Water Resources of Mississippi

THAD N. SHOWS

BULLETIN 113

MISSISSIPPI GEOLOGICAL, ECONOMIC AND TOPOGRAPHICAL SURVEY

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DIRECTOR AND STATE GEOLOGIST

JACKSON, MISSISSIPPI
1970

PRICE $2.00

to be associated with the organic material (lignite, leaves, roots, etc.) deposited in the aquifer material. The Kosciusko and Cockfield aquifers are known to contain colored water of varying degrees in the Jackson area, Bay Springs, Waynesboro and other locations.

Treatment for color removal (coagulation with alum) is expensive and uneconomical for most purposes. Aquifers that contain colored water are not recommended for well development provided shallower aquifers are avai'able for use. Most people prefer clear water for domestic use.

An investigation in 1969 determined that the high chlorides in a city well at Prentiss was caused by industrial pollution from a local plant. The situation is serious at that particular area and should not be allowed to continue.

GROUND WATER

AREA VI

South Mississippi is underlain by several thick aquifer systems and at most locations multiple aquifers are present. The aquifers present in Area VI include the Catahoula, Hattiesburg, Pascagoula, Graham Ferry and Citronelle (fig. 10 and Table 18). Recent publications on the ground water resources in Harrison and Hancock Counties referred to "Miocene aquifers" for the fresh water section in those areas. The Graham Ferry aquifer is recognized in Jackson County and is the principal aquifer for industrial and municipal supplies in the vicinity of Pascagoula.

The aquifers in the coastal counties consist of thick beds of sand or gravel separated by clay layers. The sands are generally lenticular, thereby are not continuous over a large area. Most of these aquifers are capable of supplying large volumes of water to wells in the coastal counties.

The base of fresh water is about 500 feet below sea level across the northeastern part of Area VI in Covington, Jones, Wayne and part of Greene and Perry Counties (fig. 2). The deepest fresh water is present in northwestern Hancock and southwestern Pearl River Counties to a depth of 3,000 feet below sea level. Very few water wells have penetrated the entire freshwater section in the southern half of Area VI (Table 19). A number of shallow piercement-type salt domes are located in

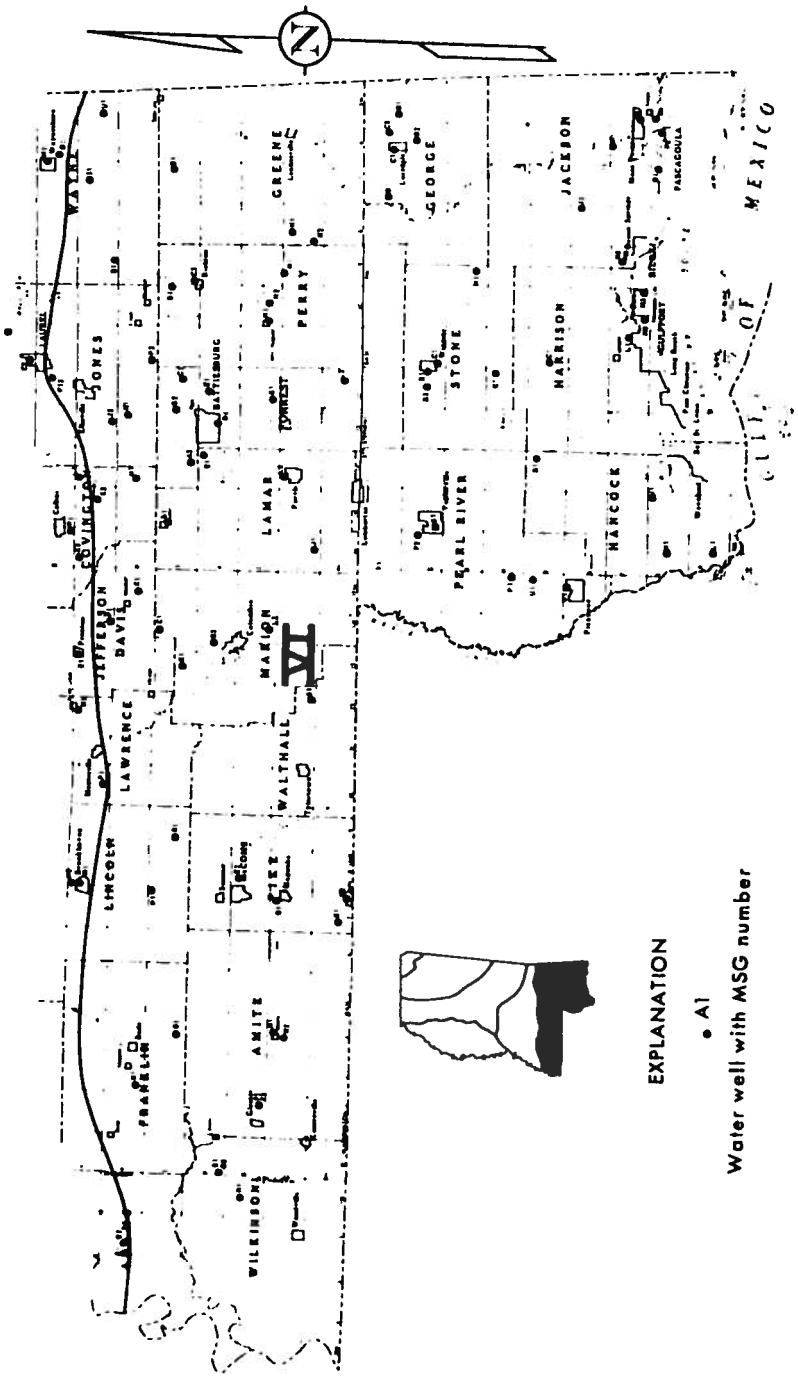

Figure 10.—Location of selected wells in Area VI

Table 18.—Stratigraphic column and water resources in Area VI.

ERA	SYSTEM	SERIES	GROUP	STRATIGRAPHIC UNIT	THICKNESS (feet)	WATER RESOURCES
Cenozoic	Quaternary	Holocene		Alluvium	0-80	Not an important aquifer. A few large wells may be possible along some of the major streams in local areas. Salt water has intruded this aquifer adjacent to the Mississippi Sound.
		Pleistocene		Terrace Deposits	0-100	Some local wells tap this aquifer, but is not used over a very extensive area. Large quantities of water may be available in the southern part where a number of these deposits are developed in a staircase fashion. Salty water is present along the coast in some of these deposits.
				Citronelle	0-100	Supplies shallow domestic wells throughout most of the area. A few municipal wells are completed in this aquifer. Quality of water is fair. The water usually contains low dissolved solids and has a low pH.
	Tertiary	Pliocene		Graham Ferry	0-200	Main source of water supply for municipal and industrial wells in the vicinity of Pascagoula. A number of wells in western Jackson and eastern Harrison Counties utilize this aquifer. Quality of water is generally good. Water is slightly alkaline and iron is seldom a problem in the wells at Pascagoula.
		Miocene		Pascagoula	0-1000	An important source of water supply for the municipal, industrial and domestic wells in Hancock, Harrison and Jackson Counties. The Pascagoula, Hattiesburg and the Catahoula are difficult to differentiate in the subsurface. Recent publications have placed all of the aquifers into "Miocene aquifers." Quality of water is good from this aquifer. Color is high in a number of wells adjacent to the Mississippi Sound. Hydrogen sulfide content may be a local problem.
				Hattiesburg	0-400	An important source of water supply for the municipal wells at Lucedale. This aquifer has the potential of supplying large volumes of water to wells in Pearl River, Stone and George Counties. Numerous domestic wells tap this aquifer in the central part of the area (southern Forrest, Greene, Perry, Pearl River, Stone and George Counties). The quality of water is generally good.
				Catahoula	500-900	An important source of water in the northern half of the area. The aquifer supplies numerous municipal, industrial, and domestic water supplies as far south as northern Pearl River, Stone and George Counties. The aquifer is fresh farther south but because of the depth and availability of shallower aquifers is not generally used. The quality of water is generally good.

Area VI and to the north in Area V. The base of fresh water is shallow over some of the domes. Therefore caution should be exercised in drilling deep water wells on these structures. Deep aquifers are present in Harrison and Hancock Counties which have the ability of supplying large volumes of fresh water to properly constructed wells. A test well 2,460 feet deep (USGS) located in Gulfport's industrial park had a water level of about 100 feet above land surface.

CATAHOULA AQUIFER

Most of the water supplies in the northern part of Area VI are from the Catahoula aquifer. The wells are generally shallow (100 to 1,000 feet deep) and yield large volumes of water. The aquifer consists of beds of sand or gravel separated by clay layers. The sand and gravel beds thicken toward the Gulf and are several hundred feet thick in south Mississippi.

Numerous municipal, industrial, and domestic water supplies are completed in the Catahoula aquifer across this area. The aquifer is used as far south as northern Pearl River, Stone and George Counties. The use of this aquifer has been limited south of the above mentioned area because of the availability of shallower aquifers. Wells yielding up to 2,000 gpm are possible from this aquifer at some locations such as Carson in Jefferson Davis County and Wiggins in Stone County. The sands are generally lenticular in the northern part of Area VI. Test drilling is recommended for most locations because of the lenticular deposits.

Large volumes of water are pumped from the Catahoula aquifer at Hattiesburg, Richton, Purvis, and McComb. A large number of wells for rural water systems and domestic supplies utilize this aquifer in the northern part of Area VI.

Water levels are above the land surface along some of the streams. Flowing wells are primarily located in the Bogue Chitto, Okatoma Creek, Pearl River, Pascagoula River, Chickasawhay River, and some of the smaller creeks across the area. Some of the deeper water levels reported are from 250 to 380 feet. A well which is 796 feet deep in the Catahoula aquifer at Baxterville, Lamar County, had a water level of 264 feet in 1964. A well 425 feet deep at Bassfield, Jefferson Davis County, had a water level of 380 feet in 1964. Slightly deeper water levels may be expected on tops of high hills. Water levels are depressed in areas of heavy pumpage in a small area such as the Hattiesburg well field located at the new water plant.

HATTIESBURG AQUIFER

The Hattiesburg aquifer is not as widely used as the Catahoula aquifer. The Hattiesburg aquifer has the potential of supplying large wells in the central and southern part of Area VI. A number of shallow domestic and small municipal wells utilize this aquifer in southern Lamar, southern Forrest, Perry and Greene Counties. The municipal wells at Lucedale and two community supply wells north of Lucedale are completed in the Hattiesburg aquifer at a depth of about 1,000 feet. Most of the ground-water development from this aquifer is in Pearl River, Stone and George Counties and slightly north of these counties. The extreme depth is the limiting factor south of these counties. The aquifer is presently being used for ground-water supplies in Wilkinson, Amite, Pike, Walthall, and Marion Counties, which are along the Louisiana boundary.

Separating the Hattiesburg from the underlying Catahoula or the overlying Pascagoula is extremely difficult in the subsurface in Area VI. One solution to this problem is to refer to these units as "Miocene aquifers" and not designate particular aquifers.

Water levels will be similar to those in the Catahoula aquifer. The higher water levels will be located along the streams. A well 1,008 feet deep for the Town of Lucedale had a water level of 100 feet in 1960.

PASCAGOULA AQUIFER

The Pascagoula aquifer is an important source of water supply in the three coastal counties, Hancock, Harrison, and Jackson. Numerous municipal, industrial and domestic wells utilize this aquifer in these counties. Most of the municipalities along the coast have wells completed in this aquifer. Yields from this aquifer are as much as 3,000 gpm at the NASA Test Site. The aquifer consists of thick sands and gravels at a number of locations along the coast. Multiple aquifers or zones of sands are present at most locations.

