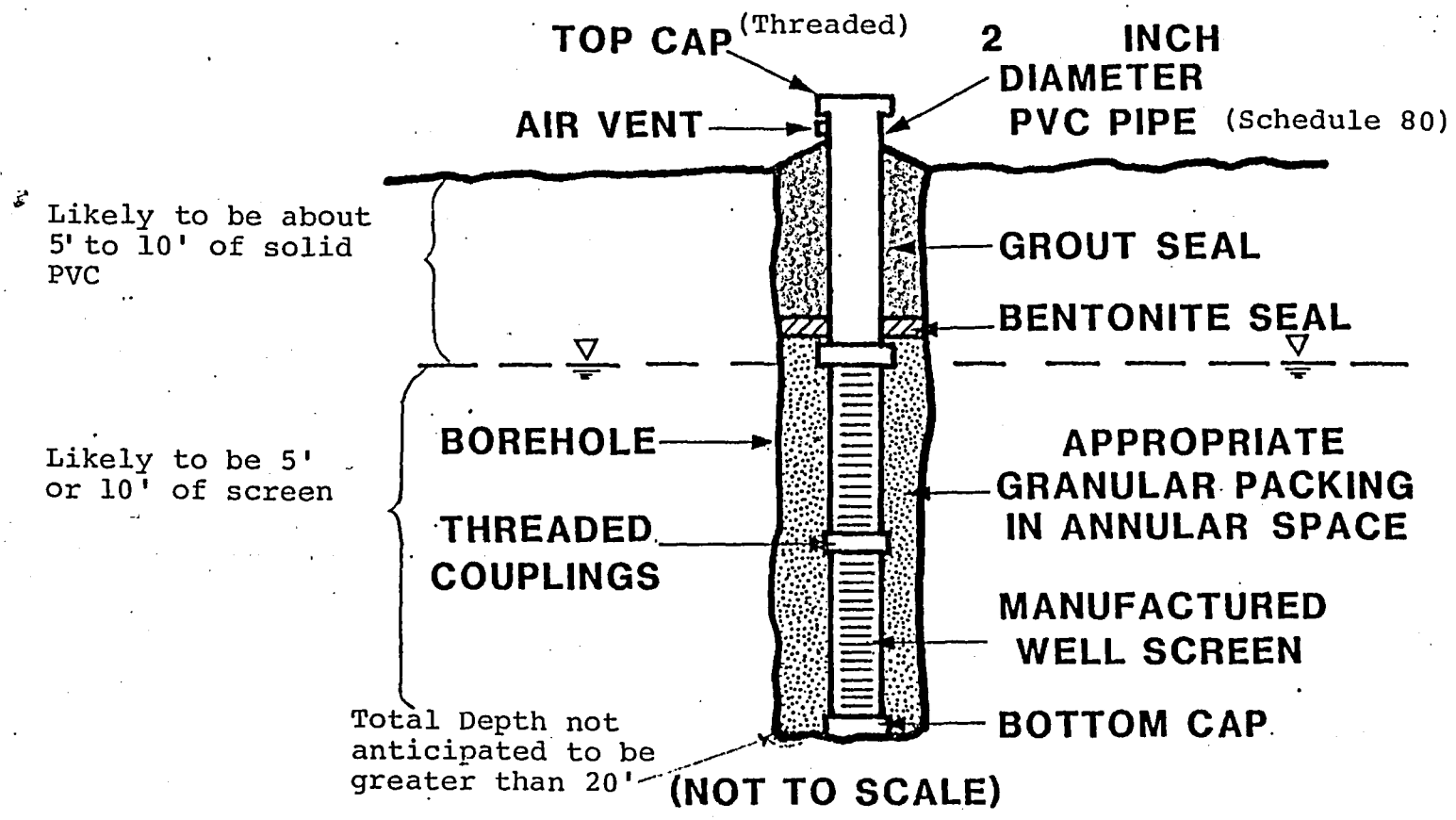
W. Joseph Alexander, P.G.
Senior Hydrogeologist

WJA:cb

cc: Mr. A.M. Nash
Mr. G.A. Babcock

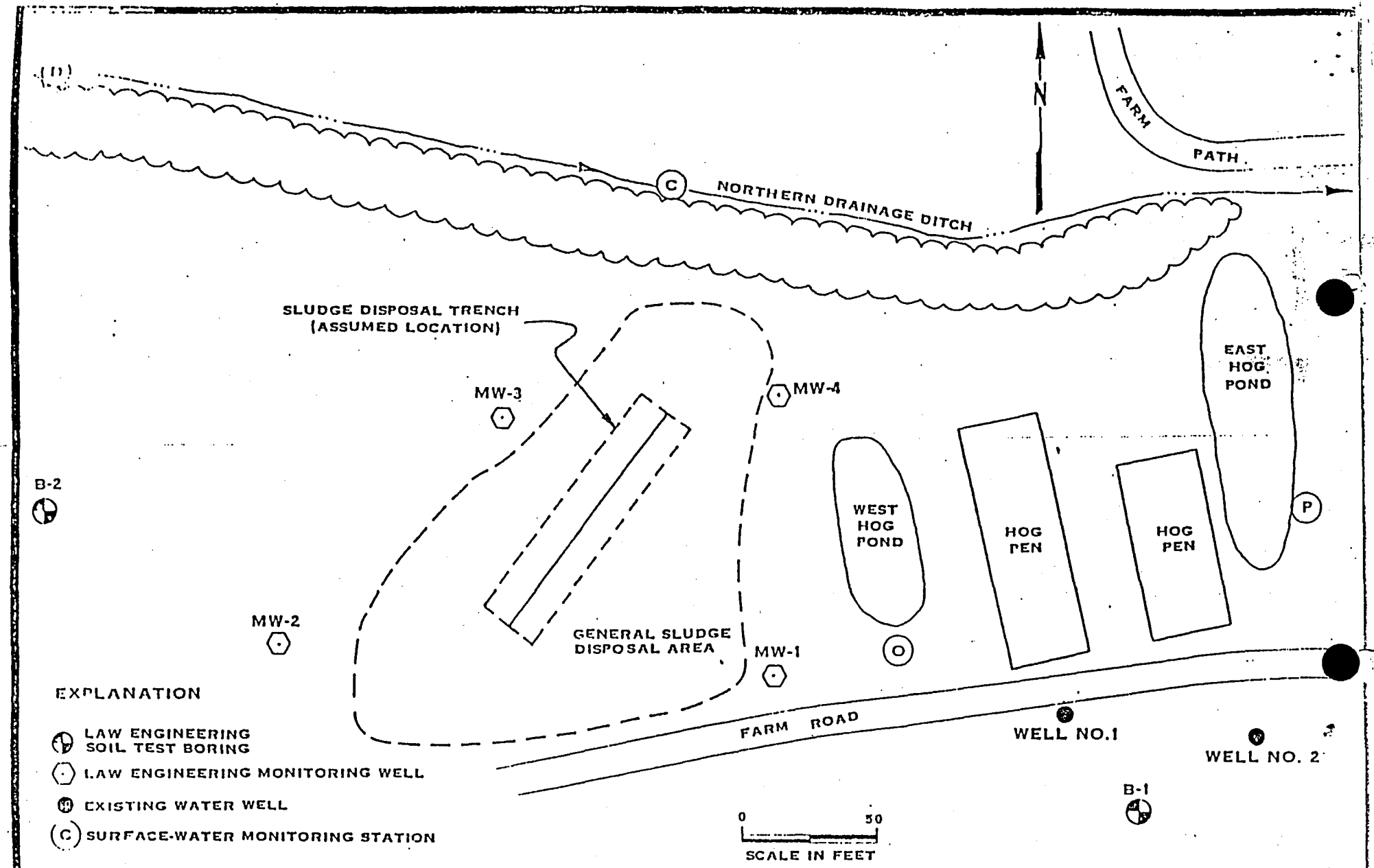
Attachment

LAW ENGINEERING TESTING COMPANY



NOTE: The actual design of the monitoring well will be based upon subsurface conditions encountered.

UNION CARBIDE CORPORATION	LAW ENGINEERING TESTING COMPANY MARIETTA, GEORGIA	SCHEMATIC OF MONITORING WELL FIGURE 1



UNION CARBIDE CORPORATION

DAVID STARLING DISPOSAL SITE

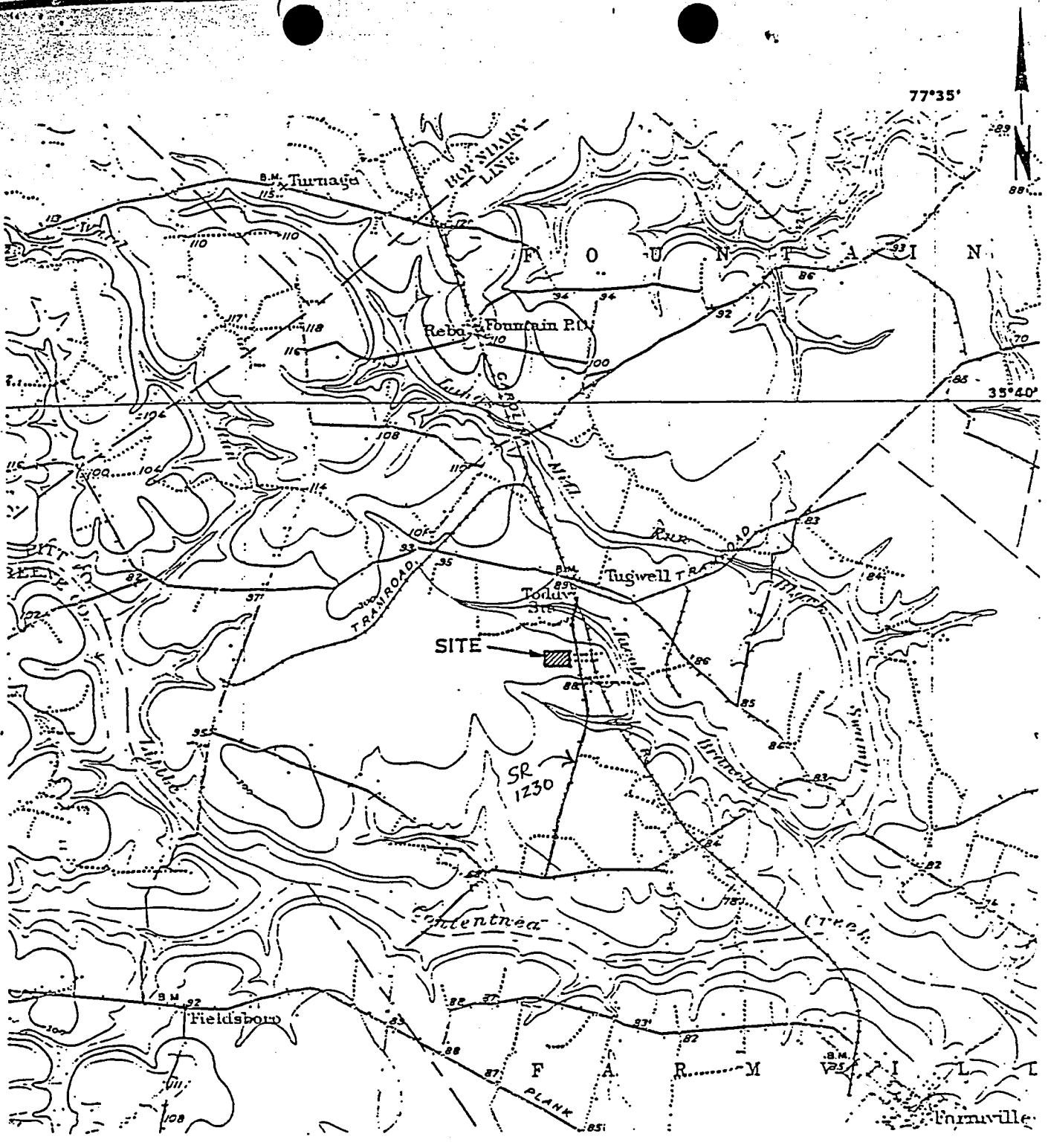
LAW ENGINEERING TESTING COMPANY

MARIETTA, GEORGIA

GENERAL SLUDGE DISPOSAL AREA AND LAYOUT OF BORINGS

JOB NO. MH2303

FIGURE 3



MODIFIED AFTER FALKLAND, N.C. 1904 15 MINUTE QUADRANGLE

UNION CARBIDE CORPORATION DAVID STARLING DISPOSAL SITE	LAW ENGINEERING TESTING COMPANY MARIETTA, GEORGIA	TOPOGRAPHY OF SITE AREA JOB NO. MH2303 FIGURE 2

1914

December 8, 1975

Mr. H. J. Taylor
Consumer Products Division
Union Carbide Corporation
P. O. Box 1547
Greenville, North Carolina 27834

SUBJECT: Extension of
Permit No. 1791

Dear Mr. Taylor:

An inspection of the Union Carbide chromium wastewater treatment facility has been made by personnel of this department. The capacity of the facility is 80,000 gpd with the treated effluent going into the Greenville sewerage system.

The inspection indicated the following:

(1) The facility has not been operated since November 10, 1975, but may be placed back in service at any time if the company's operations result in production of those items that produce chrome wastes.

(2) Mr. Wadie Lewis, Superintendent of Water and Sewer for Greenville, North Carolina, advises that the treated effluent has no adverse effect on operations at the municipal treatment plant.

Based on this inspection, Permit No. 1791 is hereby extended from December 31, 1975, to December 31, 1980, subject to the same conditions and limitations as specified in the original permit. Also, this permit extension is subject to conditions of sludge disposal as stated by Mr. F. T. Notsinger to Mr. D.L. Coburn by letter dated December 6, 1971.

Sincerely yours,

Original Signed by
LEWIS R. MARTIN
Lewis R. Martin

cc: L. P. Benton, Jr.
Robert Carter
Northeastern Field Office

STATE OF NORTH CAROLINA
DEPARTMENT OF NATURAL AND ECONOMIC RESOURCES
Raleigh 27611

ROBERT W. SCOTT
GOVERNOR

Box 27687
CHARLES W. GW, JR.
SF

Office of Water and Air Resources
GEORGE E. PICKETT, DIRECTOR
TELEPHONE 829-3003

December 22, 1972

MEMORANDUM TO: Mr. A. C. Turnage, Jr., Regional Engineer
Eastern Regional Office

FROM; F. S. Long, Chemist
Eastern Regional Office

SUBJECT: Extension of Permit No. 1791, Union Carbide Corporation, Pitt County

With regard to the subject matter, the Union Carbide Chromium treatment plant was inspected on October 23, 1972, which resulted in the following conclusions:

1. The daily average flow at present is 29,000 g.p.d. The design flow is 80,000 g.p.d.

2. Grab sample at last manhole leaving plant
   Hexauzlent Chromium - 0.11 mg/1
   Total Chromium - 0.38 mg/1
   Barium - 26 mg/1

3. The treated effluent goes into the Greenville sewerage system, via the waste treatment plant and into the Tar River.

4. A daily log by Union Carbide is kept on effluent concentrations of Hexauzlent Chromium.

5. No violations of stream classifications have been reported below the Greenville waste treatment plant discharge.

In view of the above, I would recommend that Permit No. 1791 be extended from December 31, 1972 to December 31, 1975.

FSL/bfh

STATE OF NORTH CAROLINA
DEPARTMENT OF NATURAL AND ECONOMIC RESOURCES

Box 27687 Raleigh 27611

ROBERT W. SCOTT
GOVERNOR

CHARLES W. BRADSHAW, JR.
SECRETARY

Office of Water and Air Resources
GEORGE E. PICKETT, DIRECTOR
TELEPHONE 829-3003

December 29, 1972

RECEIVED
Eastern Regional Office
JAN 5 1973
Water Pollution Control Division

Mr. F. T. Motsinger, Plant Manager
Union Carbide Corporation
P. O. Box 1547
Greenville, North Carolina 27834

SUBJECT: Extension of Permit No. 1791
Union Carbide Corporation
Pitt County

Dear Mr. Motsinger:

An inspection of the Union Carbide Corporation chromium wastewater treatment facility has been made by personnel of this Department. The capacity of the facility is 80,000 gpd with the treated effluent going into the Greenville sewerage system.

The inspection indicated:

(1) The present daily flow is 29,000 gpd.

(2) The final effluent is treated to an acceptable degree.

(3) At present the plant effluent is not detrimental to the Greenville sewerage system or the Tar River.

Based on this inspection and review of the subject matter, Permit No. 1791 is hereby extended from December 31, 1972, to December 31, 1975, subject to the same conditions and limitations as specified in the original Permit.

Sincerely yours,

E. C. Hubbard
Assistant Director

FSL/bfb
cc: Mr. H. J. Taylor
Pitt County Health Department
Mr. A. C. Turnage, Jr.
Technical Services
Engineering Branch

DIVISION OF AIR QUALITY | DIVISION OF WATER MANAGEMENT | DIVISION OF WATER QUALITY | DIVISION OF GROUND WATER | DIVISION OF WATERWAYS & SEASHORE | DIVISION O PLANNING

Steve Fl... enter Extension ... and Street ...

Recorded ...

December 30, 1971

Mr. F. T. Motsinger, Plant Manager
Union Carbide Corporation
P. O. Box 1547
Greenville, North Carolina 27834

SUBJECT: Extension of Permit No. 1791
Union Carbide Corporation
Pitt County

Dear Mr. Motsinger:

An inspection of the Union Carbide chromium wastewater treatment facility has been made by personnel of this Department. The capacity of the facility is 80,000 gpd with the treated effluent going into the Greenville sewerage system.

The inspection indicated:

(1) The present daily flow is 29,000 gpd.

(2) The final effluent is treated to an acceptable degree.

(3) The plant is properly operated and maintained.

(4) At present the plant effluent is not detrimental to the Greenville sewerage system or the Tar River.

Based on this inspection and review of the subject matter, Permit No. 1791 is hereby extended from December 31, 1971, to December 31, 1972, subject to the same conditions and limitations as specified in the original Permit. Also, this Permit extension is subject to conditions of sludge disposal as stated by you to Mr. D. L. Coburn, Chief, Water Quality Division, by letter dated December 6, 1971.

Sincerely yours,

E. C. Hubbard
Assistant Director

cc: Mr. H. S. Taylor
Pitt County Health Dept.
Mr. T. F. Armstrong
Mr. F. S. Long

FSL:llh

5-4-70 WA

Dare County

STATE OF NORTH CAROLINA
DEPARTMENT OF WATER AND AIR RESOURCES

GEORGE E. PICKETT, DIRECTOR
TELEPHONE 829-3003
E. C. HUBBARD, ASST. DIRECTOR
TELEPHONE 829-3006
RALEIGH, N. C. 27611
P. O. Box 27048

IN REPLYING REFER TO:
WP70CAW

April 22, 1970

RECEIVED
Eastern Regional Office
MAY 4 1970
Water Pollution Control
Division

Mr. F. P. Preissle, Vice President
Consumer Projects Division
Union Carbide Corporation
P. O. Box 2837
Rocky River, Ohio 44116

SUBJECT: Permit No. 1791
Union Carbide Corporation
Greenville, North Carolina

Dear Mr. Preissle:

In accordance with your application dated March 17, 1970, we are forwarding herewith Permit No. 1791, dated April 22, 1970, to the Union Carbide Corporation, Greenville, North Carolina, for the construction and operation of an 80,000 G.P.D. prefabricated, proprietary method, chromium waste removal unit, with the treated effluent going into the Greenville sewerage system.

This permit shall be effective from the date of its issuance until December 31, 1971, and shall be subject to the conditions and limitations as specified therein.

One (1) set of the approved plans is being returned to you.

Sincerely yours,

E. C. Hubbard
E. C. Hubbard
Assistant Director

Enclosures
cc: Mr. T. F. Armstrong
bc: Mr. C. R. Smart
Mr. C. A. Wright
Mr. J. Taylor

NORTH CAROLINA
BOARD OF WATER AND AIR RESOURCES
RALEIGH

PERMIT

For the Discharge of Sewage, Industrial Wastes, or Other Wastes

In accordance with the provisions of Article 21 of Chapter 143, General Statutes of North Carolina as amended, and other applicable Laws, Rules and Regulations

PERMISSION IS HEREBY GRANTED TO
Union Carbide Corporation
Greenville, North Carolina

FOR THE

construction and operation of an 80,000 G.P.D. prefabricated, proprietary method, chromium waste removal unit, with the treated effluent going into the Greenville sewerage system,

in accordance with the application dated March 17, 70, and in conformity with the plans, specifications, and other supporting data, all of which are filed with the Department of Water and Air Resources and are considered a part of this Permit.

+975 1950

This Permit shall be effective from the date of its issuance until December 31, ~~1971~~, and shall be subject to the following specified conditions and limitations:

1. This permit shall become void unless the facilities are constructed in accordance with the approved plans, specifications, and other supporting data and are completed and placed in operation on or before July 1, 1970, or as this date may be amended.

2. This permit is effective only with respect to the nature and volume of wastes described in the application and other supporting data.

3. The facilities shall be maintained in a satisfactory manner.

4. This permit shall be valid only during the time that the agreement between the City of Greenville and the Union Carbide Corporation remains in full force.

5. The wastes collected by the connecting sewer shall be adequately treated in the City of Greenville Municipal Plant prior to being discharged into the Tar River.

Permit issued this the 22nd day of April, 70

By E. C. Hubbard
E. C. Hubbard, Assistant Director
Department of Water and Air Resources

Permit No. 1791

5-31-85

TO: Lee Crosby

FROM: Mark Durway

SUBJECT: Wilkinson Farm Battery Site and David Starling Property

Richard Gay phoned several days ago to say that he'd been contacted by a lawyer regarding David Starling Property in Farmville (VC D003185311) The lawyer is representing a woman who lives in the area; she had a complaint about Starling's LOFL.

Note in the starling file that Union Carbide has ~~action~~ remedial a schedule for remedial action at this site. It is my understanding that implementation of their remedial action plan is underway at present.

Concerning another site involving Union Carbide, Terry Dover indicated today that Wilkinson Farm was still a problem. From previous communication w Al Nash (UCC) I gather they'd clean this site up if pushed a little.

5-31-85

TO: Lee Crosby

FROM: Mark Derway

SUBJECT: Wilkinson Farm Battery Site and David Starling Property

Richard Gay phoned several days ago to say that he'd been contacted by a lawyer regarding David Starling Property in Farmville (NC D003185311) The lawyer is representing a woman who lives in the area; she had a complaint about Starling's LDFL.

Note in the starling file that Union Carbide has ~~action~~ remedial a schedule for remedial action at this site. It is my understanding that implementation of their remedial action plan is underway at present.

Concerning another site involving Union Carbide, Terry Dover indicated today that Wilkinson Farm was still a problem. From previous communication w Al Nash (UCC) I gather they'd clean this site up if pushed a little

TO: Lee Crosby

FROM: Mark Durway

DATE: March 19, 1985

SUBJECT: David Starling Property and Wilkinson Property Battery Site

I spoke to Al Nash of the Union Carbide Corporation on March 14, 1985. He relayed information concerning remedial action at the following two sites:

Starling, David Property (Pitt Co.) NC D003185311
Wilkinson Property Battery Site (Edgecombe Co.) NC D980842413

Mr. Nash reported that "next week" a hazardous waste contractor would begin grading and landscaping at David Starling Property in order to facilitate a magnetometer study which will be conducted by Law Engineering in the very near future.

Regarding Wilkinson Property Battery Site, Mr. Nash indicated that Union Carbide would seek to dispose of battery waste and contaminated soil at their battery disposal area at the Asheboro Landfill, rather than manifest it out-of-state. However, at present, Union Carbide has no concrete plans to do remedial work at the Wilkinson property. In December 1984, Carbide collected samples from the site for analysis; the lab results for these are not yet available.

For additional information on these two sites, contact:

Albert M. Nash
Corporate Environmental Coordinator
Union Carbide Corp.
Battery Products Division
P.O.Box 16000
Rocky River, Ohio 44116
Tel (216) 333-0500

MD/lw/2149A5


See Inset "A" for Detail
DAVID STARLING DISPOSAL SITE
SUBSURFACE DRAINS
SIGN
HWY 258 N
N
PT. NO. 56 90.59 89.78
PT. NO. 65 90.34 89.48
PT. NO. 64 90.18 89.23
PT. NO. 63 89.29 88.04
PT. NO. 62 88.19 87.3
PT. NO. 43 BORE NO. 2 92.99
PT. NO. 86 MW 3 93.31
PT. NO. 87 MW 4 93.76
PT. NO. 85 MW 2 93.32
PT. NO. 84 MW 1 92.98
PT. NO. 42 WELL NO. 1 93.03
PT. NO. 40 BORE NO. 1 91.82
PT. NO. 41 WELL NO. 2 93.68
PT. NO. 52 89.04 87.71
PT. NO. 50 90.38 89.03
PT. NO. 51 87.04 85.86
PT. NO. 54 87.55 85.38
PT. NO. 33 IRON SET
PT. NO. 36 WELL NO. 4 91.61
PT. NO. 35 WELL NO. 5 91.83
PT. NO. 44 93.02 91.62
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90.4
90.3

Ronald H. Levine, M.D., M.P.H.
STATE HEALTH DIRECTOR

DIVISION OF HEALTH SERVICES
P.O. Box 2091
Raleigh, N.C. 27602-2091

Ms. Denise Bland
NC 3012 Project Officer
Air & Hazardous Materials Division
U.S. Environmental Protection Agency
345 Courtland Street, N.E.
Atlanta, Ga 30365

Re: Preliminary Assessment Reports
Transmittal Letter

Aberdeen Pesticides Twin Sites Aberdeen, Moore Co., N.C.	NC D980843346
Aberdeen Pesticides Fairway Six Site Aberdeen, Moore Co., N.C.	NC D980843403
Daugherty Chemical Co. Durham, Durham Co., NC	NC D080885551
David Starling Property Farmville, Pitt Co., NC	NC D003185311
Union Carbide Agric. Prod. Co. Research Triangle Park, Durham Co., NC	NC D980600274
Union Carbide Corp. Greenville, Pitt Co., NC	NC D003184249
Waste Industries Raleigh, Wake Co., NC	NC D065302267

Dear Denise:

Submitted herewith are final Preliminary Assessment reports for the subject sites.

Based on the N.C. RCRA 3012 Program Review of the available data, we have concluded the following:

Aberdeen Pesticides Twin Sites is situated upgradient from a public lake and recreation area and a Jaycees Lodge. Samples collected on-site indicated DDT levels as high as 11,700 ppm; other toxic compounds were also identified, but in lesser quantities. The area surrounding and including the site is expected to be developed into a recreation area in the future. Priority assigned is Medium.

Aberdeen Pesticides Fairway Six Site soil samples indicated DDT levels as high as 2200 ppm; other toxic compounds were also identified, but in lesser quantities. Because of rural location, the priority assigned is Low.

Daugherty Chemical Company has effectively eliminated 75 or so drums of illegally stored hazardous waste. Contaminated dirt remains on site. Priority assigned is Low.

David Starling Property is presently being monitored and evaluated by Union Carbide Corporation, which is responsible for on-site disposal of 10,000 gallons barium carbonate, barium chromate, and chromic acid in 1971. Presently, UCC indicates that the waste represents no environmental hazard to surface or ground-water resources outside the immediate disposal area. It is believed that with time the contaminants will migrate off-site to areas where there are drinking water wells. Priority assigned is Medium.

Union Carbide Agriculture Products Company commenced operation in 1980. They function primarily as a pesticide research and development facility, and not as a manufacturer. Status assigned is No Further Action.

Union Carbide Corporation, Greenville, generates waste paper impregnated with mercury at a rate of less than 1000 kg/month. UCC officials indicate no history of on-site releases of hazardous substances. Status assigned is No Further Action.

Waste Industries is a transporter with no history of on-site releases of hazardous substances. Status assigned is No Further Action.

If further information is required, contact me at 919/733-2178.

Sincerely,

D. Mark Durway

D. Mark Durway, Geologist
Solid & Hazardous Waste Management Branch
Environmental Health Section

DMD/lw/1711A

UNION CARBIDE

UNION CARBIDE CORPORATION
20575 CENTER RIDGE ROAD
ROCKY RIVER, OHIO 44116
Battery Products Division

TELEPHONE: (216) 333-1600
TELEX: UCCONSPRO RKY 98-5591
ADDRESS REPLY TO: P.O. BOX 16000
ROCKY RIVER, OHIO 44116

November 16, 1984

Mr. D. Mark Durway
North Carolina Dept. of Human Resources
Solid and Hazardous Waste Management Branch
P. O. Box 2091
Raleigh, N. C. 27602-2091

Subject: David Starling
Disposal Site

Dear Mr. Durway:

This letter is in response to your 10/4/84 request for information about the Starling disposal site in Farmville, N. C. In 1970, Union Carbide Corporation (UCC) was awarded a contract to produce a magnesium battery for the Federal government. Part of the production operation involved chrome coating. Excess barium carbonate was added to spent coating solution to precipitate chromium such that the remaining wastewater could be safely discharged to the local POTW. The sludge generated from this treatment step consisted of 40% to 50% barium carbonate and 50% to 60% barium chromate. Between 1/6/71 and 3/31/71, approximately 542 containers were shipped to the Starling disposal site. The containers consisted of 55-gallon drums and 5-gallon pails and the total volume of sludge disposed of is estimated to be 10,000 gallons. The containers were transported to the disposal site by Mr. Starling; approximately 30 trips were made during that time period. This sludge was the only UCC material disposed of at the Starling site.

In late 1982, UCC hired Law Engineering to conduct a site environmental reconnaissance and preliminary site assessment. A copy of their report is provided with this letter. That document summarizes most of our actions to date and answers most of your questions relating to chronology, waste disposal practices, and site investigation information. The Law Engineering report concludes that the waste disposal on the Starling property does not represent an environmental hazard to surface or groundwater resources outside the immediate disposal area at this time (page 25).

Based on discussions with Law Engineering and several hazardous waste handling and disposal firms, we have concluded that the risks associated with disturbing the waste at this time outweigh the risks of leaving it in place. With proper site grading, there is no definite indication that the site is or will ever be an environmental or health problem. Our plan, therefore, is to adequately define the site, implement a monitoring program, and establish a contingency plan describing actions to be taken based on predetermined levels of surface water or groundwater degradation. Contingency plan remedial actions being considered include slurry wall construction, waste stabilization, in-place fixation, and waste excavation.

Law Engineering has been hired to complete the Starling site assessment and to develop both the monitoring program and the contingency plan. Attachment No. 1 of this letter is a copy of our criteria for the above work. Our UCC action plan is shown in Attachment No. 2. The dates are approximations shown only for current planning purposes; they are not meant to be binding commitments. Please keep in mind that this is a voluntary effort being done with the cooperation of Mr. Starling, the site owner and operator.

I believe that this letter has responded to all of your concerns. If you have any questions, please call me at 216/333-0500.

AMN:ps
Attachs.

Very truly yours,

Albert M Nash

A. M. Nash

ATTACHMENT No. 1

SITE EVALUATION-5-25-84

This order is to complete the David Starling disposal site evaluation and assessment. It is broken into several key tasks as listed below. Where appropriate, references are made to recommendations contained in Contractor's November 1983 Hydrogeological Assessment Report.

1) To obtain a better understanding of ground-water flow in the immediate vicinity of the waste disposal area, Contractor shall install several shallow (less than 5-foot deep) standpipes per recommendation 9.3. The standpipes would only be used for waterlevel measurements and could probably be installed by hand techniques. The standpipes would particurlarly be important along the northern and eastern side of the waste fill area where the hydraulic relationships to the existing hog pond are not well understood. This task includes topographic surveying and submission of a report of findings.

2) The surface of the waste disposal area shall be graded to prevent direct runoff of contaminants into the northern drainage ditchand to minimize exposure of animals to contaminated standing water. Recommedation 9.4 refers to this task. UCC-Greenville will provide labor, equipment, and any necessary material to accomplish this task. The grading operation shall be supervised by Contractor's soils engineer or geologist familiar with the site conditions and safety considerations.

3) To delineate the approximate limits (widths and depth) of the disposal trench, Contractor shall conduct a geophysical survey using electrical techniques (electromagnetic and/or resistivity) and a magnetometer to traverse the disposal area. This task corresponds to recommendation 9.5. A report of findings is included in this task.

4 A) Contractor shall develop an annual groundwater monitoring program based on eight(8) sampling stations- 4 wells, 2 to 3 surface water samples, 1 contingency. Surface and groundwater samples collected from the site shall be analyzed for total barium and chromium. Field measurements of PH and conductivity are to be obtained at the time of sample collection. The results of water quality shall be statistically compared to the existing data base to determine if significant changes have occured in the water quality conditions. Ground and surface-water elevations shall be obtained in the vicinity of the waste disposal area at the time of sample collection. The water level data shall be compared to the past potentiometric surfaces to determine if significant changes in flow or gradients have occcurred. Contractor shall conduct one annual groundwater monitoring check (as described above) under this order. The report of findings is to include:

(a) description of groundwater monitoring program

(b) description of sample collection techniques and sample preservation, as appropriate

(continued on page 2)

(c) description of on-site tests (equipment, procedures)

(d) description of off-site analysis (equipment, test method)

(e) other descriptive information considered pertinent by the Contractor

(f) summary, discussion, and evaluation of monitoring results

4B) In developing the above groundwater monitoring program, the Contractor is to evaluate and report on the adequacy of the existing four(4) wells for sampling purposes. If due to hydrogeological or other condsiderations additional wells are recommended by the Contractor and approved by the Owner, the Contractor shall install said wells using similar techniques as in Contractors original study and to depths not exceeding 25 feet. In any event, no more than two(2) additional wells should be required. Well installation includes all materials, well development, supervision, surveying, and transmitting soil test boring/monitoring well records.

5) Contractor shall prepare a contingency plan describing what levels of degradation in surface or ground-water samples collected over the monitoring period require action by Union Carbide. The plan would be developed with Union Carbide's input, recognizing the current remedial measure alternatives being considered by Union Carbide. The action could include resampling if relatively low concentrations are detected, or implementation of a pre-specified remedial measure alternative if the concentrations are determined to represent statistically significant increases. The concentration levels will be based on drinking water standards or other applicable criteria.

ATTACHMENT No. 2

ACTION PLAN

DAVID STARLING DISPOSAL SITE

	Action	Responsibility	Timing
1)	Receive and review final Hydrogeological Assessment Report.	UCC	Complete
2)	Review Hydrogeological Assessment Report with David and Francis Starling.	UCC	Complete
3)	Obtain permission from David Starling allowing UCC to do the site work outlined in the Hydrogeological Assessment Report and UCC's 5/25/84 criteria.	UCC	Complete
4)	Obtain quotes for removal and disposal of surface trash and for site grading.	UCC	December 1984
5)	Complete surface trash removal and disposal.	UCC	January 1985
6)	Complete site grading under Law Engineering supervision.	UCC Law Engineering	February 1985
7)	Perform geophysical survey.	Law Engineering	March 1985
8)	Install shallow standpipes and begin water level monitoring.	Law Engineering	April 1985
9)	Law Eng. issues report on grading, geophysical survey, and standpipe study. Report includes assessment of adequacy of existing wells for groundwater monitoring program.	Law Engineering	June 1985
10)	Installation of additional wells (if necessary and approved).	UCC Law Engineering	July 1985
11)	Complete draft Monitoring Program and Contingency Plan.	Law Engineering	Sept. 1985
12)	Review written Monitoring Program and Contingency Plan with:	UCC	
	(a) UCC internal		Oct. 1985
	(b) David Starling		Nov. 1985
	(c) North Carolina Solid & Hazardous Waste Management Branch and/or U.S. EPA		Dec. 1985
13)	Modify Monitoring Program & Contingency Plan as appropriate.	UCC	Jan. 1986
14)	Approval of Monitoring Program & Contingency Plan	UCC	Feb. 1986
15)	Implement	UCC	March 1986

FILE

Ronald H. Levine, M.D., M.P.H.
STATE HEALTH DIRECTOR

DIVISION OF HEALTH SERVICES
P.O. Box 2091
Raleigh, N.C. 27602-2091

October 4, 1984

Mr. Albert M. Nash, Environmental Coordinator
Union Carbide Corporation
Battery Products Division
P.O. Box 16000
Rocky River, Ohio 44116

Dear Mr. Nash:

As a follow-up to our telephone conversation on October 3, 1984, I would like to request information concerning the David Starling Property site in Farmville, Pitt County, N.C. (EPA I.D. No. NCD003185311).

This information is needed to complete evaluation required by a U.S. EPA mandated inventory of potential hazardous waste sites in North Carolina, as authorized by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). The purpose of this inventory is to identify potential areas of concern resulting from past hazardous wastes handling.

Please provide any documentation or explanations that would describe the following activities since the start-up of operations at the David Starling property site:

1. Provide a chronological history for the period during which Union Carbide used site. Include names of site owners and operators during that period.

2. Waste storage, treatment, and disposal practices of RCRA hazardous wastes. Include types, amounts, transporters, disposal locations, and dates.

3. Waste storage, treatment, and disposal practices for other toxic or hazardous substances not regulated by RCRA, but designated as a hazardous substance under CERCLA. Include types, amounts, transporters, disposal locations, and data.

4. Any chemical analysis results indicating soil, groundwater, or surface water contamination as a result of hazardous substances on the site(s). Identify locations of any groundwater monitoring wells or other sampling points used to monitor areas of potential concern.

5. Any additional information or special investigation results (groundwater studies, magnetometer data, site geology, etc.) obtained by private consultants, with dates. Outline/describe on-going site studies, if applicable.

6. Include copies of notifications or correspondence made to the U.S. EPA or the State of North Carolina in reference to possible CERCLA site activities.

7. Outline and describe plan or program for the Starling property site clean-up (EPA Site #NCD003185311) with dates.

This information will be used to assess and process this site through the RCRA Section 3012 System. The information will be on file at the North Carolina Solid and Hazardous Waste Management Branch 3012 office, and copies will be forwarded to the United States Environmental Protection Agency, Region IV, in Atlanta, Georgia, in the near future.

Your assistance in compiling this information is very much appreciated. Please contact me at (919) 733-2178 if you are unable to complete this information request within the next four weeks. Enclosed is information on the RCRA 3012/CERCLA Program for your use.

If you have questions, or if I can be of any assistance, please contact me.