Water levels are generally above or near the land surface except in areas of concentrated withdrawals. A number of the

Forrest
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Coded

MISSISSIPPI DEPARTMENT OF NATURAL RESOURCES
Bureau of Land and Water Resources
Southport Mall
P.O. Box 10631
Jackson, Mississippi 39209
WATER WELL DRILLERS LOG

Jan. 15 (date well completed) 1988 Layne-Central Co. (firm name) Forrest (county well located)

LANDOWNER: B.F. Goodrich Chemical Group
c/o Hercules, Inc. / Herclor Unit
West 7th St., PO Box 1897
Hattiesburg, MS 39403
(mailing address)

WELL LOCATION: SW ¼ of SW ¼ of NW ¼
sec. 4 T 4 N/S R 13 E/W
(distance) miles (direction) of (nearest town)

WELL PURPOSE: Industrial
(home, irrigation, municipal, industrial)

WELL COMPLETION DATA:

(1) diameter (inches) 8"
(2) total depth (feet) 1650'
(3) static water level (feet) 59' below above top of ground.
(4) casing Steel (material), 1610'10" (depth), 8" (size) If telescope see back.
(5) screen 30'4" (length), 1610'10" (depth to top), 4" (size), Stainless Steel (material)
(6) pump 15 (HP) 150 gpm (yield gpm)
Electrical (type power)
(7) electric log Yes (yes or no)
Layne-Central Co. (organization running log)
(8) how well bottom plugged Cement

DRILLERS REMARKS: Permit No MSGW074163

description of formations encountered	from	to
Fill Dirt	0	3'
Clay	3'	45'
Sand	45'	50'
Clay	50'	225'
Sandy Clay	225'	275
Sand	275'	295
Sand & Clay	295'	335'
Hard Clay	335'	367'
Sand	367'	460'
Shale	460'	565
Sand	565'	591'
Shale	591'	611'
Sand	611'	680'
Sandy Shale	680'	702

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APR 18 1988
Department of Natural Resources
Bureau of Land & Water Resources

FORREST MISSISSIPPI BOARD OF WATER COMMISSIONERS

D 38 (3) USGS File

9-21-65

WATER WELL DRILLERS LOG

Date: 9-21-, 1965, Driller: Layne-Central Co. (Name) County Forrest

(1) Owner of Land: Hercules Powder Co (Name)

Hattiesburg, Miss. (Address)

(2) Location: NW ¼, SW ¼, Sec. 4 T 4N R 13W

miles (distance) (direction) of (Nearest Town)

(3) Topography: (Hilly) (Flat) (Level)

(4) Purpose of Well: Industrial (Domestic Irrigation Municipal, Industrial, Other)

Information upon completion of well:

(1) Diameter 18 inches.

(2) Total Depth 687 feet.

(3) Water Level 24 feet below top of ground.

(4) Cased to 591', Size 18"

(5) Screen: Size 10", Length 70'

(6) Were any formations sealed against pollution?

x yes, ____ no.

If YES depth of formation 591'

Why required

Drillers Remarks:

Description & Color of Materials Sand, Clay, Red Clay, Shell, etc.	Thickness	Depth Feet
top soil	3	0-3
pipe clay	187	3-190
shale	50	190-240
fine sand-stks		
shale	29	240-269
sand	22	269-291
shale, stks sand	71	291-362
sand	138	362-500
hard shale	28	500-528
sand-shale	57	528-585
sand	105	585-690
shale	15	690-705

RECEIVED SEP 23 1965 MISS. BOARD OF WATER COMM.

(Use Back Side)

Well No.

FORREST MISSISSIPPI BOARD OF WATER COMMISSIONERS

D 37 ③ USGS file

6-18-65

WATER WELL DRILLERS LOG

Date: June 18, 1965, Driller: Layne-Central Co. (Name) County Forrest

(1) Owner of Land: Coastal Chem. Co. (Name)

Hattiesburg, Miss. (Address)

(2) Location: NW ¼, SW ¼, Sec. 2 T 2N R 15W,

____ miles ____ (direction) of ____ (Nearest Town),

(3) Topography: ____ (Hilly) (Flat) (Level)

(4) Purpose of Well: Industrial (Domestic Irrigation Municipal, Industrial, Other)

Information upon completion of well:

(1) Diameter 12" inches.

(2) Total Depth 353' feet.

(3) Water Level 5' feet below top of ground.

(4) Cased to 310', Size 8",

(5) Screen: Size 6", Length 40'.

(6) Were any formations sealed against pollution?

x yes, ____ no.

If YES depth of formation 353',

Why required

Drillers Remarks: ____

Description & Color of Materials Sand, Clay, Red Clay, Shell, etc.		Thickness Feet	Depth Feet
top soil	0-5	5	
sand & gravel	5-10	5	
blue clay	10-75	65	
shale stks sand	75-100	25	
blue clay	100-120	20	
sandy shale	120-148	28	
sand rock	148-158	10	
shale	158-200	42	
fine sand-shale	200-224	24	
sand	224-352	128	

RECEIVED JUN 21 1965 MISS. BOARD OF WATER COMM.

(Use Back Side)

Well No.

C. P. CLARK
WATER WELL DRILLI
ROUTE 2
LAUREL, MISS. 3944C

Forrest
B
6-27-69

MISSISSIPPI
BOARD OF WATER COMMISSIONERS
416 North State Street
Jackson, Mississippi 39201

WATER WELL DRILLERS LOG

6/27 1969 — date well completed
C. P. Clark — firm name
Forrest — county well located

LANDOWNER: Laurel Hdwe. Co.
Laurel Miss
(mailing address)

WELL LOCATION:
sec. 34 T 5 (N) S R 13 E (W)
1 miles N of Hattiesburg
(distance) (direction) (nearest town)

WELL PURPOSE: Ind
(home, irrigation, municipal, industrial)

WELL COMPLETION DATA:
(1) diameter (inches) 2
(2) total depth (feet) 106
(3) static water level (feet) 34 below above top of ground.
(4) casing Galv Drive (material), (depth),
(size) if telescope see back.
(5) screen 10 (length), 86 (depth to top)
1 1/4 (size), S.S. (material)
(6) pump 1 H.P. (HP) 18 (yield gpm)
230 S.P. (type power)
(7) electric log No (yes or no)
(organization running log)
(8) how well bottom plugged

DRILLERS REMARKS:

description of formations encountered	from	to
Sand	0	11
Blue Clay	11	17
Sand & Pea Gravel	17	10
Blue Clay	106	11

JUL 9 - 1969
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Forrest
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6-20-70

MISSISSIPPI
BOARD OF WATER COMMISSIONERS
416 North State Street
Jackson, Mississippi 39201

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WATER WELL DRILLERS LOG

June 20 1970 H.E. Universal Forrest
date well completed firm name county well located

LANDOWNER: M. Burns
Rt. 6 Hattiesburg Miss
Lake Geiger
(mailing address)

WELL LOCATION:
sec. 10 T 4 S R 13 E
5 miles West of Mt. Lazarus
(distance) (direction) (nearest town)

WELL PURPOSE: House use
(home, irrigation, municipal, industrial)

WELL COMPLETION DATA:
(1) diameter (inches) 4"
(2) total depth (feet) 358'
(3) static water level (feet) 70 below ~~above~~ top of ground.
(4) casing PVC (material), 348' (depth),
(size) If telescope see back.
(5) screen 10' (length), 348-358 (depth to top)
2" (size), PVC (material)
(6) pump 1 (HP) 14 (yield gpm)
220 (type power)
(7) electric log NO (yes or no)
(organization running log)
(8) how well bottom plugged

DRILLERS REMARKS:
Well run June 21-1970

description of formations encountered	from	to
Sandy Sand	0	50
Blue Clay	50	300
Sand	300	358

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JUL 14 1970
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11-10-79
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MISSISSIPPI
BOARD OF WATER COMMISSIONERS
416 North State Street
Jackson, Mississippi 39201

CODED

WATER WELL DRILLERS LOG

Nov 10 1979 Roy V West Water Wells Forrest
date well completed — firm name — county well located

LANDOWNER: Miss Power
Co Hattiesburg Miss
(mailing address)

WELL LOCATION:
sec 10 T 4 (N/S) R 13 (E/W)
0 miles 0 of Hattiesburg
(distance) (direction) (nearest town)

WELL PURPOSE:
(home, irrigation, municipal, industrial)

WELL COMPLETION DATA:

(1) diameter (inches) 6

(2) total depth (feet) 650

(3) static water level (feet) 80 below / above top of ground.

(4) casing Blk Pipe 620
(material) (depth)
(size) If telescope see back.

(5) screen 30 , 620
(length) (depth to top)
4 , St steel
(size) (material)

(6) pump 5 70
(HP) (yield gpm)
Miss Power
(type power)

(7) electric log
(yes or no)
Miss Gas Survey
(organization running log)

(8) how well bottom plugged Washed

DRILLERS REMARKS: This log is for two holes
The location is
wells about 200 ft apart

description of formations encountered	from	to
Clay	0	4
Sand gravel	4	14
Blue clay	14	60
Sand gravel	60	120
Clay	120	275
Sand	275	300
Clay	300	340
Sand	340	540
Clay	540	560
Sand	560	585
Clay	585	605
Sand	605	670
Clay	670	675
Sand	675	710

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BUREAU OF LAND & WATER RESOURCES

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FORREST
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Elog #167

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MISSISSIPPI
BOARD OF WATER COMMISSIONERS
416 North State Street
Jackson, Mississippi 39201

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MISSISSIPPI DEPARTMENT OF NATURAL RESOURCES

WATER WELL DRILLERS LOG

12-10-80 date well completed — 19 — BRADEN PUMP AND WELL SERVICE firm name — Forrest county well located

LANDOWNER: Miss. Tank Company
4th Street
Hattiesburg, MS
(mailing address)

WELL LOCATION:
sec. 6 T 4 (N) S R 13 (E) W
10 (distance) miles (direction) of Hattiesburg (nearest town)

WELL PURPOSE: Industrial
(home, irrigation, municipal, industrial)

WELL COMPLETION DATA:

(1) diameter (inches) 6"

(2) total depth (feet) 700'

(3) static water level (feet) 80 (below) above top of ground.

(4) casing PVC (material), total (depth)
6" (size) If telescope see back.

(5) screen 40' (length), 660 (depth to top)
4" (size), stainless steel (material)

(6) pump 20 (HP) 300 (yield gpm)
230 (type power) @ 40#

(7) electric log yes (yes or no)
(organization running log)

(8) how well bottom plugged 4" R.W.S.P.

DRILLERS REMARKS:
No tail pipe

description of formations encountered	from	to
White clay	0	120
Sand	120	150
Clay & Rock	150	300
Sand	300	430
Clay	430	580
Sand	580	700
CODED		
160 pump setting		

Forrest
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Miss Geo Surv.