Sincerely,

D. Mark Durway

D. Mark Durway, Geologist

Solid & Hazardous Waste Management Branch
Enviornmental Health Section

DMD/lw
Enclosure

6/

To: David Starling Property / file

NCD003185311

NORTH CAROLINA
DEPARTMENT OF HUMAN RESOURCES
INTER OFFICE MEMORANDUM

DATE ~~1984~~ 1-4-84

TO _____

FROM Tom Karnoski
Billy Morris

Randy Cook - Stablex Corp.

Sed in w/ Solid & Hazardous Waste

will be bidding on clean-up of Union Carbide's David Starling Disposal Site, Pitt County, N.C.

$BaCO_3$ + $BaCr$ (Chromic Acid)

- will stay in touch re reciever bid!

S w/ Tom on details of site - he has been there.

~~NCD003184249~~ ~~Union Carbide Greenville~~ Pitt

ERRIS List - STARLING, David Property

DHR Form 2 (8/75)

Union Carbide
Greenville, N.C.

Russel Gibbs

~~Mr. L.C. Daughtridge, Jr.~~
(919) 756-2171

3-23-84 Message - Clean-up Planned ~~4-84?~~ NO

Will notify STATE Before any Clean-up.
Law Testing has done g-w monitor & Magnatometer Survey for Drums
No G-W impact Reported
3-23-84

DEPARTMENT OF HUMAN RESOURCES ___RUSH

TO Mark (Law Engineering Consultant)

DATE _____ TIME _____

WHILE YOU WERE OUT

M _____

OF - David Starling FROM -

PHONE _____

___TELEPHONED ___PLEASE PHONE

___WANTS TO SEE YOU ___WILL CALL AGAIN

___CAME TO SEE YOU ___RETURNED YOUR CALL

MESSAGE Russel Gibbs
Union Carbide, Greenville, NC
→ Rocky River Office
(environ. coordinator)
ALBERT M. NASH - Corp. Envir. Off.
Cleveland, OH (216) 333-0500

DHR 0011 (Rev. 7-77) BY _____

ecology and environment, inc.

4319 COVINGTON HIGHWAY, DECATUR, GEORGIA 30035

International Specialists in the Environmental Sciences

April 19, 1982

Mr. R. D. Stonebraker, Deputy Chief
Hazardous Emergency Response Branch
Air and Hazardous Materials Division
U.S. Environmental Protection Agency
345 Courtland Street
Atlanta, Georgia 30365

Subject: North Carolina CERCLA 103 Site Inspections
TDD No. F4-8203-07

Dear Mr. Stonebraker:

Thirty sites from 27 notifiers under CERCLA 103 (c) were submitted to Ecology and Environment Incorporated's Field Investigation Team on March 23, 1982. FIT members Charles Lee and Gene Oliver were assigned to the project.

The sites were initially screened to determine those which would require on-site inspection and those which would not. Fourteen of the sites did not require inspection for the following reasons:

1. Insufficient waste quantities;
2. Refusal by or inability of site representatives to meet with the investigators;
3. Previously initiated site studies by North Carolina State officials;
4. Absence of actual disposal at the site.

There were insufficient waste quantities to warrant further investigation for the Niagra Site in Ayden, NC; Monsanto in Research Triangle Park, NC; and East Carolina Heat Treat Service in Raleigh, NC.

Company representatives refused to furnish the locations of the sites for the two Beaunit Corporation plants in Hamilton and Clinton, NC. Owners were unable to arrange a time for the inspection of the David Starling Property in Farmville, NC.

✓ Hamilton, Martin Co., NC.
✓ Clinton, Sampson Co., NC

West Point Pepperell instead of Beaunit??

North Carolina state officials had conducted previous groundwater studies and are presently conducting ongoing monitoring of Cooper Industries in Apex, NC; DuPont/Kinston Textiles in Kinsten, NC; and Carolina Galvanizing Corporation in Aberdeen, NC.

There was no actual disposal at the Weyerhaeuser Company in Lewiston, NC; American Petrofina in Selma, NC; Helena Chemical Company in Lewisburg and Enfield, NC; and Livewire Electric Company in Goldsboro, NC.

The remaining thirteen sites were inspected during the weeks ending April 3, 1982 and April 10, 1982. These sites include Mitchell Engineering Company and Unican Security Systems of Rocky Mount; Berkley Mills, Balfour, Travenol Laboratories, Incorporated and American Thread Company of Marion; General Electric Company Plants in Hendersonville, and Mebane; Burlington Furniture Company of Robbinsville; Union Camp Corporation of Smithfield; Burlington Industries of Neuse Branch; Stanley Furniture Company of West End; Mallinckrodt Company of Raleigh; and Monsanto Corporation of Fayetteville. Individual descriptions of these sites are included in this report.

None of the site inspections revealed any apparent problems, and as a result no further action is recommended by the investigators. It is recommended, however, that the two Beaunit Corporation plants in Hamilton and Clinton, and the David Starling property in Farmville be visited by EPA representatives.

Yours truly,

Charles H. Lee

Charles H. Lee
Project Officer

CHL/lsr

April 14, 1982

Dr. W. E. Fulford, Jr.
P. O. Box 419
Farmville, NC 27828

Dear Dr. Fulford:

Enclosed please find the analytical results of water samples taken from your mother's and neighboring wells. These analyses leave no doubt in my mind that the drinking water wells do not exceed EPA suggested drinking water standards for the investigated parameters.

Aside from this well sampling, initiated at your request, an investigation of the Union Carbide "Superfund" notification of hazardous waste disposal on the Starling property will be conducted in the near future by the Environmental Protection Agency. It is my desire to keep you informed of the results of this investigation.

If you have any questions, please contact me at (919) 733-2178.

Very truly yours,

Thomas C. Karnoski, Environmental Engineer
Solid & Hazardous Waste Management Branch
Environmental Health Section

TCK:ns
Enclosure
cc: Gene Babcock, Union Carbide
Willie Pate, Pitt Co. Health Dept.
Billy W. Morris

Tom

EAST CAROLINA UNIVERSITY

GREENVILLE, NORTH CAROLINA 27834

SCHOOL OF
ALLIED HEALTH AND SOCIAL PROFESSIONS
TELEPHONE 919-757-6961

Office of the Dean

Biostatistics/Epidemiology
Community Health
Environmental Health
Medical Record Science
Medical Technology
Occupational Therapy
Physical Therapy
Rehabilitation Counseling
Social Work and Correctional Services
Speech, Language and Auditory Pathology

MEMORANDUM

DISREGARD

TO: Willie Pate
Sanitarian Supervisor
Pitt County Health Department

FROM: Barney Kane
Lab Director
Department of Environmental Health

DATE: April 9, 1982

SUBJECT: Results of Analyses for toxic metals in water samples

Samples received April 2, 1982, submitted by: Mr. Willie Pate

Source All concentrations reported as mg/l (ppm)

	Cadmium	Chromium	Silver	Lead
Nursery	$\leq$ 0.025	$\leq$ 0.15	$\leq$ 0.10	$\leq$ 0.2
Hog Pen	$\leq$ 0.025	$\leq$ 0.15	$\leq$ 0.10	$\leq$ 0.2
Mercer Res.	$\leq$ 0.025	$\leq$ 0.15	$\leq$ 0.10	$\leq$ 0.2
Fulford Res.	$\leq$ 0.025	$\leq$ 0.15	$\leq$ 0.10	$\leq$ 0.2
Starling Res.	$\leq$ 0.025	$\leq$ 0.15	$\leq$ 0.10	$\leq$ 0.2

Method: Air/Acetylene Flame Atomic Spectrophotometry

Comment: These levels indicate that the presence of metals was below detection level for the method used. Time did not permit use of the Carbon Rod method which would have been roughly 10 times more sensitive.

UC 351-48

TRANSMITTAL SLIP

THE ATTACHED IS: **DATE:** 4/23/82

FOR	**FROM** Union Carbide
Mr. Thomas Karnoski	QC DEPARTMENT GREENVILLE, N. C.

PLEASE	**REMARKS**
GIVE PROMPT ATTENTION	
RETURN WITH COMMENTS	
NOTE AND PASS ON TO	
NOTE AND FILE	
RETURN AFTER NOTING	
RETURN WITH FILE	
CALL TO MY ATTENTION	
FOLLOW UP AND ADVISE	
HAS THIS HAD ATTENTION?	
APPROVE	
TAKE UP WITH ME	
COMPLY WITH REQUEST	
SIGN AND RETURN	
WHAT IS YOUR OPINION?	

RECEIVED
APR 26 1982
SOLID & HAZARDOUS WASTE MANAGEMENT BRANCH

Printed in U.S.A.

REQUEST NR. (3-10) 82040807 | SECTION ABS SP 1

SAMPLE SUBMITTER COPY

SUBMITTER/LOCATION G BABCOCK/GR

GENERAL REPORT FORM

UNION CARBIDE CORPORATION, BATTERY PRODUCTS DIV.
EDGEWATER TECHNOLOGY LABORATORY

CHARGE NR. 320-3441-6

DATE 4-08-82

SAMPLE DISPOSITION
RECEIVE FROM AN'L OFFC
FORWARD TO DISCARD

MODE P

SAMPLE TYPE: WATER

EXTENSION 0

		TEST CODE	ANL/SP-PR HRS	AN CD	DATE CMPL. M/D/Y
ANALYSIS 1 BARIUM, TOTAL METHOD AA SPEC. SPCL PROCG	411	3561304	2.0	EB	4-12-82
ANALYSIS 2 CADMIUM, TOTAL METHOD AA SPEC. SPCL PROCG	51	3481304	2.0	EB	4-12-82
ANALYSIS 3 CHROMIUM, TOTAL METHOD AA SPEC. SPCL PROCG	59	3241304	2.0	EB	4-12-82
ANALYSIS 4 LEAD, TOTAL METHOD AA SPEC. SPCL PROCG	55	3821304	2.0	EB	4-12-82

ADDITIONAL INFORMATION

NR.	SAMPLE IDENTIFICATION	RESULTS Ba ug/ml	Cd ug/ml	Cr ug/ml	Pb ug/ml
1	FULFORD WELL	0.2	<0.02	<0.1	<0.030
2	MERCER WELL	0.5	<0.02	<0.1	<0.030
3	NURSERY WELL - JOHN STARLING	0.1	<0.02	<0.1	<0.030
4	HOG PEN - JOHN STARLING FARM	0.1	<0.02	<0.1	<0.030
5	JOHN STARLING HOUSE WELL OUTSIDE SPIGOT	0.3	<0.02	<0.1	<0.030

COMMENTS:

REFERENCE: B18-20 Pg 28-30

ANALYST NAME: Eva L. Barton

REVIEWED:

REQUEST NR. (3-10) 82040807 | SECTION ABS SP 1

SAMPLE SUBMITTER COPY

SUBMITTER/LOCATION G BABCOCK/GR

GENERAL REPORT FORM

UNION CARBIDE CORPORATION, BATTERY PRODUCTS DIV.
EDGEWATER TECHNOLOGY LABORATORY

CHARGE NR. 320-3441-6

DATE 4-08-82

P

SAMPLE DISPOSITION
RECEIVE FROM AN'L OFFC
FORWARD TO DISCARD

MODE P

SAMPLE TYPE: WATER

EXTENSION 0

		TEST CODE	ANL/SP-PR HRS	AN CD	DATE CMPL. M/D/Y
ANALYSIS 1 SILVER, TOTAL	49	3471304	2.0	EB	4-12-82
METHOD AA SPEC.					
SPCL PROCG					
ANALYSIS 2 IRON, TOTAL	42	3261304	2.0	EB	4-12-82
METHOD AA SPEC.					
SPCL PROCG					
ANALYSIS 3 MANGANESE, TOTAL	40	3251304	2.0	EB	4-12-82
METHOD AA SPEC.					
SPCL PROCG					
ANALYSIS 4 CALCIUM, TOTAL	260	3201304	2.0	EB	4-12-82
METHOD AA SPEC.					
SPCL PROCG					

ADDITIONAL INFORMATION

NR.	SAMPLE IDENTIFICATION	RESULTS Ag ug/ml	Fe ug/ml	Mn ug/ml	Ca ug/ml
1	FULFOR WELL	0.09	0.93	0.05	59.
2	MERCER WELL	<0.07	0.10	<0.01	1.5
3	NURSERY WELL - JOHN STARLING	<0.07	0.65	0.02	2.1
4	HOG PEN - JOHN STARLING FARM	<0.07	0.18	<0.01	2.3
5	JOHN STARLING HOUSE WELL OUTSIDE SPIGOT	<0.07	0.25	0.02	43.

COMMENTS:

REFERENCE: B18-20 Pg 28-30

ANALYST NAME: Eric L. Bottin

REVIEWED: JAC

REQUEST NR. (3-10) 32040807 | SECTION ABS SP 1

SAMPLE SUBMITTER COPY

SUBMITTER/LOCATION G BABCOCK/GR

GENERAL REPORT FORM

UNION CARBIDE CORPORATION, BATTERY PRODUCTS DIV.
EDGEWATER TECHNOLOGY LABORATORY

CHARGE NR. 320-3441-6

DATE 4-08-82

SAMPLE DISPOSITION
RECEIVE FROM AN'L OFFC
FORWARD TO DISCARD

MODE P

SAMPLE TYPE: WATER

EXTENSION 0

			TEST CODE	ANL/SP-PR HRS	AN CD	DATE CMPL. M/D/Y
ANALYSIS 1	SULFATE TOTAL	246	~~3161104~~ 6162105	2.0	EB	4-08-82
METHOD	UV-VIS. SPEC.					
SPCL PROCG						
ANALYSIS 2	ARSENIC, TOTAL	325	3331504	4.0	G.A.	4-13-82
METHOD	HYDRIDE GEN. AA SPEC.					
SPCL PROCG						
ANALYSIS 3	SELENIUM, TOTAL	333	3341504	4.0	G.A.	"
METHOD	HYDRIDE GEN. AA SPEC.					
SPCL PROCG						
ANALYSIS 4	MERCURY, TOTAL	53	3801404	3.0	EB	4-09-82
METHOD	COLD VAP AA SPEC					
SPCL PROCG						

ADDITIONAL INFORMATION

NR.	SAMPLE IDENTIFICATION	As	Hg	Se	$SO_4^=$
		RESULTS			
		mg/l	mg/l	mg/l	mg/l
1	FULFOR WELL	<1.	<0.1	<1.	2.1
2	MERCER WELL	<1.	<0.1	<1.	11.
3	NURSERY WELL - JOHN STARLING	<1.	<0.1	<1.	4.5
4	HOG PEN - JOHN STARLING FARM	<1.	0.2	<1.	3.8
5	JOHN STARLING HOUSE WELL OUTSIDE SPIGOT	<1.	<0.1	<1.	3.5

COMMENTS: Sulfur determined by I.C. as $SO_4^=$

REFERENCE: B18-20 P, 28-30

ANALYST NAME: Eric L. Bartus

REVIEWED: JAC

REQUEST NR. (3-10): 82040807 | SECTION: INORG 1

SAMPLE SUBMITTER COPY

SUBMITTER/LOCATION: G BABCOCK/GR

GENERAL REPORT FORM

UNION CARBIDE CORPORATION, BATTERY PRODUCTS DIV.
EDGEWATER TECHNOLOGY LABORATORY

CHARGE NR.: 320-3441-6

DATE: 4-08-82

SAMPLE DISPOSITION: RECEIVE FROM AN'L OFFC; FORWARD TO DISCARD | MODE: P

SAMPLE TYPE: WATER

EXTENSION: 0

		TEST CODE	ANL/SP-PR HRS	AN CD	DATE CMPL. M/D/Y
ANALYSIS 1 FLUORIDE, TOTAL METHOD ION CHROM. SPCL PROCG	206	~~3091105~~ 4091105	2.0	EB	4-08-8
ANALYSIS 2 PHOSPHATE METHOD ION CHROM. SPCL PROCG	626	6151105	2.0	EB	4-08-8
ANALYSIS 3 NITRATE METHOD ION CHROM. SPCL PROCG	623	6072105	2.0	EB	4-08-82
ANALYSIS 4 PH-~~VOLTAGE~~ METHOD ~~ELECTROANAL~~. SEL. ION EL. SPCL PROCG	130	~~1031E05~~ 1031205	1.0	EB	4-08-82

ADDITIONAL INFORMATION

NR.	SAMPLE IDENTIFICATION	RESULTS pH	F mg/l	PO_4^- mg/l	NO_3^- mg/l
1	FULFOR WELL	6.95	0.4	<1.	<0.6
2	MERCER WELL	4.65	0.4	<1.	4.6
3	NURSERY WELL - JOHN STARLING	6.85	1.0	1.3	<0.6
4	HOG PEN - JOHN STARLING FARM	6.66	0.4	<1.	1.1
5	JOHN STARLING HOUSE WELL OUTSIDE SPIGOT	7.28	0.7	<1.	<0.6

COMMENTS:

REFERENCE: B18-20 Pg 28-30

ANALYST NAME: Eric L. Barton

REVIEWED: JAC

REQUEST NR. (3-10) 32040807 | SECTION ABS SP 1

SAMPLE SUBMITTER COPY

SUBMITTER/LOCATION G BABCOCK/GR

GENERAL REPORT FORM

UNION CARBIDE CORPORATION, BATTERY PRODUCTS DIV.
EDGEWATER TECHNOLOGY LABORATORY

CHARGE NR. 320-3441-6

DATE 4-08-82

SAMPLE DISPOSITION
RECEIVE FROM AN'L OFFC
FORWARD TO DISCARD

MODE P

SAMPLE TYPE: WATER

EXTENSION 0

	TEST CODE	ANL/SP-PR HRS	AN CD	DATE CMPL. M/D/Y
ANALYSIS 1 SODIUM, TOTAL 32 METHOD AA SPEC. SPCL PROCG	12 18 3111304	20 24 2.0 26 30	32 33 EB	35 4 4-12-82
ANALYSIS 2 METHOD SPCL PROCG				
ANALYSIS 3 METHOD SPCL PROCG				
ANALYSIS 4 METHOD SPCL PROCG				

ADDITIONAL INFORMATION

NR.	SAMPLE IDENTIFICATION	RESULTS mg/ml Na			
1	FULFOR WELL	6.5			
2	MERCER WELL	22.			
3	NURSERY WELL - JOHN STARLING	53.			
4	HOG PEN - JOHN STARLING FARM	57.			
5	JOHN STARLING HOUSE WELL OUTSIDE SPIGOT	18.			

COMMENTS:

REFERENCE: B18-20 Pg 28-30

ANALYST NAME: Eric L. Batten

REVIEWED: JAC

REQUEST NR. (3-10): 82040807 | SECTION: INORG 1

SAMPLE SUBMITTER COPY

SUBMITTER/LOCATION: G BABCOCK/GR

GENERAL REPORT FORM

UNION CARBIDE CORPORATION, BATTERY PRODUCTS DIV.
EDGEWATER TECHNOLOGY LABORATORY

CHARGE NR.: 820-3441-6

DATE: 4-08-82

SAMPLE DISPOSITION: RECEIVE FROM AN'L OFFC; FORWARD TO DISCARD | MODE: P

SAMPLE TYPE: WATER

EXTENSION: 0

			TEST CODE (12–18)	ANL/SP-PR HRS (20–24 / 26–30)	AN CD (32–33)	DATE CMPL. M/D/Y (35–4)
ANALYSIS 1	FLUORIDE	63	4091105	1	ED	4-08-82
METHOD	ION CHROM.					
SPCL PROCG						
ANALYSIS 2	PH	126	1031705	1	ED	4-08-82
METHOD	SEL. ION EL.					
SPCL PROCG						
ANALYSIS 3	SULFATE	634	6162105	1	ED	4-08-82
METHOD	ION CHROM.					
SPCL PROCG						
ANALYSIS 4						
METHOD						
SPCL PROCG						

ADDITIONAL INFORMATION

NR.	SAMPLE IDENTIFICATION	pH	F^- mg/l	$SO_4^=$ mg/l
		RESULTS		
1	FULFOR WELL	6.95	0.4	2.1
2	MERCER WELL	4.65	0.4	11.
3	NURSERY WELL - JOHN STARLING	6.85	1.0	4.5
4	HOG PEN - JOHN STARLING FARM	6.66	0.4	3.8
5	JOHN STARLING HOUSE WELL OUTSIDE SPIGOT	7.28	0.7	3.5

COMMENTS:

REFERENCE: B18-20 P528-30 | ANALYST NAME: E L Batie | REVIEWED: JAC

This report identical

STATE LABORATORY OF PUBLIC HEALTH
DIVISION OF HEALTH SERVICES
N.C. DEPARTMENT OF HUMAN RESOURCES
P.O. BOX 28047 – 306 N. WILMINGTON ST., RALEIGH 27611

INORGANIC CHEMICAL ANALYSES – PUBLIC WATER SYSTEM

Complete All Items Above Heavy Line
(See Instructions on Reverse Side)

Name of System: Starling Prop. (HW)

Address: _____

_____ ZIP _____

County: P.H

Report To: Gary Babb or Tom Karnecki

Address: _____

_____ ZIP _____

Telephone Number: ( ) –

Collected By: Babb

Date Collected: 4-2-82 Time: 12 30 AM (PM)

Location of Sampling Point: Starling house
(Address where sample was collected)

Remarks: See below

Type of System:
( ) Community
(X) Non-Community

Source of Water:
(X) Ground ( ) Both
( ) Surface ( ) Purchased

Source of Sample:
( ) Distribution Tap ( ) House Tap
(X) Well Tap

Type of Sample:
(X) Raw ( ) Treated

Type of Treatment:
(X) None ( ) Lime
( ) Chlorinated ( ) Soda Ash
( ) Fluoridated ( ) Polyphosphate
( ) Filtered ( ) Water Softener
( ) Alum ( ) Other

Type of Sample:
( ) Regular ( ) Private
( ) Check (X) Special

WATER SYSTEM I.D. NUMBER (COPY FROM MAILING LABEL)

☐☐-☐☐-☐☐☐

State Drinking Water Parameters (Required)

	Results		
Arsenic		mg/l	2
Barium	0.2	mg/l	2
Cadmium	<0.005	mg/l	3
Chromium	<0.01	mg/l	2
Fluoride	0.40	mg/l	2
Lead	<0.03	mg/l	2
Mercury	<0.0002	mg/l	4
Nitrate (as N)	<0.05	mg/l	2
Selenium		mg/l	3
Silver	<0.02	mg/l	2
pH	7.9	units	1
Iron	0.38	mg/l	2
Manganese	<0.03	mg/l	2

Optional Parameters (List as needed)

	Results
Chloride	2
Copper	<0.05
Zinc	1.82
Sodium	14.6
[illegible]	
Sulfate	4
Calcium	22.8
Phenolics	0.45

Date Received APR 5 1982 Date Reported 4/8/82 Reported By _____

Date Analyzed _____ Laboratory Number 6280

DHS Form 2887 7/79
Laboratory

SANITARY ENGINEERING

Mildred A. Kerbaugh
Director

INSTRUCTIONS

Using typewriter or ball point pen, fill in all requested information on the top portion of form front. Please print legibly if typewriter is not available.

Before taking the sample, remove the two "freeze packs" from the styrofoam mailer and place in a freezer overnight. (SAMPLES NOT PRESERVED BY ICING DURING SHIPMENT WILL NOT BE TESTED.)

SAMPLE COLLECTION:

1) Remove the two 1-quart plastic containers and inflate by mouth, if uninflated.
2) Let the water (to be sampled) run for 5 minutes to assure that the water is from the distribution system.
3) Rinse each plastic container two or three times, and discard the water.
4) After rinsing, fill each container to within approximately one inch of top of the sampling container. Then cap the container securely. Check samples (see Types of Samples below), samples from non-community systems, and special samples may contain only one 1-quart sampling container, rather than two.

SAMPLE SHIPMENT:

1) After collection of the sample(s), replace the two frozen "freeze packs" in the styrofoam mailer.
2) Next, place the two 1-quart samples into the mailer and cap.
3) After capping the styrofoam mailer, place the report from (UNFOLDED) on top, then seal the cardboard box. Mail immediately to the State Laboratory using the supplied label. The sender is required to pay shipping costs.

The analysis takes several days for completion, and the report will be mailed back as soon as possible. Please do not call the laboratory to request "early" results, unless absolutely necessary.

LIMITS OF ALLOWABLE CONCENTRATIONS FOR DRINKING WATER ARE LISTED BELOW:

Parameters	Limits (mg/l)	Methods (EPA–600/4–79–020)
Arsenic	0.05	AA, furnace technique, pp. 206.2-1 – 206.2-2
Barium	1.0	AA, direct aspiration, pp. 208.1-1 – 208.1-2
Cadium	0.010	AA, furnace technique, pp. 213.2-1 – 213.2-2
Chromium	0.05	AA, furnace technique, pp. 218.2-1 – 218.2-2
Fluoride (Temperature Dependent)	1.4-2.4	Ion Selective Electrode, pp. 340.2-1 – 340.2-3
Lead	0.05	AA, furnace technique, pp. 239.2-1 – 239.2-2
Mercury	0.002	Manual Cold Vapor technique, pp. 245.1-1 – 245.1-6
Nitrate (as N)	10.0	Colorimetric, Brucine, pp. 352.1-1 – 352.1-3
Selenium	0.01	AA, furnace technique, pp. 270.2-1 – 270.2-3
Silver	0.05	AA. direct aspiration, pp. 272.1-1 – 272.1-2
Iron	0.3	AA, direct aspiration, pp. 236. 1-1 – 236.1-2
Manganese	0.05	AA, direct aspiration, pp. 243.1-1 – 243.1-2
pH	not less than 6.5 units	pH Electrometric, pp. 150.1-1 – 150.1-3

If sample concentrations are greater than the allowable concentrations, a check sample(s) will be required.

TYPES OF SAMPLES

Regular: A sample(s) submitted to meet the monitoring requirements of the North Carolina Drinking Water Act, GS 130 – Article 13D.

Check: A sample(s) submitted when a previous sample has exceeded the allowable concentration. The check sample should be taken from the same sample distribution tap as the previous sample.

Private: A sample(s) from a private water supply submitted by a licensed physician, sanitarian or other health department representative.

Special: A sample(s) submitted by an engineer working with the State or the E.P.A., a sample taken by the owner/operator of a water system for a new well, a landfill test well sample or other non-categorized sample.

STATE LABORATORY OF PUBLIC HEALTH
DIVISION OF HEALTH SERVICES
N.C. DEPARTMENT OF HUMAN RESOURCES
P.O. BOX 28047 – 306 N. WILMINGTON ST., RALEIGH 27611

INORGANIC CHEMICAL ANALYSES – PUBLIC WATER SYSTEM

Complete All Items Above Heavy Line
(See Instructions on Reverse Side)

Name of System: Starling Poop (HW)

Address: _____

_____ ZIP _____

County: P.H

Report To: Gary Babb or Tom Krawczyk

Address: _____

_____ ZIP _____

Telephone Number: ( ) –

Collected By: Babb

Date Collected: 4-2-82 Time: 11:54 AM/PM

Location of Sampling Point: Well at nursery
(Address where sample was collected)

Remarks: See below

Type of System:
( ) Community
(X) Non-Community

Source of Water:
(X) Ground ( ) Both
( ) Surface ( ) Purchased

Source of Sample:
( ) Distribution Tap ( ) House Tap
(X) Well Tap

Type of Sample:
(X) Raw ( ) Treated

Type of Treatment:
(X) None ( ) Lime
( ) Chlorinated ( ) Soda Ash
( ) Fluoridated ( ) Polyphosphate
( ) Filtered ( ) Water Softener
( ) Alum ( ) Other

Type of Sample:
( ) Regular ( ) Private
( ) Check (X) Special

WATER SYSTEM I.D. NUMBER (COPY FROM MAILING LABEL)
☐☐-☐☐-☐☐☐

State Drinking Water Parameters (Required)	Results			Optional Parameters (List as needed)	Results
Arsenic		mg/l	2	Chloride	3
Barium	<0.1	mg/l	2	Copper	<0.05
Cadmium	<0.005	mg/l	3	Zinc	0.10
Chromium	<0.01	mg/l	2	Sodium	47.8
Fluoride	0.23	mg/l	2	Sulfate	4
Lead	<0.03	mg/l	2	Calcium	3.1
Mercury	<0.0002	mg/l	4	Phosphate	1.13
Nitrate (as N)	<0.05	mg/l	2		
Selenium		mg/l	3		
Silver	<0.02	mg/l	2		
pH	7.4	units	1		
Iron	0.53	mg/l	2		
Manganese	<0.03	mg/l	2		

Date Received APR 5 1982 Date Reported 4/8/82 Reported By 6279

Date Analyzed _____ Laboratory Number _____

DHS Form 2887 7/79
Laboratory

SANITARY ENGINEERING

Mildred A. Kerbaugh
Director

INSTRUCTIONS

Using typewriter or ball point pen, fill in all requested information on the top portion of form front. Please print legibly if typewriter is not available.

Before taking the sample, remove the two "freeze packs" from the styrofoam mailer and place in a freezer overnight. (SAMPLES NOT PRESERVED BY ICING DURING SHIPMENT WILL NOT BE TESTED.)

SAMPLE COLLECTION:

1) Remove the two 1-quart plastic containers and inflate by mouth, if uninflated.
2) Let the water (to be sampled) run for 5 minutes to assure that the water is from the distribution system.
3) Rinse each plastic container two or three times, and discard the water.
4) After rinsing, fill each container to within approximately one inch of top of the sampling container. Then cap the container securely. Check samples (see Types of Samples below), samples from non-community systems, and special samples may contain only one 1-quart sampling container, rather than two.

SAMPLE SHIPMENT:

1) After collection of the sample(s), replace the two frozen "freeze packs" in the styrofoam mailer.
2) Next, place the two 1-quart samples into the mailer and cap.
3) After capping the styrofoam mailer, place the report from (UNFOLDED) on top, then seal the cardboard box. Mail immediately to the State Laboratory using the supplied label. The sender is required to pay shipping costs.

The analysis takes several days for completion, and the report will be mailed back as soon as possible. Please do not call the laboratory to request "early" results, unless absolutely necessary.

LIMITS OF ALLOWABLE CONCENTRATIONS FOR DRINKING WATER ARE LISTED BELOW:

Parameters	Limits (mg/l)	Methods (EPA–600/4–79–020)
Arsenic	0.05	AA, furnace technique, pp. 206.2-1 – 206.2-2
Barium	1.0	AA, direct aspiration, pp. 208.1-1 – 208.1-2
Cadium	0.010	AA, furnace technique, pp. 213.2-1 – 213.2-2
Chromium	0.05	AA, furnace technique, pp. 218.2-1 – 218.2-2
Fluoride (Temperature Dependent)	1.4-2.4	Ion Selective Electrode, pp. 340.2-1 – 340.2-3
Lead	0.05	AA, furnace technique, pp. 239.2-1 – 239.2-2
Mercury	0.002	Manual Cold Vapor technique, pp. 245.1-1 – 245.1-6
Nitrate (as N)	10.0	Colorimetric, Brucine, pp. 352.1-1 – 352.1-3
Selenium	0.01	AA, furnace technique, pp. 270.2-1 – 270.2-3
Silver	0.05	AA. direct aspiration, pp. 272.1-1 – 272.1-2
Iron	0.3	AA, direct aspiration, pp. 236. 1-1 – 236.1-2
Manganese	0.05	AA, direct aspiration, pp. 243.1-1 – 243.1-2
pH	not less than 6.5 units	pH Electrometric, pp. 150.1-1 – 150.1-3

If sample concentrations are greater than the allowable concentrations, a check sample(s) will be required.

TYPES OF SAMPLES

Regular: A sample(s) submitted to meet the monitoring requirements of the North Carolina Drinking Water Act, GS 130 – Article 13D.

Check: A sample(s) submitted when a previous sample has exceeded the allowable concentration. The check sample should be taken from the same sample distribution tap as the previous sample.

Private: A sample(s) from a private water supply submitted by a licensed physician, sanitarian or other health department representative.

Special: A sample(s) submitted by an engineer working with the State or the E.P.A., a sample taken by the owner/operator of a water system for a new well, a landfill test well sample or other non-categorized sample.

STATE LABORATORY OF PUBLIC HEALTH
DIVISION OF HEALTH SERVICES
N.C. DEPARTMENT OF HUMAN RESOURCES
P.O. BOX 28047 – 306 N. WILMINGTON ST., RALEIGH 27611

INORGANIC CHEMICAL ANALYSES – PUBLIC WATER SYSTEM

Complete All Items Above Heavy Line
(See Instructions on Reverse Side)

Name of System: Sterling Prop. (HW)

Address: _____

_____ ZIP _____

County: Pitt

Report To: Gary Babb or Tom Kaminski

Address: _____

_____ ZIP _____

Telephone Number: ( ) –

Collected By: Babb

Date Collected: 4-2-82 Time: 11:45 AM PM

Location of Sampling Point: well at hog lot
(Address where sample was collected)

Remarks: Analyze for parameters as indicated below

Type of System:
( ) Community
(X) Non-Community

Source of Water:
(X) Ground ( ) Both
( ) Surface ( ) Purchased

Source of Sample:
( ) Distribution Tap ( ) House Tap
(X) Well Tap

Type of Sample:
(X) Raw ( ) Treated

Type of Treatment:
(X) None ( ) Lime
( ) Chlorinated ( ) Soda Ash
( ) Fluoridated ( ) Polyphosphate
( ) Filtered ( ) Water Softener
( ) Alum ( ) Other

Type of Sample:
( ) Regular ( ) Private
( ) Check (X) Special

WATER SYSTEM I.D. NUMBER (COPY FROM MAILING LABEL)
☐☐-☐☐-☐☐☐

State Drinking Water Parameters (Required)	Results			Optional Parameters (List as needed)	Results
Arsenic		mg/l	2	Chloride	3
Barium	<0.1	mg/l	2	Copper	<0.05
Cadmium	<0.005	mg/l	3	Zinc	0.14
Chromium	<.01	mg/l	2	Sodium	49.9
Fluoride	0.23	mg/l	2	Sulfate	6
Lead	<0.03	mg/l	2	Calcium	3.1
Mercury	<0.0002	mg/l	4	Phosphate	0.87
Nitrate (as N)	<0.05	mg/l	2		
Selenium		mg/l	3		
Silver	<0.02	mg/l	2		
pH	7.0	units	1		
Iron	0.14	mg/l	2		
Manganese	<0.03	mg/l	2		

Date Received APR 5 1982 Date Reported 4/8/82 Reported By _____

Date Analyzed _____ Laboratory Number 6276

DHS Form 2887 7/79
Laboratory

SANITARY ENGINEERING

Mildred A. Kerbaugh
Director

INSTRUCTIONS

Using typewriter or ball point pen, fill in all requested information on the top portion of form front. Please print legibly if typewriter is not available.

Before taking the sample, remove the two "freeze packs" from the styrofoam mailer and place in a freezer overnight. (SAMPLES NOT PRESERVED BY ICING DURING SHIPMENT WILL NOT BE TESTED.)

SAMPLE COLLECTION:

1) Remove the two 1-quart plastic containers and inflate by mouth, if uninflated.
2) Let the water (to be sampled) run for 5 minutes to assure that the water is from the distribution system.
3) Rinse each plastic container two or three times, and discard the water.
4) After rinsing, fill each container to within approximately one inch of top of the sampling container. Then cap the container securely. Check samples (see Types of Samples below), samples from non-community systems, and special samples may contain only one 1-quart sampling container, rather than two.

SAMPLE SHIPMENT:

1) After collection of the sample(s), replace the two frozen "freeze packs" in the styrofoam mailer.
2) Next, place the two 1-quart samples into the mailer and cap.
3) After capping the styrofoam mailer, place the report from (UNFOLDED) on top, then seal the cardboard box. Mail immediately to the State Laboratory using the supplied label. The sender is required to pay shipping costs.

The analysis takes several days for completion, and the report will be mailed back as soon as possible. Please do not call the laboratory to request "early" results, unless absolutely necessary.

LIMITS OF ALLOWABLE CONCENTRATIONS FOR DRINKING WATER ARE LISTED BELOW:

Parameters	Limits (mg/l)	Methods (EPA–600/4–79–020)
Arsenic	0.05	AA, furnace technique, pp. 206.2-1 – 206.2-2
Barium	1.0	AA, direct aspiration, pp. 208.1-1 – 208.1-2
Cadium	0.010	AA, furnace technique, pp. 213.2-1 – 213.2-2
Chromium	0.05	AA, furnace technique, pp. 218.2-1 – 218.2-2
Fluoride (Temperature Dependent)	1.4-2.4	Ion Selective Electrode, pp. 340.2-1 – 340.2-3
Lead	0.05	AA, furnace technique, pp. 239.2-1 – 239.2-2
Mercury	0.002	Manual Cold Vapor technique, pp. 245.1-1 – 245.1-6
Nitrate (as N)	10.0	Colorimetric, Brucine, pp. 352.1-1 – 352.1-3
Selenium	0.01	AA, furnace technique, pp. 270.2-1 – 270.2-3
Silver	0.05	AA. direct aspiration, pp. 272.1-1 – 272.1-2
Iron	0.3	AA, direct aspiration, pp. 236. 1-1 – 236.1-2
Manganese	0.05	AA, direct aspiration, pp. 243.1-1 – 243.1-2
pH	not less than 6.5 units	pH Electrometric, pp. 150.1-1 – 150.1-3

If sample concentrations are greater than the allowable concentrations, a check sample(s) will be required.

TYPES OF SAMPLES

Regular: A sample(s) submitted to meet the monitoring requirements of the North Carolina Drinking Water Act, GS 130 – Article 13D.

Check: A sample(s) submitted when a previous sample has exceeded the allowable concentration. The check sample should be taken from the same sample distribution tap as the previous sample.

Private: A sample(s) from a private water supply submitted by a licensed physician, sanitarian or other health department representative.

Special: A sample(s) submitted by an engineer working with the State or the E.P.A., a sample taken by the owner/operator of a water system for a new well, a landfill test well sample or other non-categorized sample.