MISSISSIPPI
BOARD OF WATER COMMISSIONERS
416 North State Street
Jackson, Mississippi 39201

CODED

WATER WELL DRILLERS LOG

7/11 1968 (date well completed) — S+R (firm name) — Forrest. (county well located)

LANDOWNER Masonite Corp
Hattiesburg, Miss.
(mailing address)

WELL LOCATION:
sec. 4 T 4 N S R 13 E W
(distance) miles (direction) of (nearest town)

WELL PURPOSE: (home, irrigation, municipal, industrial)

WELL COMPLETION DATA:
(1) diameter (inches) 6"
(2) total depth (feet) 422
(3) static water level (feet) 21 below above top of ground.
(4) casing Steel (material), 402 (depth),
6 X 4 (size) If telescope see back.
(5) screen 20 (length), 402 (depth to top)
4" (size), S/S (material)
(6) pump 10 (HP) 158 (yield gpm)
Sub (type power)
(7) electric log YES (yes or no)
M A S (organization running log)
(8) how well bottom plugged Valve

DRILLERS REMARKS:

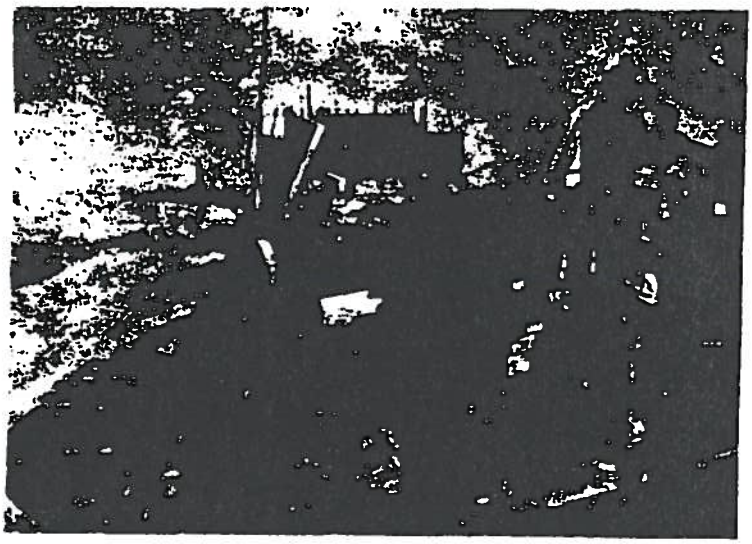
description of formations encountered	from	
Blue Clay	0	8
Sand	98	10
White Clay	105	15
Rock Hard	155	17
Blue Clay	172	2:
Blue Sand	195	2:
Shell	277	28
Sand Fine	281	3:
Sand & Clay Strips	295	3:
C W R Sand	370	4:

AUG 13 1968
MISS. BD. OF WATER COMM.

Reference 17

Results of Aquifer Tests in Mississippi

Compiled by
Roy Newcome, Jr.



Prepared by the
U. S. Geological Survey
Water Resources Division

in cooperation with the
Mississippi Board of Water Commissioners

Bulletin 71-2
1971

ABBREV.	ABBREV.	STANDARD FULL NAME	REMARKS
TRCS	110TRCS	Terrace dposits, undifferentiated	(111,112)
MRVA	112MRVA	Mississippi River alluvial aquifer	
CRNL	121CRNL	Citronelle aquifers	
GRMF	121GRMF	Graham Ferry aquifer	
MOCN	122MOCN	Miocene aquifer system	
PCGL	122PCGL	Pascagoula aquifer	
HBRG	122HBRG	Hattiesburg aquifer	
CTHL	122CTHL	Catahoula aquifer	
OLGC	123OLGC	Oligocene aquifer system	
MSPG	123MSPG	Mint Spring aquifer	
FRHL	123FRHL	Forest Hill aquifer	
MDBC	124MDBC	Moodys Branch aquifer	
CCKF	124CCKF	Cockfield aquifer	
CKMN	124CKMN	Cook Mountain aquifer	
SPRT	124SPRT	Sparta aquifer system	
WNON	124WNON	Winona aquifer	
TLLT	124TLLT	Tallahatta aquifer	
MUWX	124MUWX	Meridian-upper Wilcox aquifer	
WLCXU	124WLCXU	Upper Wilcox aquifer	
WLCXM	124WLCXM	Middle Wilcox aquifer	
WLCXL	124WLCXL	Lower Wilcox aquifer	
WLCX	124WLCX	Wilcox aquifer	(undifferentiated)
RPLY	211RPLY	Ripley aquifer	
COFF	211COFF	Coffee Sand aquifer	
EUTW	211EUTW	Eutaw aquifer	
MCSN	211MCSN	McShan aquifer	
?ETMS	?	Eutaw-McShan aquifer	
GORD	211GORD	Gordo aquifer	
COKR	211COKR	Coker aquifer	
PLZC	300PLZC	Paleozoic aquifer system	

GEOLOGIC UNIT CODE FOR MISSISSIPPI

Alphabetical List
Aquifers

Alluvial aquifer, Mississippi River	QGMA
Alluvium, Pleistocene	QGOA
Alluvium, Quaternary, undifferentiated	Q-OA
Alluvium, Recent	QROA
Byram Formation, Glendon Limestone Member	TØGM
Camden Chert	D2CA
Catahoula Sandstone	TMCA
Catahoula Sandstone, upper part	TMUM
middle part	TMMM
lower part	TMBM
Citronelle Formation	TPCI
Claiborne Group	TECG
Clayton Formation	TLCL
Coastal Deposits	QBCD
Cockfield Formation	TECØ
Cook Mountain Formation	TECK
Potterchitto Sand Member	TEDM
Coffee Sand	K3CS
Coker Formation	K3CØ
upper unnamed member	K37M
Eoline member	K3EM
"massive sand"	K3MM
Eocene Series, undifferentiated	TESE
Eutaw Formation, (unrestricted)	K3ES
Tombigbee Sand Member	K3TM
Unnamed member	K36M
Eutaw Formation, (restricted)	K3EU
lower part	K38M
Forest Hill Sand	TØFH
Fort Payne Chert	M1FP
Gordo Formation	K3GØ
Graham Ferry Formation	TPGF
Hatchetigbee Formation	TEHA
Hattiesburg Formation	TMHA
High terrace deposits	QGHT
Intermediate terrace deposits	QGIT
Low terrace deposits	QGLT
Lower Cretaceous	K1
Lower Tuscaloosa	K3TL
Lower Wilcox aquifer	TELW
Marianna Limestone	TØMA
Mint Spring Marl Member	TØMS
McShan Formation	K3MS
Meridian-upper Wilcox aquifer	TEMW
Middle Tuscaloosa	K3TC
Middle Wilcox aquifer	TETW
Midway Group	TLMG
Miocene Series, undifferentiated	TMMZ
Mississippi River alluvial aquifer	QGMA
Moodys Branch Formation	TEMB
Naheola Formation	TLNA
Nanafalia Formation	TENA
Fearn Springs Member	TEFM
Paleozoic rocks	Y
Pascagoula Formation	TMPA
Fort Adams Member	TMFM
Homochitto Sand	TMHM
lower part	TMLM
Paynes Hammock Sand	TMPH
Pleistocene	QG
Pleistocene-Pliocene	AQ
Pleistocene-Recent	QB
Pliocene	TP
Porters Creek Clay, Tippah Sand Lentil	TLTL
Matthews Landing Marl Member	TLMM
Pottsville Formation	N6PO
Quaternary alluvium	Q-OA
Quaternary deposits	Q-OD
Quaternary sand, undifferentiated	Q-1S
Quaternary sand and gravel, undifferentiated	Q-1G
Quaternary terraces, undifferentiated	Q-OT
Recent alluvium	QROA
Recent terrace deposits	QROT
Ripley Formation	K3RI
Chiwapa Member	K3CM
McNairy Sand Member	K3SM
Coon Creek Tongue	K3KM
Selma Group	K3SG
Sparta Sand	TESS
upper part	TEST
middle part	TESX
lower part	TESB
Tallahatta Formation	TETA
Neshoba Sand Member	TEJM
Basic City Shale Member	TETM
Meridian Sand Member	TEMM
Tertiary	T
Tertiary-Quaternary	A
Tuscahoma Formation	TETU
Tuscaloosa Group	K3TG
Unnamed Group (Eutaw and McShan Formations)	K32G
Upper Wilcox aquifer	TEUW
Upper Cretaceous	K3
Upper Tuscaloosa	K3TU
Vicksburg Group	TØVG
Wilcox Group	TEWG
Winona-Neshoba aquifer	TEWN
Winona Sand	TEWS
Yazoo Clay, Cocoa Sand Member	TECM
Zilpha Clay	TEZC

SUMMARY OF PUMPING TESTS IN COVINGTON COUNTY

WELL NO.	OWNER	DATE	DEPTH FT	AQUI-FER	AQUI-FER THICK-NESS FT	SCREEN LENGTH FT	PUMP. PERIOD HRS	TEST YIELD GPM	SPEC. CAPA-CITY GPM/FT 1-DAY	TRANS-MISSI-BILITY GPD/FT	PERMEA-BILITY GPD/FT2	STOR. COEF.	TRANS-MISS-IVITY FT2/D	HYDR. CON-DUCT-IVITY FT/D
F002	COLLINS	5-67	217	TMUM	100	60	5	435	22	37000	370	.0004	4900	49
F003	COLLINSWOOD PRO	5-67	741	TMCA			1	740	37	80000			10000	
F005	COLLINSWOOD PRO	2-67	164	TMCA	100		4	711		17000	170	.0003	2200	22
K001	SEMINARY	N-66	249	TMCA	95	67	2	351	29	80000	840		10000	110
N001	SANFORD	4-66	802	TMMZ	43	30	1	111		25000	580		3300	77

SUMMARY OF PUMPING TESTS IN DE SOTO COUNTY

NO TESTS

SUMMARY OF PUMPING TESTS IN FORREST COUNTY

WELL NO.	OWNER	DATE	DEPTH FT	AQUI-FER	AQUI-FER THICK-NESS FT	SCREEN LENGTH FT	PUMP. PERIOD HRS	TEST YIELD GPM	SPEC. CAPA-CITY GPM/FT 1-DAY	TRANS-MISSI-BILITY GPD/FT	PERMEA-BILITY GPD/FT2	STOR. COEF.	TRANS-MISS-IVITY FT2/D	HYDR. CON-DUCT-IVITY FT/D
A023	HATTIESBURG C C	3-65	752	TMCA	50		4	84	7.3	27000	540		3600	72
B017	HATTIESBURG	1-65	607	TMCA	80		9	995	9.7	48000	600	.0003	6400	80
D001	HATTIESBURG AP	6-42	194	TMHA	100	30	3	297	24	120000	1200	.0001	16000	160
D004	HATTIESBURG	4-64	485	TMCA	130	50	12	1030	40	170000	1300		22000	170
D005	HATTIESBURG	4-64	678	TMCA	80	50	11	1050	13	30000	370	.0001	4000	50
D029	E FORREST UTIL	N-62	134	O-OA	100	31	12	750		200000	2000	.0006	26000	260
D038	HERCULES POWDER	9-65	687	TMCA	105	96	8	1016	7.5	15000	140		2000	18
D039	COASTAL CHEM CO	5-65	353	TMCA	150	40	2	483	5.7	70000	460		9300	62
D042	PALMERS CROSSNG	3-66	642	TMCA	216	42	2	285	20	110000	500	.0002	14000	68
D045	CENTRAL UTILITY	4-66	694	TMCA	90	40	1	206	12	39000	430		5200	57
D046	CENTRAL UTILITY	4-66	672	TMCA	90	40	1	252	11	39000	430	.0002	5200	57
G014	CAMP SHELBY	5-43	402	TMHA	86	80	73	550	29	70000	810	.0004	9300	100
G016	CAMP SHELBY	5-43	409	TMHA		80	26	532	19	70000			9300	
G022	CAMP SHELBY	5-43	404	TMHA	83	80	31	522	26	69000	830		9200	110
H006	PAUL B JOHNSON	1-68	330	TMHA	47	20	1	80	4.7	34000	720		4500	96
L017	BROOKLYN W A	5-66	580	TMHA	170	40	1	240	22	230000	1300		30000	180
M035	CARNES UTILITY	0-70	820	TMCA	70	40	2	145		36000	510		4800	68

B&V WASTE SCIENCE AND TECHNOLOGY CORP.

Reference 18

TELEPHONE MEMORANDUM

USEPA Region IV

BVWST Project 52011.040
BVWST File
June 5, 1992
10:30

Water supply and Use for the Hattiesburg Water District

To: Bob West, General Manager
Company: Hattiesburg Public Utility
Phone No.: (601) 545-4536

Recorded by: Carter Helm

Summary of conversation: Mr. West said that the City of Hattiesburg operates 16 wells which supply water to the City District and surrounding areas. The Hattiesburg Water District services 15,965 connections. The water is blended prior to distribution. There are no surface water intakes for potable water. The water district does not have a list of the private wells in the Hattiesburg District. Mr. West did not have a well location and water line map available to send to BVWST, however, water information from the Dynamac Corporation proved useful for well locations and water line distribution. Well depths average 825 feet bls.

Mr. West's water municipality does serve industries which process and preserve food products for commercial food preparation plants. Mr. West is also aware of wells in the community that supply water for livestock watering and crop irrigation. Hattiesburg Public Utility service extends southward into Palmers Crossing, south of Hattiesburg. The only surface water intakes located on the Bowie and Leaf Rivers are utilized for industrial use. Mr. West knows of three intakes which are operated by: Hercules, Inc., Mississippi Power Plant Eaton, and the Petromill Corporation.

Please see Appendix A for Hattiesburg Public Utility Service areas and their municipal well locations.

B&V WASTE SCIENCE AND TECHNOLOGY CORP.

Reference 19

TELEPHONE MEMORANDUM

USEPA Region IV

BVWST Project 52011.040
BVWST File
June 9, 1992
10:00

Water supply and use for the Glendale Water District

To: Jeanette Rudder, Superintendent
Company: Glendale Public Utility
Phone No.: (601) 583-0647

Recorded by: Carter Helm

Summary of conversation: Ms. Rudder said that the city of Glendale operates 2 wells which supply water to the Glendale Water District. The two wells are both located on Eatonville Road near the North Forrest High School. The depth of the wells are 895 and 902 feet below land surface (bls). Both of these wells are in use and service the area equally (blended system). There are 1196 connections in the Glendale Water District.

The Glendale Water District does not sell water to any other utility company. The Glendale Water District does not buy water from any other utility company. The water is treated and mixed with chlorine, then blended prior to distribution. There are no surface water intakes for potable water.

Ms. Rudder said that Glendale Public Utility does not keep a list of the private wells in the water district. Ms. Rudder was not able to send BVWST a well location and water line map.

Please send Appendix A for Glendale Public Utility Service areas and the municipal well locations.

B&V WASTE SCIENCE AND TECHNOLOGY CORP.

Reference 20

TELEPHONE MEMORANDUM

USEPA Region IV

BVWST Project 52011.040
BVWST File
June 10, 1992
14:45

Water Supply and Use for the Petal Water District

To: Ralph Eddleman, Operator/Manager
Company: Petal Public Utility
Phone No.: (601) 544-6982

Recorded by: Carter Helm

Summary of conversation: Mr. Eddleman said that the City of Petal operates four wells which supply water to the City District. Petal Public Utility services 2700 connections. Wells number 1 and 2 are located at 114 Hill Crest Loop. Well number 3 is located at 115 South Main Street. Well number 4 is located at 1830 Old Richton Road. Wells number 1 and 2 have well depths of 720 and 730 feet below land surface (bls). The depth of well number 3 is 134 feet below land surface (bls). The depth of well number 4 is 130 feet below land surface (bls). Wells number 1 and 2 serve 80% of the total connections and the water is blended prior to distribution. Wells number 3 and 4 serve 20% of the total connections and the water is blended prior to distribution.

Wells 1 and 2 are located 4.4 miles northeast of Hercules and wells 3 and 4 are located 2.7 miles east of Hercules.

Petal Public Utility does not sell water to any other utility company. Petal Public Utility does not buy water from any other utility company. Mr. Eddleman does not have a list of the private wells in the Petal Utility District.

Mr. Eddleman said there are no surface water intakes for potable water. Lime and chlorine are added to the water at two of the wells and then distributed. Chlorine and phosphate are added to the water at the other two wells and then distributed.

Please refer to Appendix A for Petal Utility Service areas and the municipal well locations.

B&V WASTE SCIENCE AND TECHNOLOGY CORP.

Reference 21

TELEPHONE MEMORANDUM

USEPA Region IV

BVWST Project 52011.040
BVWST File
June 10, 1992
11:50

Water Supply and use for the Eastabuchie Water District

To: James W. Manning, Manager/Operator
Company: Eastabuchie Utility Association
Phone No.: (601) 545-7629

Recorded by: Carter Helm

Summary of conversation: Mr. Manning said that the Eastabuchie Utility Association operates 2 wells which supply water to the Eastabuchie Water District. The depth of the two wells are 801 and 692 feet below land surface (bls). The Eastabuchie Water District serves 390 connections. There are no surface water intakes for potable water.

The water association does not have a list of private wells in the Eastabuchie District. Ninety percent of the water distributed comes from the 801 feet bls well. The other ten percent comes from the 692 feet bls well.

The Eastabuchie Utility Association is located at the private residence of James Manning at 74-A Chevis Lee Road, Petal, Mississippi. Mr. Manning did not have a well location and waterline map available to send to BVWST.

Please refer to Appendix A for Eastabuchie Utility Service areas and the municipal well locations.

jv

B&V WASTE SCIENCE AND TECHNOLOGY CORP.

Reference 22

TELEPHONE MEMORANDUM

US EPA -- Region IV
Hercules, Inc.
Municipal Water Information for Rawls Springs Public Utility

BVWST Project 52011.040
BVWST File
October 14, 1992
10:33 a.m.

To: Tony Bryant, Supervisor
Company: Rawls Springs Public Utility
Phone No.: (601) 268-2248

Recorded by: Carter Helm

Mr. Bryant offered the following facts about the Rawls Springs Public Utility:

- Distributes to 775 connections.
- Four wells are utilized.
- The wells are blended.
- The wells are located 3.2 miles northwest of the Hercules site.

Refer to Appendix A for water distribution areas and well locations.

ms

B&V WASTE SCIENCE AND TECHNOLOGY CORP.

Reference 23

TELEPHONE MEMORANDUM

US EPA -- Region IV
Hercules, Inc.
Municipal Water Information for Arnold Line Water Association

BVWST Project 52011.040
BVWST File
October 14, 1992
15:15

To: Sue Morgan, Secretary-Treasurer
Company: Arnold Line Water Association
Phone No.: (601) 264-7111

Recorded by: Carter Helm

Ms. Morgan stated that she had the knowledge to answer my questions. This utility company operates three wells which are located 2.9 miles west of the Hercules facility. The water is blended, treated, stored in two tanks, then distributed to 1,105 connections. This system serves homes between Rawls Springs Public Utility and North Lamar Water Association.

Please refer to Appendix A for water distribution areas and well locations.

ms

B&V WASTE SCIENCE AND TECHNOLOGY CORP.

Reference 24

TELEPHONE MEMORANDUM

US EPA -- Region IV
Hercules, Inc.
Municipal Water Information from
the City of North Lamar

BVWST Project 52011.040
BVWST File
October 8, 1992
10:50 a.m.

To: Mr. W. L. Moore, Superintendent
Company: North Lamar Water Association
Phone No.: (601) 543-8052 (Mobile) or 601-264-1157

Recorded by: Carter Helm

Mr. Moore operates the municipal water system for the town of North Lamar, three miles southwest of the Hercules site. Four wells serve the system. These wells are 170 feet deep and are blended. They are situated five miles southwest of the site and serve 1,685 connections. Part of the North Lamar municipal service area is in our four-mile radius area surrounding the site. Refer to Appendix A for water distribution areas and well locations.

ms

B&V WASTE SCIENCE AND TECHNOLOGY CORP.

Reference 25

TELEPHONE MEMORANDUM

US EPA -- Region IV
Hercules, Inc.
Municipal Water Information for Lamar Park Water Association

BVWST Project 52011.040
BVWST File
October 19, 1992
16:40

To: Susan Rowland, Secretary
Company: Lamar Park Water Association
Phone No.: (601) 264-5933

Recorded by: Carter Helm

Ms. Rowland had filled me in on municipal water information from the Lamar Park utility. The Lamar Park Water Association retrieves water from three wells (which are blended), then distributes to 775 connections. These three wells are located 3.2 miles southwest of the Hercules property.

Refer to Appendix A for water distribution areas and well locations.

ms

Table 6. Household, Family, and Group Quarters Characteristics: 1990

[For definitions of terms and meanings of symbols, see text]