STATE LABORATORY OF PUBLIC HEALTH
DIVISION OF HEALTH SERVICES
N.C. DEPARTMENT OF HUMAN RESOURCES
P.O. BOX 28047 – 306 N. WILMINGTON ST., RALEIGH 27611

INORGANIC CHEMICAL ANALYSES – PUBLIC WATER SYSTEM

Complete All Items Above Heavy Line
(See Instructions on Reverse Side)

Name of System: Starling Prop. (HW)

Address: _____

_____ ZIP _____

County: Pitt

Report To: Gary Babb or Tom Kwiatkowski

Address: _____

_____ ZIP _____

Telephone Number: ( ) –

Collected By: Kwiatkowski

Date Collected: 4-2-82 Time: 12:45 (AM) PM

Location of Sampling Point: Fulford Well
(Address where sample was collected)

Remarks: See below

Type of System:
( ) Community
(X) Non-Community

Source of Water:
(X) Ground ( ) Both
( ) Surface ( ) Purchased

Source of Sample:
( ) Distribution Tap ( ) House Tap
(X) Well Tap

Type of Sample:
(X) Raw ( ) Treated

Type of Treatment:
(X) None ( ) Lime
( ) Chlorinated ( ) Soda Ash
( ) Fluoridated ( ) Polyphosphate
( ) Filtered ( ) Water Softener
( ) Alum ( ) Other

Type of Sample:
( ) Regular ( ) Private
( ) Check (X) Special

WATER SYSTEM I.D. NUMBER (COPY FROM MAILING LABEL)

☐☐-☐☐-☐☐☐

State Drinking Water Parameters (Required)

	Results		
Arsenic		mg/l	2
Barium	0.2	mg/l	2
Cadmium	<0.005	mg/l	3
Chromium	<0.01	mg/l	2
Fluoride	0.23	mg/l	2
Lead	<0.03	mg/l	2
Mercury	<0.0002	mg/l	4
Nitrate (as N)	1.95	mg/l	2
Selenium		mg/l	3
Silver	<0.02	mg/l	2
pH	7.4	units	1
Iron	1.07	mg/l	2
Manganese	0.06	mg/l	2

Optional Parameters (List as needed)

	Results
Chloride	Interference
Copper	<0.05
Zinc	0.10
Sodium	4.7
Sulfate	21
Calcium	37.0
Phosphate	0.15

Date Received APR 5 1982 Date Reported 4/8/82 Reported By _____

Date Analyzed _____ Laboratory Number S279

DHS Form 2887 7/79
Laboratory

SANITARY ENGINEERING

Mildred A. Kerbaugh
Director

INSTRUCTIONS

Using typewriter or ball point pen, fill in all requested information on the top portion of form front. Please print legibly if typewriter is not available.

Before taking the sample, remove the two "freeze packs" from the styrofoam mailer and place in a freezer overnight. (SAMPLES NOT PRESERVED BY ICING DURING SHIPMENT WILL NOT BE TESTED.)

SAMPLE COLLECTION:

1) Remove the two 1-quart plastic containers and inflate by mouth, if uninflated.
2) Let the water (to be sampled) run for 5 minutes to assure that the water is from the distribution system.
3) Rinse each plastic container two or three times, and discard the water.
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SAMPLE SHIPMENT:

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3) After capping the styrofoam mailer, place the report from (UNFOLDED) on top, then seal the cardboard box. Mail immediately to the State Laboratory using the supplied label. The sender is required to pay shipping costs.

The analysis takes several days for completion, and the report will be mailed back as soon as possible. Please do not call the laboratory to request "early" results, unless absolutely necessary.

LIMITS OF ALLOWABLE CONCENTRATIONS FOR DRINKING WATER ARE LISTED BELOW:

Parameters	Limits (mg/l)	Methods (EPA–600/4–79–020)
Arsenic	0.05	AA, furnace technique, pp. 206.2-1 – 206.2-2
Barium	1.0	AA, direct aspiration, pp. 208.1-1 – 208.1-2
Cadium	0.010	AA, furnace technique, pp. 213.2-1 – 213.2-2
Chromium	0.05	AA, furnace technique, pp. 218.2-1 – 218.2-2
Fluoride (Temperature Dependent)	1.4-2.4	Ion Selective Electrode, pp. 340.2-1 – 340.2-3
Lead	0.05	AA, furnace technique, pp. 239.2-1 – 239.2-2
Mercury	0.002	Manual Cold Vapor technique, pp. 245.1-1 – 245.1-6
Nitrate (as N)	10.0	Colorimetric, Brucine, pp. 352.1-1 – 352.1-3
Selenium	0.01	AA, furnace technique, pp. 270.2-1 – 270.2-3
Silver	0.05	AA. direct aspiration, pp. 272.1-1 – 272.1-2
Iron	0.3	AA, direct aspiration, pp. 236. 1-1 – 236.1-2
Manganese	0.05	AA, direct aspiration, pp. 243.1-1 – 243.1-2
pH	not less than 6.5 units	pH Electrometric, pp. 150.1-1 – 150.1-3

If sample concentrations are greater than the allowable concentrations, a check sample(s) will be required.

TYPES OF SAMPLES

Regular: A sample(s) submitted to meet the monitoring requirements of the North Carolina Drinking Water Act, GS 130 – Article 13D.

Check: A sample(s) submitted when a previous sample has exceeded the allowable concentration. The check sample should be taken from the same sample distribution tap as the previous sample.

Private: A sample(s) from a private water supply submitted by a licensed physician, sanitarian or other health department representative.

Special: A sample(s) submitted by an engineer working with the State or the E.P.A.; a sample taken by the owner/operator of a water system for a new well, a landfill test well sample or other non-categorized sample.

STATE LABORATORY OF PUBLIC HEALTH
DIVISION OF HEALTH SERVICES
N.C. DEPARTMENT OF HUMAN RESOURCES
P.O. BOX 28047 – 306 N. WILMINGTON ST., RALEIGH 27611

INORGANIC CHEMICAL ANALYSES – PUBLIC WATER SYSTEM

Complete All Items Above Heavy Line
(See Instructions on Reverse Side)

Name of System: Starling Prop. (HW)

Address: _____

_____ ZIP _____

County: P.H

Report To: Greg Bubb or Tom Kwiecka

Address: _____

_____ ZIP _____

Telephone Number: ( ) –

Collected By: Kwiecka

Date Collected: 4-2-82 Time: 12:30 AM (PM)

Location of Sampling Point: Mercer Well
(Address where sample was collected)

Remarks: See below

Type of System:
( ) Community
(X) Non-Community

Source of Water:
(X) Ground ( ) Both
( ) Surface ( ) Purchased

Source of Sample:
( ) Distribution Tap ( ) House Tap
(X) Well Tap

Type of Sample:
(X) Raw ( ) Treated

Type of Treatment:
(X) None ( ) Lime
( ) Chlorinated ( ) Soda Ash
( ) Fluoridated ( ) Polyphosphate
( ) Filtered ( ) Water Softener
( ) Alum ( ) Other

Type of Sample:
( ) Regular ( ) Private
( ) Check (X) Special

WATER SYSTEM I.D. NUMBER (COPY FROM MAILING LABEL)

☐☐-☐☐-☐☐☐

State Drinking Water Parameters (Required)

	Results		
Arsenic		mg/l	2
Barium	<0.1	mg/l	2
Cadmium	<0.005	mg/l	3
Chromium	<0.01	mg/l	2
Fluoride	<0.10	mg/l	2
Lead	<0.03	mg/l	2
Mercury	<0.0002	mg/l	4
Nitrate (as N)	1.05	mg/l	2
Selenium		mg/l	3
Silver	<0.02	mg/l	2
pH	5.0	units	1
Iron	0.24	mg/l	2
Manganese	<0.03	mg/l	2

Optional Parameters (List as needed)

	Results
Chloride	30
Copper	0.05
Zinc	0.06
Sodium	17.9
Sulfate	18
Calcium	2.2
Phosphate	0.06

APR 5 1982

Date Received _____ Date Reported 4/8/82 Reported By _____

Date Analyzed _____ Laboratory Number _____

DHS Form 2887 7/79
Laboratory

SANITARY ENGINEERING

Mildred A. Kerbaugh
Director

INSTRUCTIONS

Using typewriter or ball point pen, fill in all requested information on the top portion of form front. Please print legibly if typewriter is not available.

Before taking the sample, remove the two "freeze packs" from the styrofoam mailer and place in a freezer overnight. (SAMPLES NOT PRESERVED BY ICING DURING SHIPMENT WILL NOT BE TESTED.)

SAMPLE COLLECTION:

1) Remove the two 1-quart plastic containers and inflate by mouth, if uninflated.
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3) After capping the styrofoam mailer, place the report from (UNFOLDED) on top, then seal the cardboard box. Mail immediately to the State Laboratory using the supplied label. The sender is required to pay shipping costs.

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LIMITS OF ALLOWABLE CONCENTRATIONS FOR DRINKING WATER ARE LISTED BELOW:

Parameters	Limits (mg/l)	Methods (EPA–600/4–79–020)
Arsenic	0.05	AA, furnace technique, pp. 206.2-1 – 206.2-2
Barium	1.0	AA, direct aspiration, pp. 208.1-1 – 208.1-2
Cadium	0.010	AA, furnace technique, pp. 213.2-1 – 213.2-2
Chromium	0.05	AA, furnace technique, pp. 218.2-1 – 218.2-2
Fluoride (Temperature Dependent)	1.4-2.4	Ion Selective Electrode, pp. 340.2-1 – 340.2-3
Lead	0.05	AA, furnace technique, pp. 239.2-1 – 239.2-2
Mercury	0.002	Manual Cold Vapor technique, pp. 245.1-1 – 245.1-6
Nitrate (as N)	10.0	Colorimetric, Brucine, pp. 352,1-1 – 352.1-3
Selenium	0.01	AA, furnace technique, pp. 270.2-1 – 270.2-3
Silver	0.05	AA. direct aspiration, pp. 272.1-1 – 272.1-2
Iron	0.3	AA, direct aspiration, pp. 236. 1-1 – 236.1-2
Manganese	0.05	AA, direct aspiration, pp. 243.1-1 – 243.1-2
pH	not less than 6.5 units	pH Electrometric, pp. 150.1-1 – 150.1-3

If sample concentrations are greater than the allowable concentrations, a check sample(s) will be required.

TYPES OF SAMPLES

Regular: A sample(s) submitted to meet the monitoring requirements of the North Carolina Drinking Water Act, GS 130 – Article 13D.

Check: A sample(s) submitted when a previous sample has exceeded the allowable concentration. The check sample should be taken from the same sample distribution tap as the previous sample.

Private: A sample(s) from a private water supply submitted by a licensed physician, sanitarian or other health department representative.

Special: A sample(s) submitted by an engineer working with the State or the E.P.A., a sample taken by the owner/operator of a water system for a new well, a landfill test well sample or other non-categorized sample.

HYDROLOGIC MONITORING

COUNTY Pitt
SITE David Starling Prop.
PERMIT NO. Superfund Site

DATE 4-2-82
TIME 11:30 AM
WEATHER Fair - Warm 80°F

SAMPLE NOS. see below
SITE CONTACT

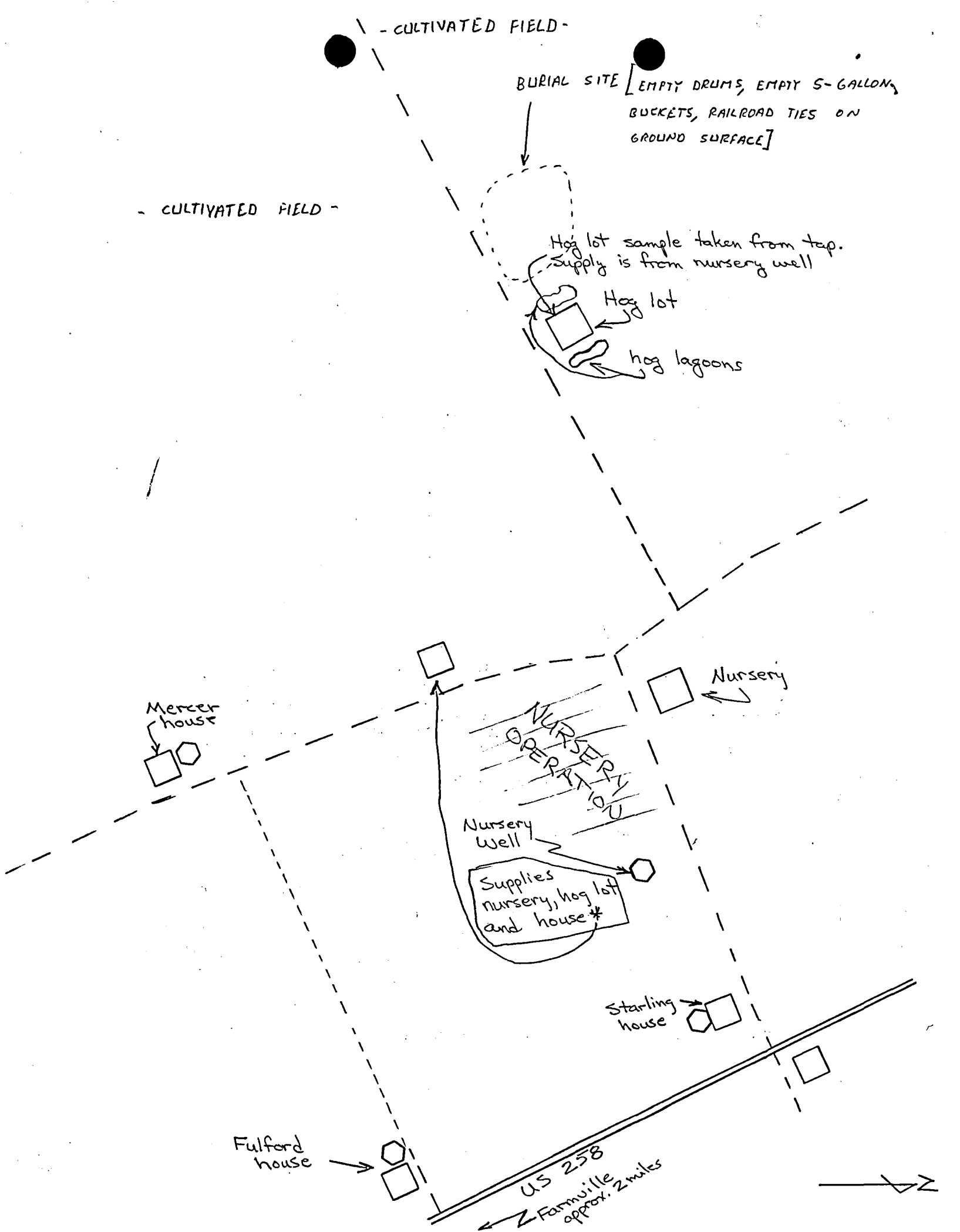
TYPE OF SAMPLE:
- Groundwater ✓
- Surface Water
- Leachate
- Other

	Well at hog lot	Well at nursery	Starling house	Fulford house	Mercer house
WELL INFORMATION:					
Type Casing	same at nursery well as used	–	–	–	–
Diameter		–	–	–	–
Depth		200'+	80-90'	?	30' dug
Water Level		–	–	–	–
Locking Cap		–	–	–	–
Keys With		–	–	–	–
FIELD PARAMETERS:					
Temperature °C	15.9	19.6	18.1	18.5	15.0
pH	6.4	6.4	6.8	6.2	4.4
Conductivity	360	250	260	250	159
Dissolved Solids	–	–	–	–	–
Other					

LABORATORY PARAMETERS:
- Inorganic ✓
- Organic
- Microbiological
- Radiation
- Other

REMARKS: See back for well locations

SAMPLE TAKEN BY: Gary Baldt


- CULTIVATED FIELD -
BURIAL SITE [EMPTY DRUMS, EMPTY 5-GALLON BUCKETS, RAILROAD TIES ON GROUND SURFACE]
- CULTIVATED FIELD -
Hog lot sample taken from tap. Supply is from nursery well
Hog lot
hog lagoons
Nursery
Mercer house
NURSERY OPERATION
Nursery Well
Supplies nursery, hog lot and house*
Starling house
Fulford house
US 258
Farmville approx. 2 miles
N

STATE LABORATORY OF PUBLIC HEALTH
DIVISION OF HEALTH SERVICES
N.C. DEPARTMENT OF HUMAN RESOURCES
P.O. BOX 28047 – 306 N. WILMINGTON ST., RALEIGH 27611

RECEIVED
APR 19 1982
SOLID & HAZARDOUS WASTE MANAGEMENT BRANCH

INORGANIC CHEMICAL ANALYSES – PUBLIC WATER SYSTEM

Complete All Items Above Heavy Line
(See Instructions on Reverse Side)

Name of System: Starling Prop. (HW)

Address: _____

_____ ZIP _____

County: Pitt

Report To: Gary Babb or Tom Kamaski

Address: _____

_____ ZIP _____

Telephone Number: ( ) –

Collected By: Babb

Date Collected: 4-2-82 Time: 12 30 AM (PM)

Location of Sampling Point: Starling house
(Address where sample was collected)

Remarks: See below

Type of System:
( ) Community
(X) Non-Community

Source of Water:
(X) Ground ( ) Both
( ) Surface ( ) Purchased

Source of Sample:
( ) Distribution Tap ( ) House Tap
(X) Well Tap

Type of Sample:
(X) Raw ( ) Treated

Type of Treatment:
(X) None ( ) Lime
( ) Chlorinated ( ) Soda Ash
( ) Fluoridated ( ) Polyphosphate
( ) Filtered ( ) Water Softener
( ) Alum ( ) Other

Type of Sample:
( ) Regular ( ) Private
( ) Check (X) Special

WATER SYSTEM I.D. NUMBER (COPY FROM MAILING LABEL)
□□-□□-□□□

State Drinking Water Parameters (Required)	Results			Optional Parameters (List as needed)	Results
Arsenic	<0.05	mg/l	2	Chlorides	2
Barium	0.2	mg/l	2	Copper	<0.05
Cadmium	<0.005	mg/l	3	Zinc	1.82
Chromium	<0.01	mg/l	2	Sodium	14.6
Fluoride	0.40	mg/l	2	[illegible]	
Lead	<0.03	mg/l	2	Sulfate	4
Mercury	<0.0002	mg/l	4	Calcium	22.8
Nitrate (as N)	<0.05	mg/l	2	Phosphate	0.45
Selenium	<0.005	mg/l	3		
Silver	<0.02	mg/l	2		
pH	7.9	units	1		
Iron	0.38	mg/l	2		
Manganese	<0.03	mg/l	2		0.10

Date Received APR 5 1982 Date Reported 4/16/82 Reported By _____

Date Analyzed _____ Laboratory Number 6280

DHS Form 2887 7/79
Laboratory

OWNER

Mildred A. Kerbaugh
Director

INSTRUCTIONS

Using typewriter or ball point pen, fill in all requested information on the top portion of form front. Please print legibly if typewriter is not available.

Before taking the sample, remove the two "freeze packs" from the styrofoam mailer and place in a freezer overnight. (SAMPLES NOT PRESERVED BY ICING DURING SHIPMENT WILL NOT BE TESTED.)

SAMPLE COLLECTION:

1) Remove the two 1-quart plastic containers and inflate by mouth, if uninflated.
2) Let the water (to be sampled) run for 5 minutes to assure that the water is from the distribution system.
3) Rinse each plastic container two or three times, and discard the water.
4) After rinsing, fill each container to within approximately one inch of top of the sampling container. Then cap the container securely. Check samples (see Types of Samples below), samples from non-community systems, and special samples may contain only one 1-quart sampling container, rather than two.