State / County / Place and [In Selected States] County Subdivision	Persons in households	All households	Family households: Total	Family households: Married-couple family	Family households: Female householder, no husband present	Nonfamily households: Total	Householder living alone: Total	Householder living alone, 65 years and over: Total	Householder living alone, 65 years and over: Female	Persons per—: Household	Persons per—: Family	Persons in group quarters: Total	Persons in group quarters: Institutionalized persons	Persons in group quarters: Other persons in group quarters
The State	2 503 499	911 374	674 378	499 240	145 221	236 996	212 949	94 180	77 094	2.75	3.27	69 717	29 733	39 984
COUNTY														
Adams County	34 961	13 282	9 710	6 619	2 624	3 572	3 328	1 554	1 190	2.64	3.16	395	328	67
Alcorn County	31 403	12 649	9 350	7 503	1 305	3 299	3 107	1 640	1 313	2.52	3.02	319	290	29
Amite County	13 308	4 830	3 594	2 734	694	1 236	1 175	670	491	2.76	3.30	20	20	-
Attala County	18 290	6 945	5 027	3 843	949	1 918	1 825	1 130	874	2.63	3.20	182	160	22
Benton County	8 025	2 842	2 192	1 684	394	650	617	343	254	2.82	3.32	21	6	15
Bolivar County	40 100	13 292	9 492	5 673	3 497	3 800	3 191	1 656	1 243	3.02	3.64	1 775	524	1 251
Calhoun County	14 711	5 662	4 187	3 273	717	1 475	1 410	841	691	2.60	3.10	197	192	5
Carroll County	9 213	3 352	2 556	1 947	488	796	749	431	290	2.75	3.24	24	18	6
Chickasaw County	17 946	6 480	4 902	3 687	991	1 578	1 460	822	656	2.77	3.28	139	139	-
Choctaw County	8 864	3 217	2 436	1 894	437	781	744	435	349	2.76	3.26	207	207	-
Claiborne County	9 419	3 342	2 359	1 340	938	983	922	462	319	2.82	3.48	1 951	14	1 937
Clarke County	17 136	6 334	4 780	3 600	981	1 554	1 469	777	599	2.71	3.20	177	164	13
Clay County	20 527	7 251	5 451	3 807	1 405	1 800	1 670	870	675	2.83	3.37	593	231	362
Coahoma County	30 807	10 530	7 538	4 478	2 647	2 992	2 775	1 533	1 186	2.93	3.60	768	512	256
Copiah County	26 295	9 304	6 993	4 928	1 732	2 311	2 153	1 136	901	2.83	3.36	1 297	159	1 138
Covington County	16 458	5 786	4 441	3 407	838	1 345	1 281	700	536	2.84	3.35	69	66	3
DeSoto County	67 601	23 273	19 340	16 031	2 502	3 933	3 441	1 296	982	2.91	3.23	219	182	37
Forrest County	63 871	25 150	16 726	11 730	4 233	8 424	6 947	2 517	2 043	2.54	3.15	4 443	1 019	3 424
Franklin County	8 310	3 086	2 284	1 731	439	802	761	424	316	2.69	3.22	67	67	-
George County	16 536	5 779	4 610	3 855	599	1 169	1 090	564	445	2.86	3.29	137	137	-
Greene County	9 635	3 327	2 635	2 111	429	692	652	340	265	2.90	3.35	585	585	-
Grenada County	21 211	7 701	5 738	4 160	1 309	1 963	1 820	923	751	2.75	3.28	344	286	58
Hancock County	31 164	11 817	8 717	6 958	1 331	3 100	2 748	1 219	871	2.64	3.11	596	252	344
Harrison County	157 921	59 557	42 921	32 618	8 264	16 636	14 401	5 291	4 087	2.65	3.17	7 444	2 594	4 850
Hinds County	245 738	91 023	64 032	43 365	17 456	26 991	23 300	8 223	6 822	2.70	3.29	8 703	2 426	6 277
Holmes County	21 205	7 139	5 207	2 856	2 023	1 932	1 818	1 054	794	2.97	3.61	399	112	287
Humphreys County	12 063	3 926	2 878	1 736	950	1 048	929	449	385	3.07	3.67	71	71	-
Issaquena County	1 909	633	476	346	94	157	147	62	44	3.02	3.57	-	-	-
Itawamba County	19 428	7 407	5 700	4 970	606	1 707	1 640	931	763	2.59	3.02	589	212	377
Jackson County	114 249	40 454	31 583	24 777	5 453	8 871	7 822	2 657	2 221	2.82	3.25	994	635	359
Jasper County	17 016	5 956	4 606	3 406	952	1 350	1 287	734	576	2.86	3.34	98	98	-
Jefferson County	8 649	2 814	2 114	1 174	784	700	651	322	229	3.07	3.67	4	-	4
Jefferson Davis County	13 833	4 787	3 674	2 610	873	1 113	1 054	585	454	2.91	3.43	118	111	7
Jones County	60 441	22 506	16 976	13 214	3 081	5 530	5 161	2 896	2 180	2.69	3.17	1 500	638	862
Kemper County	10 039	3 626	2 642	1 884	620	984	933	504	371	2.77	3.37	317	91	226
Lafayette County	27 387	11 090	6 968	5 434	1 239	4 122	2 972	981	763	2.47	3.08	4 430	477	3 953
Lamar County	30 284	10 883	8 497	6 833	1 265	2 386	2 083	848	695	2.78	3.21	136	136	-
Lauderdale County	73 091	28 232	20 032	14 307	4 820	8 200	7 455	3 405	2 784	2.59	3.15	2 464	1 188	1 276
Lawrence County	12 356	4 506	3 416	2 696	611	1 090	1 055	568	443	2.74	3.26	102	77	25
Leake County	18 284	6 788	5 054	3 926	905	1 734	1 651	938	745	2.69	3.22	152	150	2
Lee County	64 732	24 450	18 116	14 206	3 209	6 334	5 727	2 348	1 907	2.65	3.14	849	722	127
Leflore County	35 918	12 749	8 977	5 490	3 014	3 772	3 455	1 783	1 359	2.82	3.47	1 423	509	914
Lincoln County	29 787	11 089	8 318	6 458	1 550	2 771	2 640	1 396	1 108	2.69	3.20	491	330	161
Lowndes County	57 816	21 402	15 698	11 516	3 568	5 704	5 037	1 972	1 601	2.71	3.23	1 392	328	1 064
Madison County	52 756	19 276	13 638	9 791	3 214	5 638	4 833	1 506	1 173	2.74	3.34	1 038	574	464
Marion County	25 006	9 110	6 897	5 378	1 244	2 213	2 008	1 157	908	2.75	3.27	448	448	-
Marshall County	29 554	10 077	7 790	5 540	1 806	2 287	2 091	985	733	2.93	3.41	807	149	658
Monroe County	36 246	13 348	10 077	7 627	2 000	3 271	3 061	1 664	1 370	2.72	3.22	336	336	-
Montgomery County	12 248	4 532	3 349	2 417	774	1 183	1 133	676	526	2.70	3.25	140	132	8
Neshoba County	24 460	8 848	6 754	5 211	1 208	2 094	1 937	1 103	858	2.77	3.22	331	225	106
Newton County	19 700	7 358	5 579	4 337	995	1 779	1 680	932	734	2.68	3.15	591	173	418
Noxubee County	12 572	4 140	3 092	1 971	937	1 048	1 000	581	420	3.04	3.65	32	20	12
Oktibbeha County	33 338	12 916	8 261	6 031	1 842	4 655	3 315	1 044	795	2.58	3.18	5 037	173	4 864
Panola County	29 476	10 130	7 652	5 418	1 820	2 478	2 250	1 218	937	2.91	3.44	520	212	308
Pearl River County	38 150	13 780	10 699	8 600	1 673	3 081	2 706	1 330	1 066	2.77	3.21	564	220	344
Perry County	10 809	3 802	2 951	2 331	497	851	806	410	318	2.84	3.32	56	45	11
Pike County	36 185	13 409	9 709	6 630	2 464	3 700	3 450	1 787	1 404	2.70	3.27	697	356	341
Pontotoc County	22 090	8 346	6 379	5 241	882	1 967	1 857	1 057	857	2.65	3.11	147	147	-
Prentiss County	22 727	8 647	6 570	5 318	1 000	2 077	1 930	1 093	875	2.63	3.09	551	81	470
Quitman County	10 403	3 521	2 569	1 711	693	952	883	541	425	2.95	3.58	87	87	-
Rankin County	84 159	29 858	23 888	19 649	3 336	5 970	5 270	1 829	1 427	2.82	3.21	3 002	2 863	139
Scott County	23 965	8 511	6 480	4 702	1 354	2 031	1 875	960	752	2.82	3.31	172	163	9
Sharkey County	7 003	2 084	1 601	992	485	483	424	243	195	3.36	3.92	63	63	-
Simpson County	23 240	8 357	6 347	4 940	1 118	2 010	1 880	994	784	2.78	3.29	713	671	42
Smith County	14 671	5 276	4 105	3 643	405	1 171	1 119	624	496	2.78	3.25	127	127	-
Stone County	10 175	3 695	2 796	2 223	457	899	810	408	325	2.75	3.25	575	165	410
Sunflower County	29 501	9 641	7 030	4 404	2 254	2 611	2 440	1 400	1 099	3.06	3.71	3 366	2 946	420
Tallahatchie County	15 129	5 034	3 717	2 436	1 018	1 317	1 230	711	539	3.01	3.60	82	82	-
Tate County	20 515	7 024	5 576	4 347	983	1 448	1 316	700	538	2.92	3.35	917	153	764
Tippah County	19 200	7 158	5 487	4 509	754	1 671	1 567	847	664	2.68	3.14	314	211	103
Tishomingo County	17 513	7 059	5 314	4 508	637	1 745	1 661	969	750	2.48	2.93	170	170	-
Tunica County	8 138	2 526	1 876	1 050	667	650	590	299	223	3.22	3.84	26	26	-
Union County	21 952	8 367	6 339	5 278	814	2 028	1 921	1 128	923	2.62	3.09	133	133	-
Walthall County	14 173	4 929	3 771	2 850	726	1 158	1 092	616	489	2.88	3.38	179	135	44
Warren County	47 354	17 407	12 671	9 238	2 864	4 736	4 335	1 872	1 538	2.72	3.28	526	496	30
Washington County	67 232	22 593	16 764	10 434	5 348	5 829	5 243	2 464	1 929	2.98	3.54	703	635	68
Wayne County	19 434	6 858	5 336	4 022	1 082	1 522	1 448	717	552	2.83	3.31	83	83	-
Webster County	10 057	3 826	2 814	2 186	507	1 012	975	566	442	2.63	3.17	185	104	81
Wilkinson County	9 546	3 347	2 520	1 548	813	827	783	418	323	2.85	3.39	132	132	-
Winston County	19 264	7 061	5 251	3 886	1 119	1 810	1 730	874	702	2.73	3.27	169	168	1
Yalobusha County	11 951	4 614	3 244	2 371	722	1 370	1 287	764	622	2.59	3.20	82	58	24
Yazoo County	25 170	8 813	6 463	4 320	1 780	2 350	2 206	1 213	920	2.86	3.45	336	313	23
PLACE AND COUNTY SUBDIVISION														
Abbeville town, Lafayette County	399	151	118	97	19	33	32	18	14	2.64	3.00	-	-	-
Aberdeen city, Monroe County	6 632	2 483	1 780	1 093	578	703	657	329	260	2.67	3.29	205	205	-
Ackerman town, Choctaw County	1 508	605	406	268	116	199	183	123	110	2.49	3.14	67	67	-
Algoma town, Pontotoc County	420	159	124	101	20	35	34	21	15	2.64	3.09	-	-	-
Alligator town, Bolivar County	187	56	41	20	17	15	15	8	5	3.34	4.15	-	-	-
Amory city, Monroe County	6 973	2 829	1 975	1 416	482	854	800	462	305	2.46	3.04	120	120	-
Anguilla town, Sharkey County	883	269	199	120	63	70	63	37	29	3.28	3.98	-	-	-
Arcola town, Washington County	564	171	125	53	57	46	42	17	14	3.30	3.60	-	-	-
Artesia town, Lowndes County	484	160	114	85	40	46	44	24	17	3.03	3.77	-	-	-
Ashland town, Benton County	484	227	146	121	20	81	78	53	43	2.13	2.73	6	6	-

TP28 (POSTSCRIPT) CPH120 CENSUS90 72S80800 04/23/91 3:20 PM MACHINE C DATA CENSUS90 PH1TPSDAT28 04/23/91 14:18:03 OUTPUT ONSITE P9177 PAGE: 60
TSP CENSUS90 S2 04/23/91 14:18:10 UTF CENSUS90 S3 04/23/91 14:18:10 META CENSUS90 PH1TABLES20 04/23/91 14:24:56

NOTE: The population counts set forth herein are subject to possible correction for undercount or overcount. The United States Department of Commerce is considering whether to correct these counts and will publish corrected counts, if any, not later than July 15, 1991.

B&V WASTE SCIENCE AND TECHNOLOGY CORP. Reference 27

TELEPHONE MEMORANDUM

USEPA Region IV

Private Well Information

BVWST Project 52011.040
BVWST File
June 9, 1992
11:30

To: Mr. Freeman, Public Health Environmentalist
Company: Forrest County Health Department
Phone No.: (601) 583-0291

Recorded by: Carter Helm

Summary of conversation: Mr. Freeman said that the Forrest County Health Department does not retain a list of the private wells in Forrest County. Mr. Freeman said there are very few private wells in the county. He said the Health Department receives very few complaints regarding the drinking water for Forrest County.

B&V WASTE SCIENCE AND TECHNOLOGY CORP.

Reference 28

TELEPHONE MEMORANDUM

US EPA -- Region IV
Hercules, Inc.
River and Surface Water Intake Information

BVWST Project 52011.040
BVWST File
October 30, 1992
09:30 a.m.

To: Lloyd Long, Hydrologist
Company: Office of Land and Water Resources, State of MS
Phone No.: (601) 961-5209

Recorded by: Carter Helm

Mr. Long stated that no wetlands exist along the 15-mile surface water pathway that I described for the site. He estimated the flow rate for the Bowie River (also spelled Bouie River) to be approximately 910 cfs (cubic feet per second). Also, Greens Creek is under 100 cfs. He has documented data for the Leaf River which he will mail to me.

Surface water intakes along the pathway exist for industrial use only (cooling water). Three companies utilize surface water from the study area. They include: Hercules, Inc., Mississippi Power's Eaton Plant, and the Petromill Corporation.

ms

Reference 29

STATE OF MISSISSIPPI
DEPARTMENT OF ENVIRONMENTAL QUALITY
JAMES I. PALMER, JR.
EXECUTIVE DIRECTOR

November 2, 1992

Mr. Carter Helm
B & V Waste Science
1117 Perimeter Penter W.
Suite W 212
Atlanta, GA 30338

Dear Mr. Helm:

In response to your request for information on permitted surface water withdrawals from the Leaf River near Hattiesburg and also streamflow data on the Leaf River at Hattiesburg, enclosed are the following data:

1. Surface Water Withdrawals

   A map with withdrawal sites highlighted and also a computer printout of the pertinent data on these sites.