SAMPLE SHIPMENT:

1) After collection of the sample(s), replace the two frozen "freeze packs" in the styrofoam mailer.
2) Next, place the two 1-quart samples into the mailer and cap.
3) After capping the styrofoam mailer, place the report from (UNFOLDED) on top, then seal the cardboard box. Mail immediately to the State Laboratory using the supplied label. The sender is required to pay shipping costs.

The analysis takes several days for completion, and the report will be mailed back as soon as possible. Please do not call the laboratory to request "early" results, unless absolutely necessary.

LIMITS OF ALLOWABLE CONCENTRATIONS FOR DRINKING WATER ARE LISTED BELOW:

Parameters	Limits (mg/l)	Methods (EPA–600/4–79–020)
Arsenic	0.05	AA, furnace technique, pp. 206.2-1 – 206.2-2
Barium	1.0	AA, direct aspiration, pp. 208.1-1 – 208.1-2
Cadium	0.010	AA, furnace technique, pp. 213.2-1 – 213.2-2
Chromium	0.05	AA, furnace technique, pp. 218.2-1 – 218.2-2
Fluoride	1.4-2.4	Ion Selective Electrode, pp. 340.2-1 – 340.2-3
– (Temperature Dependent)		
Lead	0.05	AA, furnace technique, pp. 239.2-1 – 239.2-2
Mercury	0.002	Manual Cold Vapor technique, pp. 245.1-1 – 245.1-6
Nitrate (as N)	10.0	Colorimetric, Brucine, pp. 352.1-1 – 352.1-3
Selenium	0.01	AA, furnace technique, pp. 270.2-1 – 270.2-3
Silver	0.05	AA. direct aspiration, pp. 272.1-1 – 272.1-2
Iron	0.3	AA, direct aspiration, pp. 236. 1-1 – 236.1-2
Manganese	0.05	AA, direct aspiration, pp. 243.1-1 – 243.1-2
pH	not less than 6.5 units	pH Electrometric, pp. 150.1-1 – 150.1-3

If sample concentrations are greater than the allowable concentrations, a check sample(s) will be required.

TYPES OF SAMPLES

Regular: A sample(s) submitted to meet the monitoring requirements of the North Carolina Drinking Water Act, GS 130 – Article 13D.

Check: A sample(s) submitted when a previous sample has exceeded the allowable concentration. The check sample should be taken from the same sample distribution tap as the previous sample.

Private: A sample(s) from a private water supply submitted by a licensed physician, sanitarian or other health department representative.

Special: A sample(s) submitted by an engineer working with the State or the E.P.A., a sample taken by the owner/operator of a water system for a new well, a landfill test well sample or other non-categorized sample.

STATE LABORATORY OF PUBLIC HEALTH
DIVISION OF HEALTH SERVICES
N.C. DEPARTMENT OF HUMAN RESOURCES
P.O. BOX 28047 – 306 N. WILMINGTON ST., RALEIGH 27611

RECEIVED
APR 19 1982
SOLID & HAZARDOUS WASTE MANAGEMENT BRANCH

INORGANIC CHEMICAL ANALYSES – PUBLIC WATER SYSTEM

Complete All Items Above Heavy Line
(See Instructions on Reverse Side)

Name of System: Starling Prop. (HW)

Address:

ZIP

County: Pitt

Report To: Gary Babb or Tom Karneski

Address:

ZIP

Telephone Number: ( ) –

Collected By: Babb

Date Collected: 4-2-82 Time: 11:59 AM PM

Location of Sampling Point: Well at nursery
(Address where sample was collected)

Remarks: See below

Type of System:
( ) Community
(X) Non-Community

Source of Water:
(X) Ground ( ) Both
( ) Surface ( ) Purchased

Source of Sample:
( ) Distribution Tap ( ) House Tap
(X) Well Tap

Type of Sample:
(X) Raw ( ) Treated

Type of Treatment:
(X) None ( ) Lime
( ) Chlorinated ( ) Soda Ash
( ) Fluoridated ( ) Polyphosphate
( ) Filtered ( ) Water Softener
( ) Alum ( ) Other

Type of Sample:
( ) Regular ( ) Private
( ) Check (X) Special

WATER SYSTEM I.D. NUMBER (COPY FROM MAILING LABEL)
☐☐-☐☐-☐☐☐

State Drinking Water Parameters (Required)	Results			Optional Parameters (List as needed)	Results
Arsenic	<0.05	mg/l	2	Chloride	3
Barium	<0.1	mg/l	2	Copper	<0.05
Cadmium	<0.005	mg/l	3	Zinc	0.10
Chromium	<0.01	mg/l	2	Sodium	47.8
Fluoride	0.23	mg/l	2	Sulfate	4
Lead	<0.03	mg/l	2	Calcium	3.1
Mercury	<0.0002	mg/l	4	Phosphate	1.13
Nitrate (as N)	<0.05	mg/l	2		
Selenium	<0.005	mg/l	3		
Silver	<0.02	mg/l	2		
pH	7.4	units	1		
Iron	0.53	mg/l	2		
Manganese	<0.03	mg/l	2		

Date Received APR 5 1982 Date Reported 4/16/82 Reported By 6279

Date Analyzed Laboratory Number

DHS Form 2887 7/79
Laboratory

OWNER

Mildred A. Kerbaugh
Director

INSTRUCTIONS

Using typewriter or ball point pen, fill in all requested information on the top portion of form front. Please print legibly if typewriter is not available.

Before taking the sample, remove the two "freeze packs" from the styrofoam mailer and place in a freezer overnight. (SAMPLES NOT PRESERVED BY ICING DURING SHIPMENT WILL NOT BE TESTED.)

SAMPLE COLLECTION:

1) Remove the two 1-quart plastic containers and inflate by mouth, if uninflated.
2) Let the water (to be sampled) run for 5 minutes to assure that the water is from the distribution system.
3) Rinse each plastic container two or three times, and discard the water.
4) After rinsing, fill each container to within approximately one inch of top of the sampling container. Then cap the container securely. Check samples (see Types of Samples below), samples from non-community systems, and special samples may contain only one 1-quart sampling container, rather than two.

SAMPLE SHIPMENT:

1) After collection of the sample(s), replace the two frozen "freeze packs" in the styrofoam mailer.
2) Next, place the two 1-quart samples into the mailer and cap.
3) After capping the styrofoam mailer, place the report from (UNFOLDED) on top, then seal the cardboard box. Mail immediately to the State Laboratory using the supplied label. The sender is required to pay shipping costs.

The analysis takes several days for completion, and the report will be mailed back as soon as possible. Please do not call the laboratory to request "early" results, unless absolutely necessary.

LIMITS OF ALLOWABLE CONCENTRATIONS FOR DRINKING WATER ARE LISTED BELOW:

Parameters	Limits (mg/l)	Methods (EPA–600/4–79–020)
Arsenic	0.05	AA, furnace technique, pp. 206.2-1 – 206.2-2
Barium	1.0	AA, direct aspiration, pp. 208.1-1 – 208.1-2
Cadium	0.010	AA, furnace technique, pp. 213.2-1 – 213.2-2
Chromium	0.05	AA, furnace technique, pp. 218.2-1 – 218.2-2
Fluoride (Temperature Dependent)	1.4-2.4	Ion Selective Electrode, pp. 340.2-1 – 340.2-3
Lead	0.05	AA, furnace technique, pp. 239.2-1 – 239.2-2
Mercury	0.002	Manual Cold Vapor technique, pp. 245.1-1 – 245.1-6
Nitrate (as N)	10.0	Colorimetric, Brucine, pp. 352.1-1 – 352.1-3
Selenium	0.01	AA, furnace technique, pp. 270.2-1 – 270.2-3
Silver	0.05	AA. direct aspiration, pp. 272.1-1 – 272.1-2
Iron	0.3	AA, direct aspiration, pp. 236. 1-1 – 236.1-2
Manganese	0.05	AA, direct aspiration, pp. 243.1-1 – 243.1-2
pH	not less than 6.5 units	pH Electrometric, pp. 150.1-1 – 150.1-3

If sample concentrations are greater than the allowable concentrations, a check sample(s) will be required.

TYPES OF SAMPLES

Regular: A sample(s) submitted to meet the monitoring requirements of the North Carolina Drinking Water Act, GS 130 – Article 13D.

Check: A sample(s) submitted when a previous sample has exceeded the allowable concentration. The check sample should be taken from the same sample distribution tap as the previous sample.

Private: A sample(s) from a private water supply submitted by a licensed physician, sanitarian or other health department representative.

Special: A sample(s) submitted by an engineer working with the State or the E.P.A., a sample taken by the owner/operator of a water system for a new well, a landfill test well sample or other non-categorized sample.

STATE LABORATORY OF PUBLIC HEALTH
DIVISION OF HEALTH SERVICES
N.C. DEPARTMENT OF HUMAN RESOURCES
P.O. BOX 28047 – 306 N. WILMINGTON ST., RALEIGH 27611

RECEIVED APR 19 1982 HAZARDOUS WASTE MANAGEMENT BRANCH

INORGANIC CHEMICAL ANALYSES – PUBLIC WATER SYSTEM

Complete All Items Above Heavy Line
(See Instructions on Reverse Side)

Name of System: Starling Prop. (HW)

Address: _____

_____ ZIP _____

County: Pitt

Report To: Gary Babb or Tom Karnacki

Address: _____

_____ ZIP _____

Telephone Number: ( ) –

Collected By: Karnoski

Date Collected: 4-2-82 Time: 12:30 (AM) PM

Location of Sampling Point: Mercer Well
(Address where sample was collected)

Remarks: See below

Type of System:
( ) Community
(X) Non-Community

Source of Water:
(X) Ground ( ) Both
( ) Surface ( ) Purchased

Source of Sample:
( ) Distribution Tap ( ) House Tap
(X) Well Tap

Type of Sample:
(X) Raw ( ) Treated

Type of Treatment:
(X) None ( ) Lime
( ) Chlorinated ( ) Soda Ash
( ) Fluoridated ( ) Polyphosphate
( ) Filtered ( ) Water Softener
( ) Alum ( ) Other

Type of Sample:
( ) Regular ( ) Private
( ) Check (X) Special

WATER SYSTEM I.D. NUMBER (COPY FROM MAILING LABEL)
☐☐-☐☐-☐☐☐

State Drinking Water Parameters (Required)

	Results		
Arsenic	<0.05	mg/l	2
Barium	<0.1	mg/l	2
Cadmium	<0.005	mg/l	3
Chromium	<0.01	mg/l	2
Fluoride	<0.10	mg/l	2
Lead	<0.03	mg/l	2
Mercury	<0.0002	mg/l	4
Nitrate (as N)	1.05	mg/l	2
Selenium	<0.005	mg/l	3
Silver	<0.02	mg/l	2
pH	5.0	units	1
Iron	0.24	mg/l	2
Manganese	<0.03	mg/l	2

Optional Parameters (List as needed)

	Results
Chloride	30
Copper	0.05
Zinc	0.06
Sodium	17.9
Sulfate	18
Calcium	2.2
Phosphate	0.06

Date Received APR 8 1982 Date Reported 4/16/82 Reported By _____

Date Analyzed _____ Laboratory Number _____

DHS Form 2887 7/79
Laboratory

OWNER

Mildred A. Kerbaugh
Director

INSTRUCTIONS

Using typewriter or ball point pen, fill in all requested information on the top portion of form front. Please print legibly if typewriter is not available.

Before taking the sample, remove the two "freeze packs" from the styrofoam mailer and place in a freezer overnight. (SAMPLES NOT PRESERVED BY ICING DURING SHIPMENT WILL NOT BE TESTED.)

SAMPLE COLLECTION:

1) Remove the two 1-quart plastic containers and inflate by mouth, if uninflated.
2) Let the water (to be sampled) run for 5 minutes to assure that the water is from the distribution system.
3) Rinse each plastic container two or three times, and discard the water.
4) After rinsing, fill each container to within approximately one inch of top of the sampling container. Then cap the container securely. Check samples (see Types of Samples below), samples from non-community systems, and special samples may contain only one 1-quart sampling container, rather than two.

SAMPLE SHIPMENT:

1) After collection of the sample(s), replace the two frozen "freeze packs" in the styrofoam mailer.
2) Next, place the two 1-quart samples into the mailer and cap.
3) After capping the styrofoam mailer, place the report from (UNFOLDED) on top, then seal the cardboard box. Mail immediately to the State Laboratory using the supplied label. The sender is required to pay shipping costs.

The analysis takes several days for completion, and the report will be mailed back as soon as possible. Please do not call the laboratory to request "early" results, unless absolutely necessary.

LIMITS OF ALLOWABLE CONCENTRATIONS FOR DRINKING WATER ARE LISTED BELOW:

Parameters	Limits (mg/l)	Methods (EPA–600/4–79–020)
Arsenic	0.05	AA, furnace technique, pp. 206.2-1 – 206.2-2
Barium	1.0	AA, direct aspiration, pp. 208.1-1 – 208.1-2
Cadium	0.010	AA, furnace technique, pp. 213.2-1 – 213.2-2
Chromium	0.05	AA, furnace technique, pp. 218.2-1 – 218.2-2
Fluoride (Temperature Dependent)	1.4-2.4	Ion Selective Electrode, pp. 340.2-1 – 340.2-3
Lead	0.05	AA, furnace technique, pp. 239.2-1 – 239.2-2
Mercury	0.002	Manual Cold Vapor technique, pp. 245.1-1 – 245.1-6
Nitrate (as N)	10.0	Colorimetric, Brucine, pp. 352.1-1 – 352.1-3
Selenium	0.01	AA, furnace technique, pp. 270.2-1 – 270.2-3
Silver	0.05	AA. direct aspiration, pp. 272.1-1 – 272.1-2
Iron	0.3	AA, direct aspiration, pp. 236. 1-1 – 236.1-2
Manganese	0.05	AA, direct aspiration, pp. 243.1-1 – 243.1-2
pH	not less than 6.5 units	pH Electrometric, pp. 150.1-1 – 150.1-3

If sample concentrations are greater than the allowable concentrations, a check sample(s) will be required.

TYPES OF SAMPLES

Regular: A sample(s) submitted to meet the monitoring requirements of the North Carolina Drinking Water Act, GS 130 – Article 13D.

Check: A sample(s) submitted when a previous sample has exceeded the allowable concentration. The check sample should be taken from the same sample distribution tap as the previous sample.

Private: A sample(s) from a private water supply submitted by a licensed physician, sanitarian or other health department representative.

Special: A sample(s) submitted by an engineer working with the State or the E.P.A., a sample taken by the owner/operator of a water system for a new well, a landfill test well sample or other non-categorized sample.

STATE LABORATORY OF PUBLIC HEALTH
DIVISION OF HEALTH SERVICES
N.C. DEPARTMENT OF HUMAN RESOURCES
P.O. BOX 28047 – 306 N. WILMINGTON ST., RALEIGH 27611

RECEIVED
APR 19 1982
HAZARDOUS WASTE MANAGEMENT BRANCH
SOLID & HAZARDOUS WASTE

INORGANIC CHEMICAL ANALYSES – PUBLIC WATER SYSTEM

Complete All Items Above Heavy Line
(See Instructions on Reverse Side)

Name of System: Starling Prop. (HW)

Address: _____

_____ ZIP _____

County: Pitt

Report To: Gary Babb or Tom Karnoski

Address: _____

_____ ZIP _____

Telephone Number: ( ) –

Collected By: Karnoski

Date Collected: 4-2-82 Time: 12:45 (AM) PM

Location of Sampling Point: Fulford Well
(Address where sample was collected)

Remarks: See below

Type of System:
( ) Community
(X) Non-Community

Source of Water:
(X) Ground ( ) Both
( ) Surface ( ) Purchased

Source of Sample:
( ) Distribution Tap ( ) House Tap
(X) Well Tap

Type of Sample:
(X) Raw ( ) Treated

Type of Treatment:
(X) None ( ) Lime
( ) Chlorinated ( ) Soda Ash
( ) Fluoridated ( ) Polyphosphate
( ) Filtered ( ) Water Softener
( ) Alum ( ) Other

Type of Sample:
( ) Regular ( ) Private
( ) Check (X) Special

WATER SYSTEM I.D. NUMBER (COPY FROM MAILING LABEL)
☐☐-☐☐-☐☐☐

State Drinking Water Parameters (Required)

	Results		
Arsenic	<0.05	mg/l	2
Barium	0.2	mg/l	2
Cadmium	<0.005	mg/l	3
Chromium	<0.01	mg/l	2
Fluoride	0.23	mg/l	2
Lead	<0.03	mg/l	2
Mercury	<0.0002	mg/l	4
Nitrate (as N)	1.95	mg/l	2
Selenium	<0.005	mg/l	3
Silver	<0.02	mg/l	2
pH	7.4	units	1
Iron	1.07	mg/l	2
Manganese	0.06 ?	mg/l	2

Optional Parameters (List as needed)

	Results
Chloride	Interference
Copper	<0.05
Zinc	0.10
Sodium	4.7
Sulfate	21
Calcium	37.0
Phosphate	0.75

APR 5 1982

Date Received _____ Date Reported 4/16/82 Reported By _____

Date Analyzed _____ Laboratory Number _____ S2279

DHS Form 2887 7/79
Laboratory

OWNER

Mildred A. Kerbaugh
Director

INSTRUCTIONS

Using typewriter or ball point pen, fill in all requested information on the top portion of form front. Please print legibly if typewriter is not available.

Before taking the sample, remove the two "freeze packs" from the styrofoam mailer and place in a freezer overnight. (SAMPLES NOT PRESERVED BY ICING DURING SHIPMENT WILL NOT BE TESTED.)

SAMPLE COLLECTION:

1) Remove the two 1-quart plastic containers and inflate by mouth, if uninflated.
2) Let the water (to be sampled) run for 5 minutes to assure that the water is from the distribution system.
3) Rinse each plastic container two or three times, and discard the water.
4) After rinsing, fill each container to within approximately one inch of top of the sampling container. Then cap the container securely. Check samples (see Types of Samples below), samples from non-community systems, and special samples may contain only one 1-quart sampling container, rather than two.

SAMPLE SHIPMENT:

1) After collection of the sample(s), replace the two frozen "freeze packs" in the styrofoam mailer.
2) Next, place the two 1-quart samples into the mailer and cap.
3) After capping the styrofoam mailer, place the report from (UNFOLDED) on top, then seal the cardboard box. Mail immediately to the State Laboratory using the supplied label. The sender is required to pay shipping costs.

The analysis takes several days for completion, and the report will be mailed back as soon as possible. Please do not call the laboratory to request "early" results, unless absolutely necessary.

LIMITS OF ALLOWABLE CONCENTRATIONS FOR DRINKING WATER ARE LISTED BELOW:

Parameters	Limits (mg/l)	Methods (EPA–600/4–79–020)
Arsenic	0.05	AA, furnace technique, pp. 206.2-1 – 206.2-2
Barium	1.0	AA, direct aspiration, pp. 208.1-1 – 208.1-2
Cadium	0.010	AA, furnace technique, pp. 213.2-1 – 213.2-2
Chromium	0.05	AA, furnace technique, pp. 218.2-1 – 218.2-2
Fluoride (Temperature Dependent)	1.4-2.4	Ion Selective Electrode, pp. 340.2-1 – 340.2-3
Lead	0.05	AA, furnace technique, pp. 239.2-1 – 239.2-2
Mercury	0.002	Manual Cold Vapor technique, pp. 245.1-1 – 245.1-6
Nitrate (as N)	10.0	Colorimetric, Brucine, pp. 352.1-1 – 352.1-3
Selenium	0.01	AA, furnace technique, pp. 270.2-1 – 270.2-3
Silver	0.05	AA. direct aspiration, pp. 272.1-1 – 272.1-2
Iron	0.3	AA, direct aspiration, pp. 236. 1-1 – 236.1-2
Manganese	0.05	AA, direct aspiration, pp. 243.1-1 – 243.1-2
pH	not less than 6.5 units	pH Electrometric, pp. 150.1-1 – 150.1-3

If sample concentrations are greater than the allowable concentrations, a check sample(s) will be required.

TYPES OF SAMPLES

Regular: A sample(s) submitted to meet the monitoring requirements of the North Carolina Drinking Water Act, GS 130 – Article 13D.

Check: A sample(s) submitted when a previous sample has exceeded the allowable concentration. The check sample should be taken from the same sample distribution tap as the previous sample.

Private: A sample(s) from a private water supply submitted by a licensed physician, sanitarian or other health department representative.

Special: A sample(s) submitted by an engineer working with the State or the E.P.A., a sample taken by the owner/operator of a water system for a new well, a landfill test well sample or other non-categorized sample.

STATE LABORATORY OF PUBLIC HEALTH
DIVISION OF HEALTH SERVICES
N.C. DEPARTMENT OF HUMAN RESOURCES
P.O. BOX 28047 – 306 N. WILMINGTON ST., RALEIGH 27611

RECEIVED APR 1 SOLID & HAZARDOUS WASTE MANAGEMENT BRANCH

INORGANIC CHEMICAL ANALYSES – PUBLIC WATER SYSTEM

Complete All Items Above Heavy Line
(See Instructions on Reverse Side)

Name of System: Starling Prop. (HW)

Address: _____

_____ ZIP _____

County: Pitt

Report To: Gary Babb or Tom Karwoski

Address: _____

_____ ZIP _____

Telephone Number: ( ) –

Collected By: Babb

Date Collected: 4-2-82 Time: 11:45 AM PM

Location of Sampling Point: Well at hog lot
(Address where sample was collected)

Remarks: Analyze for parameters as indicated below

Type of System:
( ) Community
(X) Non-Community

Source of Water:
(X) Ground ( ) Both
( ) Surface ( ) Purchased

Source of Sample:
( ) Distribution Tap ( ) House Tap
(X) Well Tap

Type of Sample:
(X) Raw ( ) Treated

Type of Treatment:
(X) None ( ) Lime
( ) Chlorinated ( ) Soda Ash
( ) Fluoridated ( ) Polyphosphate
( ) Filtered ( ) Water Softener
( ) Alum ( ) Other

Type of Sample:
( ) Regular ( ) Private
( ) Check (X) Special

WATER SYSTEM I.D. NUMBER (COPY FROM MAILING LABEL)
☐☐-☐☐-☐☐☐

State Drinking Water Parameters (Required)

	Results		
Arsenic	<0.05	mg/l	2
Barium	<0.1	mg/l	2
Cadmium	<0.005	mg/l	3
Chromium	<.001	mg/l	2
Fluoride	0.23	mg/l	2
Lead	<0.03	mg/l	2
Mercury	<0.0002	mg/l	4
Nitrate (as N)	<0.05	mg/l	2
Selenium	<0.005	mg/l	3
Silver	<0.02	mg/l	2
pH	7.0	units	1
Iron	0.14	mg/l	2
Manganese	<0.03	mg/l	2

Optional Parameters (List as needed)

	Results
Chloride	3
Copper	<0.05
Zinc	0.14
Sodium	49.9
Sulfate	6
Calcium	3.1
Phosphate	0.87

APR 5 1982

Date Received _____ Date Reported 4/16/82 Reported By _____

Date Analyzed _____ Laboratory Number 6276

DHS Form 2887 7/79
Laboratory

OWNER

Mildred A. Kerbaugh
Director

INSTRUCTIONS

Using typewriter or ball point pen, fill in all requested information on the top portion of form front. Please print legibly if typewriter is not available.

Before taking the sample, remove the two "freeze packs" from the styrofoam mailer and place in a freezer overnight. (SAMPLES NOT PRESERVED BY ICING DURING SHIPMENT WILL NOT BE TESTED.)

SAMPLE COLLECTION:

1) Remove the two 1-quart plastic containers and inflate by mouth, if uninflated.
2) Let the water (to be sampled) run for 5 minutes to assure that the water is from the distribution system.
3) Rinse each plastic container two or three times, and discard the water.
4) After rinsing, fill each container to within approximately one inch of top of the sampling container. Then cap the container securely. Check samples (see Types of Samples below), samples from non-community systems, and special samples may contain only one 1-quart sampling container, rather than two.

SAMPLE SHIPMENT:

1) After collection of the sample(s), replace the two frozen "freeze packs" in the styrofoam mailer.
2) Next, place the two 1-quart samples into the mailer and cap.
3) After capping the styrofoam mailer, place the report from (UNFOLDED) on top, then seal the cardboard box. Mail immediately to the State Laboratory using the supplied label. The sender is required to pay shipping costs.

The analysis takes several days for completion, and the report will be mailed back as soon as possible. Please do not call the laboratory to request "early" results, unless absolutely necessary.

LIMITS OF ALLOWABLE CONCENTRATIONS FOR DRINKING WATER ARE LISTED BELOW:

Parameters	Limits (mg/l)	Methods (EPA–600/4–79–020)
Arsenic	0.05	AA, furnace technique, pp. 206.2-1 – 206.2-2
Barium	1.0	AA, direct aspiration, pp. 208.1-1 – 208.1-2
Cadium	0.010	AA, furnace technique, pp. 213.2-1 – 213.2-2
Chromium	0.05	AA, furnace technique, pp. 218.2-1 – 218.2-2
Fluoride (Temperature Dependent)	1.4-2.4	Ion Selective Electrode, pp. 340.2-1 – 340.2-3
Lead	0.05	AA, furnace technique, pp. 239.2-1 – 239.2-2
Mercury	0.002	Manual Cold Vapor technique, pp. 245.1-1 – 245.1-6
Nitrate (as N)	10.0	Colorimetric, Brucine, pp. 352.1-1 – 352.1-3
Selenium	0.01	AA, furnace technique, pp. 270.2-1 – 270.2-3
Silver	0.05	AA. direct aspiration, pp. 272.1-1 – 272.1-2
Iron	0.3	AA, direct aspiration, pp. 236. 1-1 – 236.1-2
Manganese	0.05	AA, direct aspiration, pp. 243.1-1 – 243.1-2
pH	not less than 6.5 units	pH Electrometric, pp. 150.1-1 – 150.1-3

If sample concentrations are greater than the allowable concentrations, a check sample(s) will be required.

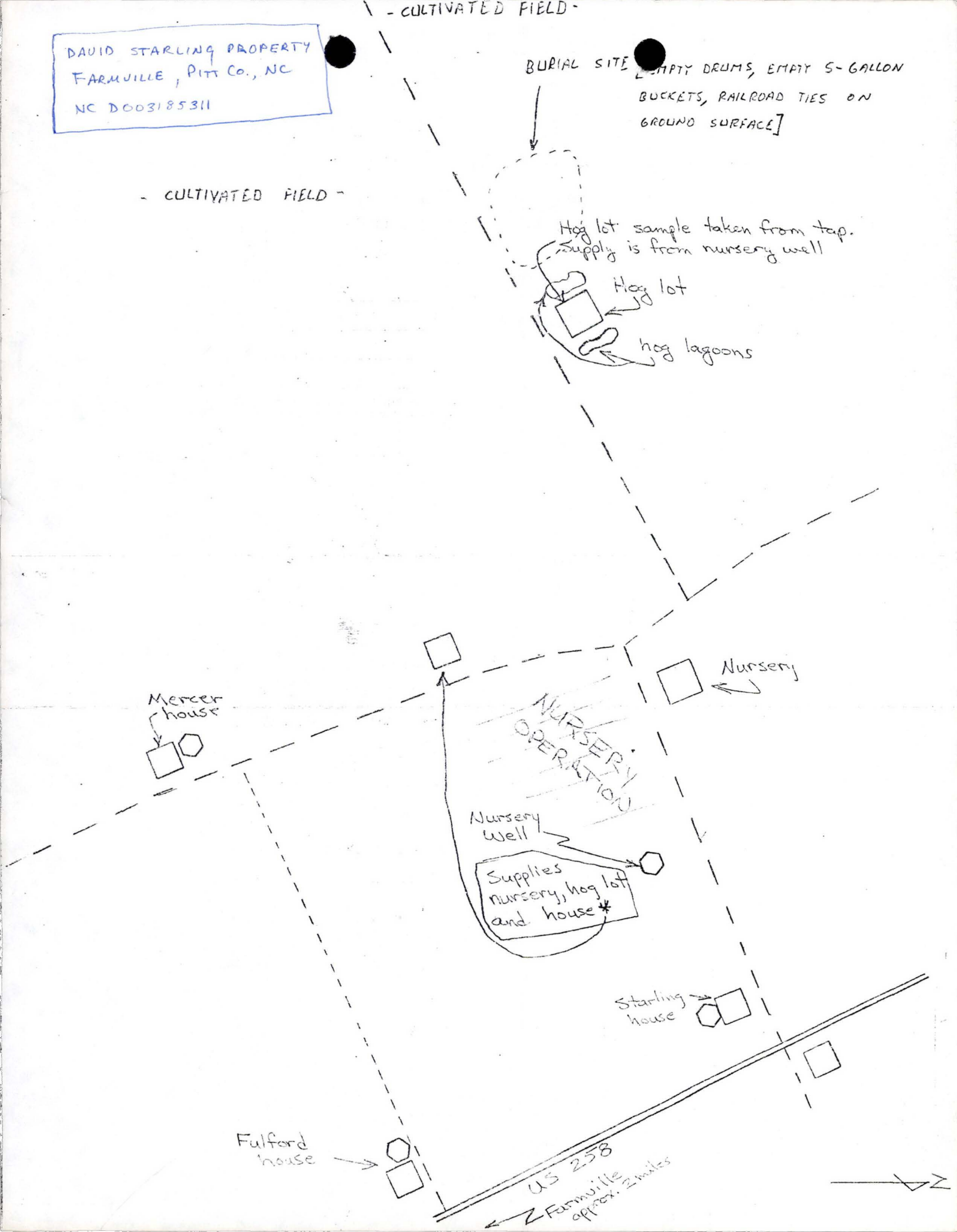
TYPES OF SAMPLES

Regular: A sample(s) submitted to meet the monitoring requirements of the North Carolina Drinking Water Act, GS 130 – Article 13D.

Check: A sample(s) submitted when a previous sample has exceeded the allowable concentration. The check sample should be taken from the same sample distribution tap as the previous sample.

Private: A sample(s) from a private water supply submitted by a licensed physician, sanitarian or other health department representative.

Special: A sample(s) submitted by an engineer working with the State or the E.P.A., a sample taken by the owner/operator of a water system for a new well, a landfill test well sample or other non-categorized sample.


DAVID STARLING PROPERTY
FARMVILLE, PITT CO., NC
NC D003185311
- CULTIVATED FIELD -
BURIAL SITE [EMPTY DRUMS, EMPTY 5-GALLON BUCKETS, RAILROAD TIES ON GROUND SURFACE]
- CULTIVATED FIELD -
Hog lot sample taken from tap. Supply is from nursery well
Hog lot
hog lagoons
Nursery
Mercer house
NURSERY OPERATION
Nursery Well
Supplies nursery, hog lot and house *
Starling house
Fulford house
US 258
Farmville approx. 2 miles

HYDROLOGIC MONITORING

COUNTY Pitt
SITE Druid Starling Prop.
PERMIT NO. Superfund Site

DATE 4-2-82
TIME 11:30 AM
WEATHER Fair - Warm 80°F

SAMPLE NOS. see below
SITE CONTACT

TYPE OF SAMPLE:
- Groundwater ✓
- Surface Water
- Leachate
- Other

WELL INFORMATION:	Well at hog lot	Well at nursery	Starling house	Fulford house	Mercer house
Type Casing	same as well at nursery	-	-	-	-
Diameter		-	-	-	-
Depth		200'+	80-90'	?	30' dug
Water Level		-	-	-	-
Locking Cap		-	-	-	-
Keys With		-	-	-	-

FIELD PARAMETERS:					
Temperature °C	15.9	19.6	18.1	18.5	15.0
pH	6.4	6.4	6.8	6.2	4.4
Conductivity	360	250	260	250	159
Dissolved Solids	-	-	--	-	-
Other					

LABORATORY PARAMETERS:
- Inorganic ✓
- Organic
- Microbiological
- Radiation
- Other

REMARKS: See back for well locations

SAMPLE TAKEN BY: Andy Bulf

RESULTS OF ANALYSES FOR:

Fulford Well,
March 17, 1982

Environment I, Inc.
114 OAKMONT DRIVE, SUITE 3
BOX 7085
GREENVILLE, NORTH CAROLINA
27834
(919) 756-6208

ENVIRONMENT I

				Form MR-1.0 Column Numbers
INFLUENT	pH	Units	4	
	B.O.D.	mg/l	7	
	Total Residue	mg/l	9	
	Total Suspended Residue	mg/l	10	
	Ammonia Nitrogen	mg/l	8	
	Total Kjeldahl Nitrogen	mg/l	19	
	Detergents (MBAS)	mg/l		
	Grease & Oil	mg/l		

				Form MR-1.1 Column Numbers
EFFLUENT	pH	Units	8	
	B.O.D.	mg/l	11	
	C.O.D.	mg/l	12	
	Total Residue	mg/l	14	
	Total Suspended Residue	mg/l	15	
	Ammonia Nitrogen	mg/l	13	
	Total Kjeldahl Nitrogen	mg/l	23	
	Nitrate Nitrogen	mg/l		
	Total Phosphate (as P)	mg/l	16	
	Grease & Oil	mg/l	17	
	Phenols	ug/l		
	Sulfides	mg/l		
	Fecal Coliform, MF	/100 ml	18	
	Total Coliform, MPN	/100 ml		
	Detergents (MBAS)	mg/l		

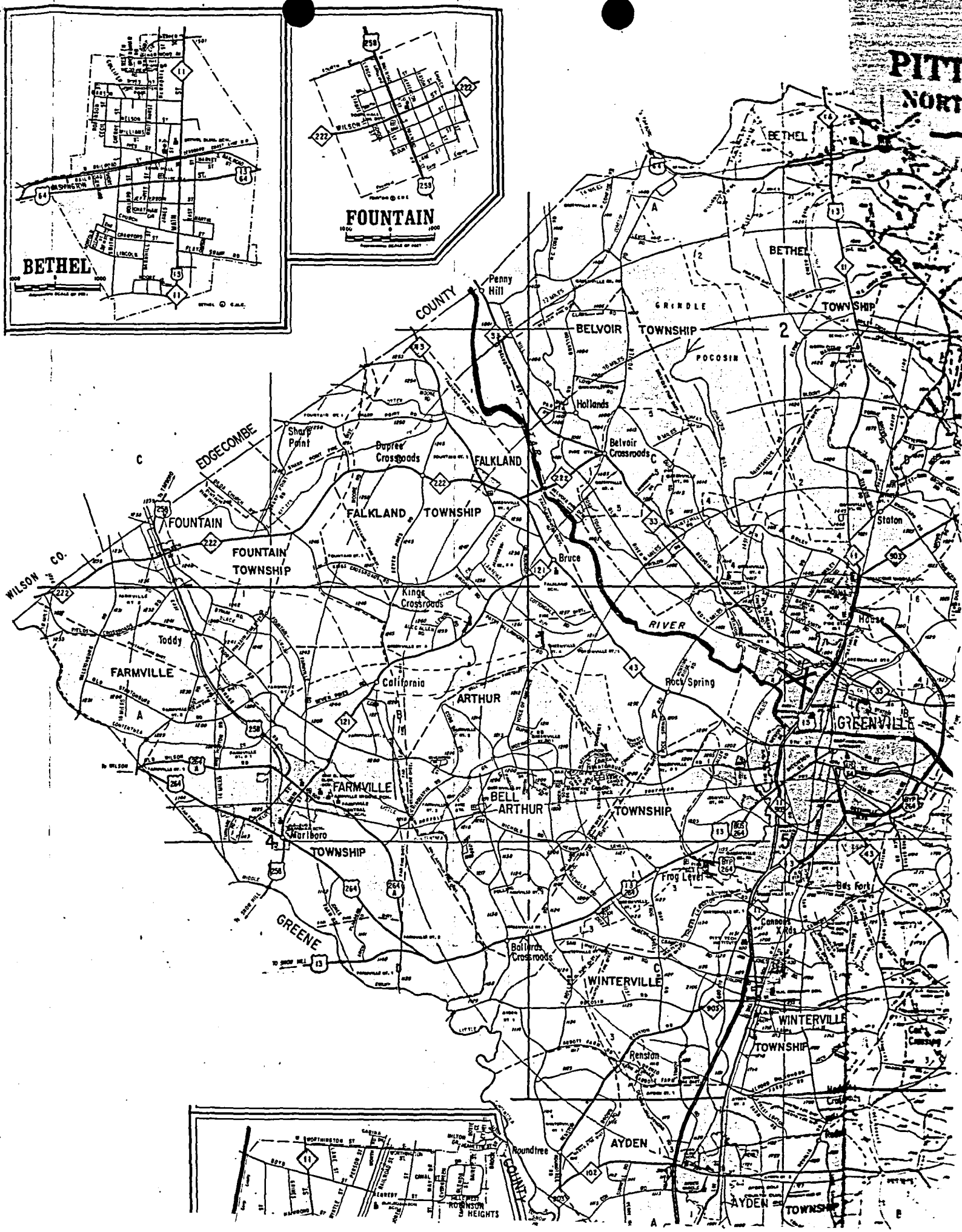
				Form MR-1.4 Column Numbers
UPSTREAM	pH	Units	5	
	B.O.D.	mg/l	6	
	C.O.D.	mg/l	7	
	Fecal Coliform, MF	/100 ml	8	
	Total Coliform, MPN	/100 ml	9	
	Ammonia Nitrogen	mg/l		
	Total Kjeldahl Nitrogen	mg/l		
	Nitrate Nitrogen	mg/l		
	Total Phosphate (as P)	mg/l	21	

				Form MR-1.4 Column Numbers
DOWNSTREAM	pH	Units	5	
	B.O.D.	mg/l	6	
	C.O.D.	mg/l	7	
	Fecal Coliform, MF	/100 ml	8	
	Total Coliform, MPN	/100 ml	9	
	Ammonia Nitrogen	mg/l		
	Total Kjeldahl Nitrogen	mg/l		
	Nitrate Nitrogen	mg/l		
	Total Phosphate (as P)	mg/l	21	

Chromium, Hexavalent		ug/l	
Chromium, Total	<10	ug/l	
Zinc	90	ug/l	
Copper	60	ug/l	
Nickel	40	ug/l	
Aluminum		ug/l	
Iron	520	ug/l	
Lead	<10	ug/l	
Cadmium	<10	ug/l	
Mercury	15	ug/l	

OTHER


See Inset "A" for Detail
N
PT. NO. 65
90.34
89.48
PT. NO. 64
90.18
89.23
PT. NO. 63
89.29
88.04
PT. NO. 62
88.19
87.3
PT. NO. 43
BORE NO 2
92.59
PT. NO. 86
MW 3
93.91
PT. NO. 87
MW 4
93.75
PT. NO. 44
93.12
91.82
PT. NO. 85
MW 2
93.32
PT. NO. 34
PT. NO. 84
MW 1
92.98
PT. NO. 42
WELL NO. 1
93.03
PT. NO. 40
BORE NO. 1
91.82
PT. NO. 39
PT. NO. 41
WELL NO. 2
93.68
PT. NO. 52
89.04
87.71
STARLING
DISPOSAL
SITE
SUBSURFACE DRAINS
SIGN
PT. NO. 33
IRON
SET
PT. NO. 36
WELL NO. 4
91.61
PT. NO. 35
WELL NO. 5
91.83
PT. NO. 50
90.38
89.03
PT. NO. 51
87.04
85.86
PT. NO. 54
87.65
86.38
92.9
93.0
92.7
92.5
92.0
92.1
91.9
91.8
91.6
91.4
91.2
91.0
90.4
90.3


BETHEL
FOUNTAIN
PITT
NORTH
COUNTY
Penny Hill
GRIMDLE
TOWNSHIP
BELVOIR
TOWNSHIP
POCOSIN
BETHEL
Hollands
Belvoir Crossroads
EDGECOMBE
Sharp Point
Duplee Crossroads
FALKLAND
FALKLAND TOWNSHIP
FOUNTAIN
FOUNTAIN TOWNSHIP
WILSON CO.
Bruce
Staton
Kings Crossroads
RIVER
Toddy
FARMVILLE
California
ARTHUR
Rock Spring
GREENVILLE
FARMVILLE
BELL ARTHUR
TOWNSHIP
Marlboro
TOWNSHIP
Frog Level
Bells Fork
GREENE
Ballards Crossroads
WINTERVILLE
WINTERVILLE TOWNSHIP
Renston
AYDEN
Roundtree
AYDEN TOWNSHIP
ROBINSON HEIGHTS

Date: February 5, 1982 16

County: [redacted]

Notifier's name and address: F. M. Charles

270 Park Ave., New York, NY 10017

Contact's name: H. M. Parker (212) 551-4515

Site name and address: David Starling Property

Hwy 258N Farmbille, NC 27828

Site location:

Type of waste: sludges containing lead, mercury and chrome

↳ Al Nash @ Union Carbide said UC didn't actually report content of sludge (as shown on EPA notice submitted by F. M. Charles).