2. Streamflow Data

   Leaf River Gage at Hattiesburg on U.S. Highway 11.

   Mean Annual Flow is 2,725 cubic feet per second with 52 years of record.

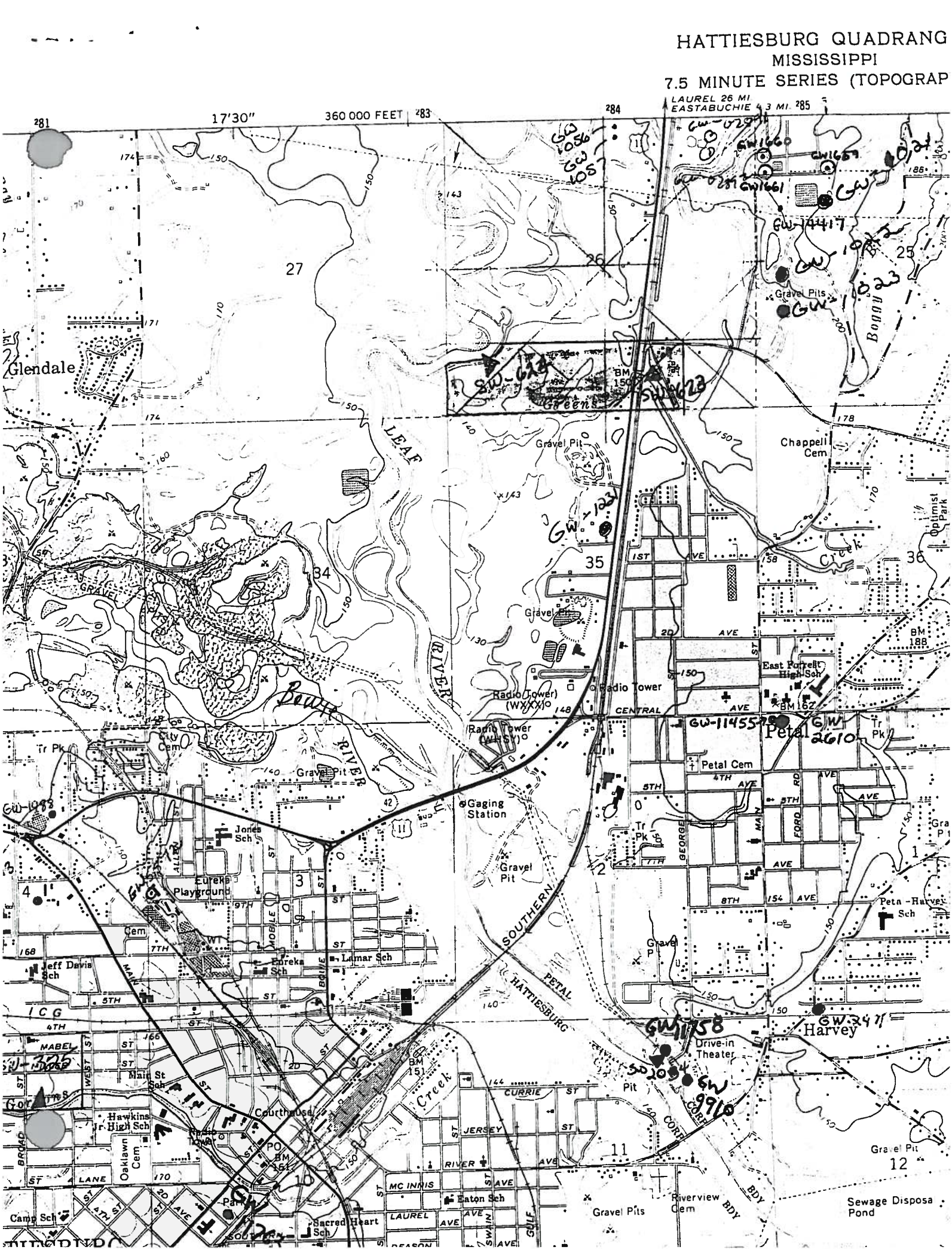
   Established minimum flow (7 Day Q_{10}) is 374 cubic feet per second.

Should you have any questions please call me at (601) 961-5209.

Yours very truly,

Lloyd Long

Lloyd Long,
Hydrologist


HATTIESBURG QUADRANG
MISSISSIPPI
7.5 MINUTE SERIES (TOPOGRAP
17'30"
360 000 FEET
LAUREL 26 MI
EASTABUCHIE 3 MI.
281
283
284
285
Glendale
Greens
Gravel Pits
Gravel Pit
Chappell Cem
Optimist Park
Creek
Bowie
LEAF
RIVER
Radio Tower
Radio Tower (WXXX)
Radio Tower (WHSY)
East Forrest High Sch
Petal
Petal Cem
Tr Pk
City Cem
Gaging Station
Jones Sch
Eureka Playground
Cem
Eureka Sch
Lamar Sch
Jeff Davis Sch
Main St Sch
Hawkins Jr High Sch
Courthouse
Oaklawn Cem
Camp Sch
Sacred Heart Sch
Eaton Sch
Riverview Cem
Sewage Disposa Pond
Peta -Harvey Sch
Harvey
Drive-in Theater
Pit
SOUTHERN
HATTIESBURG
PETAL
Creek
BOGGY
CORR
BDY
GW-1050
GW-1057
GW-1660
GW-1661
GW-1662
GW-10417
GW-10423
GW-624
GW-623
GW-1251
GW-11455
GW-2610
GW-1988
GW-1325
GW-11758
GW-9910
GW-2471

BLW-NC-1

RETURN COMPLETED FORM TO:

Bureau of Land and Water Resources
P.O. Box 10631
Jackson, Mississippi 39209
Telephone (601) 961-5200

For Office Use Only:
County: Forrest
Date Received: 1-15-86
Permit No: MS-5W00238
Quad Map:
Water Management Dist:
Hydrologic River Basin:

NOTICE OF CLAIM FOR CONTINUED USE OF SURFACE/GROUND WATERS FOR BENEFICIAL USE

Pursuant to the laws of the State of Mississippi, namely §51-3-5 (2) or (3), as amended, I, the landowner,

HERCULES INC. (Name) 51-0023460 (S/S or Tax ID No.)

WEST 7th STREET (Address), HATTIESBURG (City or Town), MS 39401 (State and Zip)

(601) 584 3460 (Telephone Number), do hereby file claim for the continued use of: (circle one)

(surface water) ground water for the following beneficial use: (circle one or more)

municipal; irrigation; recreation; livestock water; fish culture; (industrial)

Other _____ (Specify)

1. Name & Address of agent or applicant if different from landowner.

_____ (Name), _____ (S/S or Tax ID No.), _____ (Address)

_____ (City or Town), _____ (State and Zip), ( ) _____ (Telephone Number)

2. Location of point of diversion/withdrawal (include location map with claim)

SE ¼ of SW ¼ of Section 33, Township 5N, Range 13W, County Forrest

3. Volume of water diverted/withdrawn:

(1)_____ acre feet per year, diverted/withdrawn at a maximum rate of _____gallons per minute; or

(2) 2628 million gallons per ~~day~~ Year diverted/withdrawn at a maximum rate of 8500 gallons per minute.

4 Description of lands on which water will be used:
(a) Copy legal description of property upon which water is to be used (may be copied word for word from your deed)

Attach separate sheet if necessary Section 4 and 5, Township 4N, Range 13W

(b) Has the above described land any water right or source of water supply other than that herein applied for?

(Water Rights Number(s) _____) Describe the nature and amount of any additional supply

Three (3) Layne wells - 1000 gpm each

SECTION A (to be completed if source of water is from surface supply)

1. Prior water rights permit/license number 0003, dated August 23, 1957
2. Source of supply is Bowie River which drains into Leaf River

_____ which drains into Pascagoula River

3. Description of diversion works:
(a) Water obtained directly from stream: Bowie River (Name)

Pump Four (4) centrifugal (Size and type) Power Unit 2-150HP and 2-75HP (Size and type)

Lift 2-180FT and 2-140FT ft. Maximum capacity 2-2500gpm and 2-1750gpm gpm

(b) Storage reservoir _____ (Name)

Height of dam _____ feet. Surface area at normal pool _____ acres

Storage capacity at normal pool _____ acre fee

SECTION B (to be completed if source of water is from underground supply)

1 Source of supply _____ aquifer(s)

2 Description of water well.

a) **Well data:**
(1) Date well completed _____
(2) Depth drilled _____ feet
(3) Type of completion _____
(4) Surface elevation _____ feet

(b) **Screen data:**
(1) Depth to bottom _____ feet
(2) Length _____ feet
(3) Diameter _____ inches
(4) Type _____
(5) Slot _____ inches

(c) **Casing data:**
(1) Length(s) _____ feet; Diameter(s) _____ inches
(2) Type _____

d) **Pump data:**
1) Type & Size _____ (2) Capacity _____ gpm
(3) No. stages _____ (4) Setting depth _____ feet

Well Driller _____
(Name of Company)

WATER USE DATA

1 IRRIGATION use: (a) Show number of acres to be irrigated by 40-acre blocks:

TOWNSHIP	RANGE	SEC.	NE¼				NW¼				SW¼				SE¼				TOTALS
			NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	

(b) List the acres to be irrigated: Rice_____; Cotton_____; Corn_____; Pasture_____; Truck_____
Other crops (_____) _____ acres.

2 If for MUNICIPAL use: (a) Present population _____ (based on 19____ Census)
(b) Estimated average daily consumption during periods of maximum use at the end of each five-year period in next twenty years:
_____ 19____; _____ 19____; _____ 19____; 19____

3 If for INDUSTRIAL use: (a) If water is to be released into a watercourse indicate: Amount released each year 2280.
rate of release MGY. location of release point in reference to diversion point 3000 FEET DOWNSTREAM (show location on map)
(b) Explain any change in quality of water to be released: PORTIONS OF SURFACE, GROUND, AND city waters comprise INDUSTRIAL EFFLUENT AND NON-CONTACT COOLING WATER DISCHARGES.

4 If for RECREATIONAL use: Explain how water will be used _____

5 If for FISH CULTURE use: (a) Explain in detail how water will be used _____

(b) Number of times reservoir will be emptied and filled annually: _____

6 If for ANY OTHER use: (a) Explain in detail _____

REMARKS _____

List below the name and address of person to be contacted for additional information, if required.

Charles Jordan
(Name)
P.O. Box 1937 Hattiesburg Ms 39401
(Address)

The accompanying map is hereby declared a part of this application.

[signature]
(Signature)

Subscribed and sworn to before me this 13th day of January 19 86, at Hattiesburg, Miss.
My Commission Exp. Feb. 22, 1988
County of Forrest, Mississippi. My commission expires _____

Janice Reid
Notary Public

ENDANGERED AND THREATENED SPECIES

Reference 31

U.S. FISH AND WILDLIFE SERVICE

REGION 4 - ATLANTA

PREFACE

The materials in this notebook are provided as an aid to anyone having a continuing need for current information on Federally listed endangered and threatened species found within Region 4 of the U.S. Fish and Wildlife Service. This area includes the Carolinas, Georgia, Florida, Alabama, Tennessee, Kentucky, Mississippi, Arkansas, Louisiana, Puerto Rico, and the Virgin Islands.

Recipients of the notebook are placed on a permanent mailing list and will automatically receive updated information whenever listing or other changes occur. Questions or comments pertaining to the notebook should be directed to the Endangered Species Office, U.S. Fish and Wildlife Service, Richard B. Russell Federal Building, 75 Spring St., S.W., Atlanta, Georgia 30303; telephone 404/221-3583 or FTS 242-3583. Other questions pertaining to endangered species matters should be addressed to one of the Service field stations listed at the end of this Preface.

The notebook is divided into two primary sections. Materials in the first section provide quick reference as to what species are listed, proposed, or under review, the states where they occur, the location of critical habitat areas, and other related information. The second part of the notebook contains species accounts which briefly discuss such things as the status, range, life history, and management needs of listed species. Please note that the range maps for these species generally reflect current distribution, but in many cases they reflect distribution rather broadly and should only be interpreted in relation to other information included in the species account.

The Endangered Species Act - General

Passage of the Endangered Species Act of 1973 gave the United States one of the most far-reaching laws ever enacted by any country to prevent the extinction of imperiled animals and plants. Under the law, the Secretary of the Interior (acting through the U.S. Fish and Wildlife Service) has broad powers to protect and conserve all forms of wildlife and plants he finds in serious jeopardy. The Secretary of Commerce, acting through the National Marine Fisheries Service, has similar authority for protecting and conserving most marine life.

Congress addressed the question of why we should save endangered species in the preamble to the Endangered Species Act, holding that endangered and threatened species of fish, wildlife and plants "are of esthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people." In making this statement, Congress was summarizing a number of convincing arguments advanced by thoughtful scientists, conservationists, and others who are greatly concerned by the disappearance of wildlife.

Protecting endangered species and restoring them to the point where their existence is no longer jeopardized is the primary objective of the U.S. Fish and Wildlife Service's Endangered Species Program.

The Listing Process

The Fish and Wildlife Service follows a formal "rulemaking" procedure in determining which species should be placed on the U.S. List of Endangered and Threatened Wildlife and Plants. The Act defines an "endangered" species as one that is in danger of extinction throughout all or a significant portion of its range. A "threatened" species is defined as one that is likely to become endangered within the foreseeable future.

A "rulemaking" is the process used by Federal agencies (and many states) to propose and later adopt regulations which have the effect of law, and apply to all U.S. residents. The proposed rule is published in the Federal Register, a daily Government publication, to provide for public notification and a period for comments. The proposal is then reevaluated, and if adopted it is published again as a final rule. Endangered or threatened species are placed on the list, reclassified, or deleted through this process.

Protection Under the Act

Section 9 of the Act prohibits the illegal possession, import, export, or interstate or foreign sale of listed species (including their parts and products). It is also illegal to kill, harrass, harm, or remove listed species of animals from the wild. Taking of plants is prohibited only on Federal lands. Under Section 7 of the Act, Federal agencies are required to insure that actions they authorize (by permit), fund, or carry out do not jeopardize the existence of listed species or adversely affect critical habitat.

Penalties for violations can range from a warning and seizure of illegally held wildlife specimens and products to a maximum of $20,000 and/or a year in jail for criminal offenses.

Critical Habitat

The Endangered Species Act, as amended, calls for the conservation of what is termed "critical habitat"--the areas of land, water, and air space an[redacted] threatened species needs for survival. These areas include such things as food and water, breeding sites, cover or shelter, and sufficient habitat to provide for normal population growth and behavior. Critical habitat is usually included with the proposal to list a species. However, if it is determined separately at a later date, the rulemanking procedure is the same as for classifying a species as endangered or threatened.

One of the primary threats to most species is the destruction or modification of essential habitat areas by uncontrolled land and water development. Accordingly, the law requires all Federal agencies to insure that actions they authorize (by permit), fund, or carry out do not jeopardize the existence of listed species or adversely affect critical habitat.

It should be emphasized, however, that not all Federal actions will necessarily be detrimental to critical habitat. There may be many kinds of actions which can be carried out within a critical habitat area without reducing the species' numbers or distribution, or otherwise posing jeopardy to it.

In summary, the designation of critical habitat does not create a nature preserve or refuge. It does not affect private, local, or state projects unless Federal funds or permits are involved. It does provide a means by which listed species can be protected from adverse impacts resulting from Federal action.

Consultation

Section 7 of the Act requires all Federal agencies to review their actions, and if they determine that their actions may affect a listed species or its habitat, they must enter into consultation with the Fish and Wildlife Service. During the course of such consultation the involved agency and the Fish and Wildlife Service will try to determine a course of action which will allow for completion of the agency's project and at the same time not jeopardize the species. Most consultations accomplish this goal.

In the case of a conflict, the Act provides a means whereby under certain conditions the affected Federal agency may be exempted from the requirements of Section 7. Exemption applications must be submitted to the Secretary of the Interior for consideration. If the Secretary decides the application meets exemption criteria, it is then passed on to a seven-member cabinet-level Endangered Species Committee for a final decision.

Conservation and Recovery

A main aim of the Service's Endangered Species Program is to restore populations of listed species to a point where they are no longer in danger of extinction and are again self-sustaining members of their ecosystem. Recovery plans for a number of these species are already being carried out. The plans may recommend the acquisition of land, new research, captive breeding, or may call for special wildlife and habitat management techniques.

In addition to overseeing the development and implementation of recovery plans, the Fish and Wildlife Service utilizes the authorities and funding provided under the Act to provide for technical assistance, management, law enforcement, land acquisition, research, status surveys, and financial assistance to state agencies which have entered into a cooperative agreement with the Service.

Permits

The Service's Wildlife Permit Office can issue permits for certain activities involving endangered or threatened species. Permits for

endangered species are issued only for scientific or breeding purposes. In addition to these purposes, permits for threatened species may be issued for educational activities, zoo exhibitions, and other special purposes.

U.S. Fish and Wildlife Service Endangered Species Field Offices - Region 4

U.S. Fish and Wildlife Service
100 Otis Street, Room 224
Asheville, NC 28801
Phone: 704/259-0321
FTS 672-0321

(serves KY, NC, SC, TN)

KY, TN - Jim Widlak

U.S. Fish and Wildlife Service
Jackson Mall Office Center
300 Woodrow Wilson Avenue, Suite 316
Jackson, MS 39213
Phone: 601/960-4900
FTS 490-4900

(serves AL, AR, LA, MS)

U.S. Fish and Wildlife Service
2747 Art Museum Drive
Jacksonville, Florida 32207
Phone: 904/791-2580
FTS 946-2580

(serves GA and FL)

U.S. Fish and Wildlife Service
Post Office Box 491
Boqueron, PR 00622
Phone: 809/851-7297

(serves PR and VI)

12/16/87

Endangered and Threatened Species in Region 4*

(E=Endangered; T=Threatened)

Mammals:	Distribution:
Bat, gray (E)	AL,AR,FL,GA,KY,NC,TN
Bat, Indiana (E)	AL,AR,FL,GA,KY,NC,TN
Bat, Ozark big-eared (E)	AR
Bat, Virginia big-eared (E)	KY,NC
Cougar, Eastern (E)	KY,NC,SC,TN
Deer, Key (E)	FL
Manatee, West Indian (E)	AL,FL,GA,NC,PR,SC
Mouse, Alabama beach (E)	AL
Mouse, Choctawhatchee beach (E)	FL
Mouse, Key Largo cotton (E)	FL
Mouse, Perdido Key beach (E)	AL, FL
Panther, Florida (E)	AL,AR,FL,GA,LA,MS,SC,TN
Shrew, Dismal Swamp southeastern (T)	NC
Squirrel, Carolina northern flying (E)	NC,TN
Whale, finback (E)	Oceanic
Whale, humpback (E)	Oceanic
Whale, right (E)	Oceanic
Whale, sei (E)	Oceanic
Whale, sperm (E)	Oceanic
Wolf, red (E)	LA
Woodrat, Key Largo (E)	FL
Birds:	
Blackbird, yellow-shouldered (E)	PR
Caracara, Audubon's Crested (T)	FL
Crane, Mississippi Sandhill (E)	MS
Curlew, Eskimo (E)	LA (historic, near extinction)
Eagle, bald Southeastern (E)	AL,AR,FL,GA,KY,LA,MS,NC,SC,TN
Falcon, American peregrine Eastern (E)	AL,GA,KY,NC,SC,TN
Falcon, Arctic peregrine (T)	AL,AR,FL,GA,KY,LA,MS,NC,PR, SC,TN
Jay, Florida scrub (T)	FL
Kite, Everglade (E)	FL
Parrot, Puerto Rican (E)	PR
Pelican, brown (E)	LA,MS,PR,VI

*Includes the Carolinas, Georgia, Florida, Alabama, Tennessee, Kentucky, Mississippi, Arkansas, Louisiana, Puerto Rico, and the Virgin Islands.

Birds (cont'd):	Distribution
Pigeon, Puerto Rican plain (E)	PR
Plover, piping (T)	AL,FL,GA,LA,MS,NC,PR,SC
Sparrow, Cape Sable (E)	FL
Sparrow, dusky seaside (E)	FL (near extinction)
Sparrow, Florida grasshopper (E)	FL
Stork, wood (E)	FL,GA,SC
Tern, least; interior population (E)	AR,KY,LA,MS,TN
Tern, roseate (T)	FL,PR,VI
Warbler (wood), Bachman's (E)	AL,AR,FL,GA,KY,LA,MS,NC,SC,TN (historic, possibly extinct)
Warbler (wood), Kirtland's (E)	FL,GA,KY,NC,SC,TN
Whip-poor-will, Puerto Rican (E)	PR
Woodpecker, ivory-billed (E)	AL,AR,FL,GA,KY,LA,MS,NC,SC,TN (historic, probably extinct)
Woodpecker, red-cockaded (E)	AL,AR,FL,GA,KY,LA,MS,NC,SC,TN
Reptiles and Amphibians:	
Alligator, American (T,S/A) *	AL,AR,FL,GA,LA,MS,NC,SC
Anole, giant (E)	PR
Boa, Mona (T)	PR
Boa, Puerto Rican (E)	PR
Boa, Virgin Islands tree (E)	VI
Coqui, golden (T)	PR
Crocodile, American (E)	FL
Florida bonamia (T)	FL
Heller's blazing star (T)	NC
Higuero de Sierra (E)	PR
Gecko, Monito (E)	PR
Iguana, Mona ground (T)	PR
Lizard, St. Croix ground (E)	VI
Salamander, Red Hills (T)	AL
Shiner, Cape Fear (E)	NC
Skink, blue-tailed mole (T)	FL
Skink, sand (T)	FL
Snake, Atlantic salt marsh (T)	FL
Snake, eastern indigo (T)	AL,FL,GA,MS,SC
Toad, Puerto Rican crested (T)	PR
Tortoise, gopher (T)	AL,LA,MS

* Alligators are biologically neither endangered nor threatened and may be hunted as permitted under State law. For law enforcement purposes they are classified as "Threatened due to Similarity of Appearance."