What process generated the waste? Battery production

Volume of waste: 1100 gallons

Method of storage or disposal: burial on site

Dates of waste activity: 1972

Site history: F. M. Charles notified that Union Carbide transported sludge material to private property where it was subsequently buried. No further information was made available by the contact person.

DEM EPA

*The preceding information is based on preliminary data supplied by the Environmental Protection Agency, and not on detailed site investigations.

1/

2 Oct 84
- DMD

DAVID STARLING PROPERTY (file) NCD 0031 85311

① Barium carb & sulfate and Ba Cr-nic acid? from Union Carbide
② chromium wastewater " "
} these wastes were disposed of on Greenville Watershed.

** ③ See list of companies given in Ecology & Environment, Inc letter, 19 April 82

* → Union Carbide, 19 July 72, sending $BaCO_3$ waste to TRIANGLE BRICK COMPANY of Durham, NC. All future $BaCO_3$ would go to Triangle Brick, as well.

← ECOLOGY & ENVIRONMENT, INC: letter, 19 April 82
recommend EPA SIs for:
① two (2) BEAUNIT CORP. plants in Hamilton & Clinton, NC.
② David STARLING PROPERTY, Farmville, NC. (owners were ~~para~~ unable to arrange for inspection time ~~para~~ during period when E & E, Inc was conducting their work.

* memo from TOM KARNOSKI: Jan 4, 84
concerns bidding for clean-up of STARLING PROPERTY ($BaCO_3$ and Ba Cr) Tom has visited site.

* report, Feb 5 '82:
waste: sludges containing Pb, Hg, Cr., 1100 gals.;
from: UNION CARBIDE, 1972

** Gary Baluh, Hydrologic Monitoring Report, 1-2-82
- 5 wells monitored
→ - EPA safe drinking H_2O levels exceeded for Ca, Cr, Ag

2/

2 Oct 84
- DMD

DAVID STARLING PROPERTY (file)

NCD 003185311
PITT Co., NC

UNION CARBIDE, Greenville, NC 919/756-2171, Russell Gibbs
(Union Carbide, Rocky River Office)

telecommunication!

'84, January - several companies bidding on clean-up inventory of haz waste sites in NC

Gibbs said that:

① Law Engineering: A) ~~identify site for addition~~
g-H_2O study

B) surface grading
runoff study

misc. surface material must be removed.

farming, machine shops, nursery, etc. ← Starlings income

Ba Cr, $BaCO_3$ ← @ site

REQUEST → any additional info they have (magnetometer results, etc.; V100 gals?)
IOT help us evaluate site.

3/

3 Oct. 84
DMD

DAVID STARLING PROPERTT (FILE) NCD003185311

(Albert M NASH)

corporate environmental coordinator
Union Carbide Corporation
Battery Products Division
PO ~~Box~~ 16000
Rocky River, OH 44116

* AL NASH, Corporate Environmental Coordinator Rocky River, OHIO

tel (216) 333-0500

NOTES: FROM FRANK MOORE RE. PHONING/WRITING:

include 3012 scope
say that EPA requires info IAT document site

✓ history - When

✓ g. H_2O monitoring results which are up to date

✓ magnetometer

✓ site geology

✓ types of waste & amounts

tell that: we arent a regulatory or enforcement program; rather we place a priority rating on site and document

✓ do you have a formal program outlined / if you have program set up to evaluate site by private consultant.

1) tell that ^ site has never been fully documented

2) tell that we'll send a letter to EPA

3) we want ^ copy of their original notification

* GET HIS ADDRESS (...)

*

4

3 oct '84
DMD

DAVID STARLING PROPERTY, Farmville, Pitt Co., NC NCD 0031 85311

Questions about site : Envrion Coordinator { separate letter on possibility of site clean-up @ Wilkinson Farm.

① waste types and amounts :
BaCr
$BaSO_4$ and $BaCO_4$ } 1971 — material from 1 mile above G'ville Water Intake, Tar R.?
heavy metal sludges → Pb, Hg, Cr (1100 gals), 1972 — Triangle Brick Co., Durham, NC, 1972 ; also company in Steubenville, OH. 1971

early - mid 70's
no longer in existence

② time frame for site use :

who is F.M. Charles → heavy metal sludge, 1972, reported by F.M. Charles,
↳ director for corporate Envrion Affairs group for Union Carbide. All of Union Carbide's notifications were submitted by this Corp. Envrion Affairs Group.

③ original nolification forms (F.M. Charles re 1100 gals "heavy metal sludge")

tel 216/333-0500
PO Box 16000
Rocky River, OH
44116
Union Carbide Corp
Battery Products Div
Albert M. Nash, corporate environmental coordinator

REASON WASTE WAS GENERATED:

① Union Carbide had contract to manufacture Magnesium batteries for the military during early - mid 70's.

② Following is description of waste generated:

A) they used (manufactured?) magnesium cans, which they chromated to prevent corrosion.

B) this yielded : chromate bath waste

C) they obtained : state permit for discharge

D) More specifically the waste is such : (reactions)

$BaCO_3$ + Chromate waste → $BaCO_3$ precip + $BaCO_3$,

↳ 50 : 50 mixture of the above = final waste product (according to Al Nash).

5/

3 Oct. '84
DMD

DAVID STARLING PROPERTY (file) NCD003185311

Union Carbide didn't specify types of metals; rather, EPA, media, etc did.

eg. Daugherty Chemical – 1980 permit Mary Daugherty – penlight batteries – Daugherty Chem amassed

Aug 2 1982 to Tom Karnoski from Al Nash.

Russell Gibbs conversation w Al Nash on 2 Oct '84 concerning Starling Property (and Wilkinson Farm?):

Daugherty – baking process – extracting nutrients – viable operation (either food or fertilizer) – trouble getting loan)
20 years ago – not sure if bought or purchased from Union Carbide.

Scrap batteries – NOT hazardous by RCRA.

Al Nash will strongly consider cleaning-up site; I'll write him as soon as I get all necessary info (on such thing as clean-up standards, etc.)

↓ clean-up: what's their extent of problem

7/

19 Oct '84
DMO

DAVID STARLING PROPERTY NC D003185311

CHEM ANALYSIS FOR WELLS NEAR SITES (REMARKS)

(see Environment 1, Inc. results & state lab results in this file)

Remarks show where drinking-H_2O standards are not below par.

(1) Well @ Hog Lot - (depth unknown, 200'+ ?)
0.2 µg/l (.0002 mg/l) Hg (Union Carbide)

Union Carbide also did analysis; all their results are much lower

(2) Well @ Nursery - (200'+)
0.53 mg/l Fe (State lab)

(3) Starling House - (80'-90')
0.38 mg/l Fe (State lab)

(4) Fulford House - (depth unknown)
1.07 mg/l Fe (State lab) ⟷ 520 µg/l (.52 mg/l) Fe (Environ. & Inc)
<0.06 mg/l Mn (" ") 15 µg/l (.015 mg/l) Hg (")

(5) Mercer House - (30' dug)

Field Union Carbide

UNION CARBIDE CORPORATION
CONSUMER PRODUCTS DIVISION
P. O. BOX 1547, GREENVILLE, NORTH CAROLINA 27834

July 19, 1972

Dr. Robert D. May
Pitt County Health Department
P.O. Box 1903
Greenville, North Carolina 27834

Subject: Disposal of Barium Carbonate Waste

Dear Dr. May:

This is to advise that we have been negotiating on our subject waste material with the Triangle Brick Company of Durham, North Carolina. They have run a sample lot of brick containing some of the material and find it interesting enough to take all our present inventory plus continuing supplies generated here for an indefinite period. Triangle Brick would transport the material in their trucks and take possession at our dock.

We understand that the brick process has the tacit approval of Mr. Page Benton and Mr. Knight of Water and Air Resources in Raleigh. When we commence shipping to this new source, which we anticipate to be next week, we will cease shipments to Steubenville, Ohio.

Your acknowledgment would be appreciated. If you have any questions please advise.

Very truly yours,

H. A. Allen, Jr

HAAjr/e

cc: Messrs. F. T. Motsinger/G. B. McClanahan
H. J. Taylor
S. R. Brooks/D. E. Adams
A. C. Galon

7-24-72

Marshall:
Air & Water in Greenville are aware of this, however a long period of testing will be necessary. We are sending this to you for information & Recommendations

December 30, 1971

Mr. F. T. Motsinger, Plant Manager
Union Carbide Corporation
P. O. Box 1547
Greenville, North Carolina 27834

SUBJECT: Extension of Permit No. 1791
Union Carbide Corporation
Pitt County

Dear Mr. Motsinger:

An inspection of the Union Carbide chromium wastewater treatment facility has been made by personnel of this Department. The capacity of the facility is 80,000 gpd with the treated effluent going into the Greenville sewerage system.

The inspection indicated:

(1) The present daily flow is 29,000 gpd.

(2) The final effluent is treated to an acceptable degree.

(3) The plant is properly operated and maintained.

(4) At present the plant effluent is not detrimental to the Greenville sewerage system or the Tar River.

Based on this inspection and review of the subject matter, Permit No. 1791 is hereby extended from December 31, 1971, to December 31, 1972, subject to the same conditions and limitations as specified in the original Permit. Also, this Permit extension is subject to conditions of sludge disposal as stated by you to Mr. D. L. Coburn, Chief, Water Quality Division, by letter dated December 6, 1971.

Sincerely yours,

E. C. Hubbard
Assistant Director

cc: Mr. H. S. Taylor
Pitt County Health Dept.
Mr. T. F. Armstrong
Mr. F. S. Long

FSL:llh

STATE OF NORTH CAROLINA
DEPARTMENT OF NATURAL AND ECONOMIC RESOURCES
Box 27687 Raleigh 27611

CHARLES W. BRADSHAW, JR.
SECRETARY

ROBERT W. SCOTT
GOVERNOR

Office of Water and Air Resources
GEORGE E. PICKETT, DIRECTOR
TELEPHONE 829-3003

December 29, 1972

BOD
Chemical Content
P-H, etc

Mr. F. T. Motsinger, Plant Manager
Union Carbide Corporation
P. O. Box 1547
Greenville, North Carolina 27834

SUBJECT: Extension of Permit No. 1791
Union Carbide Corporation
Pitt County

Dear Mr. Motsinger:

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The inspection indicated:

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(2) The final effluent is treated to an acceptable degree.

(3) At present the plant effluent is not detrimental to the Greenville sewerage system or the Tar River.

Based on this inspection and review of the subject matter, Permit No. 1791 is hereby extended from December 31, 1972, to December 31, 1975, subject to the same conditions and limitations as specified in the original Permit.

Sincerely yours,

E. C. Hubbard
Assistant Director

FSL/bfh
cc: Mr. H. J. Taylor
Pitt County Health Department
Mr. A. C. Turnage, Jr.
Technical Services
Engineering Branch

UNION CARBIDE CORPORATION
CONSUMER PRODUCTS DIVISION
P. O. BOX 1547, GREENVILLE, NORTH CAROLINA 27834

December 28, 1971

Dr. Robert D. May
Pitt County Health Department
Post Office Box 1903
Greenville, North Carolina 27834

Subject: Disposal of Barium Carbonate Waste

Dear Dr. May:

We are writing to fulfill our obligation of informing you of our intentions regarding subject waste disposal.

We have succeeded in locating an Ohio concern interested in converting the material into a sellable product. In the very near future we will arrange to ship one trial truck load to: Barium and Chemical Inc., Steubenville, Ohio.

If their operation is successful, we may wish to dispose of our entire supply in a like manner. We are having our Traffic Department prescribe transportation method on this shipment.

If we don't hear anything to the contrary from your department in the next few days, we shall proceed with the above plans.

Very truly yours,

H. A. Allen, Jr.
Purchasing Agent

fm

cc: Messrs. F. T. Motsinger/G. B. McClanahan
H. J. Taylor
A. C. Galon
E. E. Ledger - Parma Research

NORTH CAROLINA

STATE BOARD OF HEALTH

RALEIGH

November 18, 1971

Dr. Robert D. May
Health Director
Pitt County Health Department
Post Office Box 1903
Greenville, North Carolina 27834

Dear Dr. May:

I am attaching a copy of the report that was prepared by Mr. O. W. Strickland, Supervisor, Solid Waste Management, Solid Waste and Vector Control Section, concerning the disposal of toxic wastes.

I wish to express my appreciation for the cooperation and assistance that your personnel provided in the recent problem dealing with the disposal of toxic wastes on the Greenville Watershed. I feel that their alertness in discovering the improper disposal and the immediate steps taken to block possible drainage into the Greenville Watershed prevented a serious public health problem.

Very truly yours,

Marshall Staton

Marshall Staton, Director
Sanitary Engineering Division

Attachment
cc: Mr. Willie Pate
Mr. James R. Stocks

STATE BOARD OF HEALTH
SANITARY ENGINEERING DIVISION
RALEIGH, NORTH CAROLINA

REPORT OF INVESTIGATION OR INSPECTION OF Disposal of Barium

Place visited Pitt County Date November 4,5, and 6 19 71

Address Greenville, N. C. Time spent 3 days

By whom O. W. Strickland, Supervisor, Solid Waste Management, Solid Waste & Vector Control Section, Sanitary Engineering Division, N. C. State Board of Health

Persons contacted ✓ Mr. Willie Pate and Mr. James R. Stocks
(Owner, agent, tenant, manager, other)

Reason for visit To investigate disposal of Barium Sulfate and Barium Carbonate

Copies to: Dr. Robert D. May, Health Director, Pitt County Health Department, Greenville, N.C
Mr. Charles Horne, Director, Greenville Utilities Commission, Greenville, N. C.
Mr. F. T. Motsinger, Plant Manager, Union Carbide Company, Greenville, N. C.
Mr. A. C. Turnage, Jr., N. C. Dept. of Air and Water, Greenville, N. C.

REPORT:

A conference was held at 8:30 A.M. on November 4, 1971, in the office of the Environmental Health Section, Pitt County Health Department, Greenville, North Carolina, to discuss the removal of eighty-one 55-gallon barrels and an undetermined number of 5-gallon containers of Barium Sulfate and Barium Carbonate from a site located on the Tar River one mile above the Greenville water intake. Those in attendance at this meeting were:

Mr. Charles Horne, Director, Greenville Utilities Commission, Greenville, N. C.
Mr. J. Rex Voorhees, Superintendent of the Water and Sewer Department, Greenville Utilities Commission, Greenville, N. C.
Mr. R. S. Taylor, Office of Water and Air Resources, Greenville, N. C.
Mr. James R. Stocks, Pitt County Health Department, Greenville
Mr. A. C. Turnage, Jr., N. C. Department of Water and Air Resources, Greenville, N. C.
Mr. W. M. Pate, Pitt County Health Department, Greenville, N. C.
Mr. Michael P. Bell, N. C. State Board of Health, Greenville Regional Office, Greenville, N. C.

From this conference came the agreement that all the containers and as much of their contents as possible would be returned to Union Carbide. The remaining Barium and as much earth as necessary would be removed and placed at the Greenville sludge disposal area.

The site located near the wildlife access area on the property of Kenneth Randolph was visited. It was observed that this area, as well as an adjacent borrow pit, owned by the North Carolina Wildlife Commission has been used for a dump for many years. The land of Mr. Randolph has also been used for disposal of sludge from septic tanks over a period of time.

Mr. Pate, Mr. Stocks, and I visited the Union Carbide Company where we conferred with Mr. F. T. Motsinger, Plant Manager. The company was informed of the decision reached by the above listed people attending the 8:30 A.M. conference. Mr. Motsinger agreed to follow the recommendations.

pH-1
co unl
landfill

Mr. C. W. Snell, Jr., Division Engineer, North Carolina Highway Commission, Greenville, North Carolina, was contacted at his office in Greenville. He accompanied Mr. Pate, Mr. Stocks, and I on an inspection of the State Highway Department property. He agreed to compact and cover the solid waste on the highway property and to post "No Dumping" signs.

The local wildlife representative was contacted and he agreed to help with the clean-up program.

After several conferences with the Union Carbide representatives, a contractor was secured. The removal of the Barium was started on Friday afternoon and was completed on Saturday by the Gaskins Company. [All containers, both 55-gallon and 5-gallon, were taken to the Union Carbide Company.] The spillage and the earth removed in the clean-up (about 18 cubic yards) was taken to the Greenville sludge disposal area, mixed with lime, and buried. The area from which the clean-up was made was covered with lime, then a covering of earth was placed over the area. It is estimated that 99+ percent of the Barium was removed from the watershed.

where did it go

The State Highway Department, State Wildlife Commission, and private property owners should continue their clean-up program and in cooperation with the local law enforcement agency, solid waste disposal should be eliminated in this watershed area.

OWS:bm