Reptiles and Amphibians (cont'd):	Distribution
Turtle, Alabama red-bellied (E)	AL
Turtle, flattened musk (T)	AL
Turtle, green (T) (E in Florida)	AL,FL,GA,LA,MS,NC,PR,SC,VI
Turtle, hawksbill (E)	AL,FL,GA,LA,MS,NC,PR,SC,VI
Turtle, Kemp's (Atlantic) ridley (E)	AL,FL,GA,LA,MS,NC,SC
Turtle, leatherback (E)	AL,FL,GA,LA,MS,NC,PR,SC,VI
Turtle, loggerhead (T)	AL,FL,GA,LA,MS,NC,PR,SC,VI
Turtle, ringed sawback (T)	LA,MS
Fishes:	
Cavefish, Alabama (T)	AL
Cavefish, Ozark (T)	AR
Chub, slender (T)	TN
Chub, spotfin (T)	NC,TN
Dace, blackside (T)	KY,TN
Darter, amber (E)	TN,GA
Darter, Bayou (T)	MS
Darter, leopard (T)	AR
Darter, Okaloosa (E)	FL
Darter, slackwater (T)	AL,TN
Darter, snail (T)	GA,TN,AL
Darter, watercress (E)	AL
Logperch, Conasauga (E)	TN,GA
Madtom, smoky (E)	TN
Madtom, yellowfin (T)	TN
Shiner, Cape Fear (E)	NC
Silverside, Waccamaw (T)	NC
Sturgeon, shortnose (E)	FL,GA,NC,SC
Mollusks:	
Mussel, Alabama lamp pearly (E)	AL,TN
Mussel, Appalachian monkeyface (E)	TN
Mussel, birdwing pearly (E)	TN
Mussel, Cumberland bean pearly (E)	KY,TN
Mussel, Cumberland monkeyface pearly (E)	TN
Mussel, Curtus' (E)	MS
Mussel, dromedary pearly (E)	TN
Mussel, fat pocketbook pearly (E)	AR
Mussel, fine-rayed pigtoe pearly (E)	AL,TN
Mussel, green-blossom pearly (E)	TN
Mussel, Judge Tait's (E)	AL,MS
Mussel, Marshall's (E)	AL

Mollusks (Cont'd.):	Distribution
Mussel, orange-footed pearly (E)	AL,TN,KY
Mussel, pale lilliput pearly (E)	AL
Mussel, penitent (E)	AL,MS
Mussel, pink mucket pearly (E)	AL,KY,TN,AR
Mussel, rough pigtoe pearly (E)	KY,TN,AL
Mussel, shiny pigtoe pearly (E)	AL,TN
Mussel, stirrup shell (E)	AL
Mussel, tan riffle shell (E)	KY,TN (historic occurrence)
Mussel, Tar River spiny (E)	NC
Mussel, tuberculed-blossom pearly (E)	KY,TN (historic, possibly extinct)
Mussel, turgid-blossom pearly (E)	TN,AL,AR (historic, possibly extinct)
Mussel, white warty-back pearly (E)	TN
Mussel, yellow-blossom pearly (E)	AL,KY,TN (historic, possibly extinct)
Snail, noonday (T)	NC
Snail, painted snake coiled forest (T)	TN
Snail, Stock Island tree (T)	FL
Arthropods	
Butterfly, Schaus swallowtail (E)	FL
Crayfish (cave species; no common name) (E)	AR
Crayfish, Nashville (E)	TN
Shrimp, Kentucky cave (E)	KY
Plants:	
Alabama leather flower (E)	AL
Beautiful goetzea (E)	PR
Beautiful pawpaw (E)	FL
Blue Ridge goldenrod (T)	NC,TN
Bunched arrowhead (E)	NC,SC
Canby's dropwort (E)	NC,SC,GA
Carter's mustard (E)	FL
Chapman's rhododendron (E)	FL
Cook's holly (E)	PR
Crenulate lead-plant (E)	FL
Deltoid spurge (E)	FL
Elfin tree fern (E)	PR
Florida bonamia (T)	FL
Florida golden aster (E)	FL
Florida torreya (E)	FL,GA

Plants (cont'd):	Distribution
Four-petal pawpaw (E)	FL
Fragrant prickly-apple (E)	FL
Garber's spurge (T)	FL
Geocarpon minimum (T)	AR
Green pitcher plant (E)	AL,GA,NC
Hairy rattleweed (E)	GA
Harper's beauty (E)	FL
Heller's blazing star (T)	NC
Highlands scrub hypericum (E)	FL
Higuero de Sierra (E)	PR
Key tree-cactus (E)	FL
Lakela's mint (E)	FL
Large-flowered skullcap (E)	GA,TN
Longspurred mint (E)	FL
Miccosukee gooseberry (T)	FL,SC
Mountain golden heather (T)	NC
Palo de Ramon (E)	PR
Papery whitlow-wort (T)	FL
Persistent trillium (E)	GA,SC
Pondberry (E)	AR,GA,MS,NC,SC
Prickly-ash (E)	PR, VI
Pygmy fringe tree (E)	FL
Rough-leaved loosestrife (E)	NC
Rugel's pawpaw (E)	FL
Ruth's golden aster (E)	TN
Scrub lupine (E)	FL
Scrub mint (E)	FL
Scrub plum (E)	FL
Short's goldenrod (E)	KY
Small whorled pogonia (E)	GA,NC,SC,TN
Small's milkpea (E)	FL
Snakeroot (E)	FL
Tennessee coneflower (E)	TN
Tiny polygala (E)	FL
Vahl's boxwood (E)	PR
Wheeler's peperomia (E)	PR
Wide-leaf warea (E)	FL
Wireweed (E)	FL

Federally Listed Species by State

MISSISSIPPI

(E=Endangered; T=Threatened; CH=Critical Habitat determined)

Mammals	General Distribution
Panther, Florida (Felis concolor coryi) - E	Entire state
Whale, right (Eubalaena glacialis) - E	Coastal waters
Whale, finback (Balaenoptera physalus) - E	Coastal waters
Whale, humpback (Megaptera novaeangliae) - E	Coastal waters
Whale, sei (Balaenoptera borealis) - E	Coastal waters
Whale, sperm (Physeter catodon) - E	Coastal waters
Birds	
Crane, Mississippi sandhill (Grus canadensis pulla) - E,CH	Southern Jackson County
Eagle, bald (Haliaeetus leucocephalus) - E	Entire state
Falcon, Arctic peregrine (Falco peregrinus tundrius) - T	Entire state
Pelican, brown (Pelecanus occidentalis) - E	Coast
Plover, piping (Charadrius melodus) - T	Coast
Tern, least (Sterna antillarum); interior population - E	Mississippi River
Warbler, Bachman's (Vermivora bachmanii) - E	Entire state
Woodpecker, ivory-billed (Campephilus principalis) - E	West, South, East Central
Woodpecker, red-cockaded (Picoides (=Dendrocopos) borealis) - E	Entire state
Reptiles	
Alligator, American (Alligator mississippiensis) - T (S/A)*	South and West
Snake, eastern indigo (Drymarchon corais couperi) - T	South
Tortoise, gopher (Gopherus polyphemus) - T	Lower Gulf Coastal Plain (14 counties)
Turtle, Kemp's (Atlantic) ridley (Lepidochelys kempii) - E	Coastal waters
Turtle, green (Chelonia mydas) - T	Coastal waters

MISSISSIPPI (cont'd)

	General Distribution
Turtle, hawksbill (Eretmochelys imbricata) - E	Coastal waters
Turtle, loggerhead (Caretta caretta) - T	Coastal waters
Turtle, ringed sawback (Graptemys oculifera) - T	Pearl River
Fishes	
Darter, bayou (Etheostoma rubrum) - T	Bayou Pierre drainage
Mollusks	
Mussel, Curtus' (Pleurobema curtum) - E	East Fork Tombigbee River
Mussel, Judge Tait's (Pleurobema taitianum) - E	East Fork Tombigbee River and Buttahatchie [illegible]
Mussel, penitent (Epioblasma [=Dysnomia] penita) - E	East Fork
Plants	
Lindera melissifolia (Pondberry) - E	Sharkey and Sunflower Counties

*Alligators are biologically neither endangered nor threatened [illegible] enforcement purposes they are classified as "Threatened due [illegible]ty of Appearance." Alligator hunting is regulated in accordance with State law.

B&V WASTE SCIENCE AND TECHNOLOGY CORP.

TELEPHONE MEMORANDUM

USEPA Region IV

BVWST Project 52011.040
BVWST File
July 6, 1992
14:00

State Endangered and Threatened Species within the Target Area of Hercules, Inc.

To: Kathy Luncheford, Biologist
Company: U. S. Fish and Wildlife Service
Phone No.: (601) 638-1891

Recorded by: Carter Helm

Summary of conversation: Ms. Luncheford said that the Gopher Tortoise is a threatened species found in very dry areas with steep terrain. The Red Cockaded Woodpecker is the only endangered species in the state of Mississippi. The Eastern Indigo Snake is a threatened species in Mississippi, but typically not found in Forrest County. The Yellow Blotched Map Turtle *(Graptemys flavimaculata)* is a threatened species found in all of the Leaf River in Forrest County, Mississippi. The Yellow Blotched Map Turtle sighting area is from the U. S. Highway 84 bridge in Covington County, downstream to the Leaf River and Chickasawhay River. It occurs in the Chickasawhay River upstream to Enterprise, Clarke County. It is present in Pascagoula River from Merrill, George County, south into east and west Pascagoula channels in Jackson County. The Yellow Blotched Map Turtle is the only threatened species sighting located along the 15-mile migration pathway of the site.

TELEPHONE MEMORANDUM

US EPA -- Region IV
Hercules, Inc.
Uses of the Leaf and Bowie Rivers and Endangered or Threatened Species Within the Target Area of the Hercules Facility

BVWST Project 52011.040
BVWST File
June 8, 1992
11:50 a.m.

To: Mr. Richard Hill, Conservation Officer
Company: Department of Wildlife, Fisheries and Parks
Phone No.: (601) 362-9212

Recorded by: Carter Helm

Summary of conversation: Mr. Hill said that the Leaf and Bowie Rivers are used basically for sport and commercial fishing. The rivers are not deep enough for pleasure activities such as boating. However, Mr. Hill does state that Greens Creek is too small for fishing and recreational swimming; however, the Bowie and Leaf River have been used for recreational swimming. He said the Leaf River is not classified a sensitive environment. The Gopher Tortoise is endangered in the dry areas of Mississippi. Mr. Hill was not able to give the exact location of the endangered species sighting. Mr. Hill said many years ago a fish kill took place in the Leaf River, but he did not have any details regarding the fish kill.

ms

i

Hercules
LATITUDE 31:20:20 LONGITUDE 89:18:25 1980 POPULATION

KM	0.00-.400	.400-.810	.810-1.60	1.60-3.20	3.20-4.80	4.80-6.40	SECTOR TOTALS
S 1	0	0	0	0	1079	0	1079
S 2	0	0	490	0	1148	0	1638
S 3	0	0	1560	1892	2512	4468	10432
S 4	580	0	0	2649	4216	1346	8791
S 5	0	0	1229	4611	2689	0	8529
S 6	0	0	1224	4524	6106	1200	13054
S 7	0	0	1224	2065	3747	3211	10247
S 8	0	0	0	0	1953	0	1953
RING TOTALS	580	0	5727	15741	23450	10225	55723

press RETURN to continue
MENU: Geodata Handling Data List procedures
Enter [illegible] name (in parentheses) ([illegible])
or a command: HELP, HELP option, BACK, CLEAR, EXIT, TUTOR
GEMS> exit

Type YES to confirm the EXIT command; type NO to restart GEMS
GEMS> yes
$ logout
HTW logged out at 25-SEP-1992 09:35:47.17
Itemized resource charges, for this session, follow:

NODE: VAXTM1
ACCT: 9040
PROJ: GEMS0001
USER: HTW
UIC: [000710,000012]
BAUD:

START TIME: 25-SEP-1992 09:33:26.79
FINISH TIME: 25-SEP-1992 09:35:47.17
BILLING PERIOD: 920901
WEEKDAY: FRIDAY
TERMINAL PORT: VTA1787

DESCRIPTION OF CHARGE		QUANTITY	EXPENDITURE
ALL CHARGE LEVELS			
300 baud	(Seconds)	140	0.0000
CPU TIME	(Seconds)	9	0.5000
TOTAL FOR THIS SESSION			$ 0.5000

** Note: This total reflects the charges for this process only, subprocesses created during this session are accounted for separately
Enter selection: