

GGNS
EARLY SITE PERMIT APPLICATION
PART 3 – ENVIRONMENTAL REPORT

TABLE 2.2-1

ACREAGE AFFECTED BY VARIOUS FACILITIES
ASSOCIATED WITH GRAND GULF NUCLEAR STATION

	Area (acres)	Area (hectares)
TOTAL SITE ³	2100	850
CURRENT GGNS UNIT 1 SITE USE		
Station Area (Includes) ³ Permanent Bldgs. Cooling Tower Areas Standby service water cooling towers and basins	94	38
Switchyard ³	52	21
Plant Service Water Supply And Discharge Line, And Heavy Haul Road	38 ¹	15
Radial Wells, access road, swgr. house	15 ¹	6
Barge Slip and Associated Facilities	8 ¹	3
Borrow Pit	16 ⁴	6.5
Transmission Line Corridors ¹ Port Gibson 115kV Baxter Wilson Franklin	67 521 1057	27 211 428
PROPOSED NEW CONSTRUCTION AREAS ²		
A	40	16
B	10	4
C	60	24
D	45	18
E	95	38
F	90	36
G	55	22
TOTAL FOR NEW CONSTRUCTION AREAS	395	160

NOTES:

1. Approximate – Based on Current Site Layout and GGNS FER Table 4.1-1 (Reference 13)
2. Approximate – (Based On Site Layout of Figure 2.2-1)
3. From GGNS UFSAR Section 2.1.2.1.1
4. Based on approximate measurement from Figure 2.4-2.

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TABLE 2.2-2
LAND USE WITHIN TRANSMISSION LINE CORRIDOR
(CORRIDOR LENGTH IN MILES)

TRANSMISSION LINE ROUTES				
Land Use	Baxter Wilson	Franklin	Port Gibson	Total
Agriculture	9.0	14.0	5.0	28
Forestry	12.0	29.6	0.5	42.1
Residential	0.0	0.0	0.0	0.0
Industrial	1.0	0.0	0.0	1.0
Total Miles	22.0	43.6	5.5	71.1

SOURCE: References 7 and 13

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TABLE 2.2-3

CLAIBORNE COUNTY AND DISTRICT 7 CROP ESTIMATES FOR 2001

County	Crop	Acreage Planted	Acreage Harvested	Yield per Acre (Bushels)	Production (Bushels)
Claiborne	Corn (For Grain)	4,300	4,300	143.0	615,000
District 7	Corn (For Grain)	39,400	37,300	131.7	4,912,000
Claiborne	Cotton	Not reported		Not reported	Not reported
District 7	Cotton	43,700		707 lbs/acre	63,500 Bales (480 lbs/bale net wt.)
Claiborne	Soybean	Not reported		Not reported	Not reported
District 7	Soybean (For beans)	27,200	25,600	32.9	841,000
Claiborne	Wheat – All	2,100	2,100	43.7	91,800
District 7	Wheat - All	7,200	7,200	46.5	335,000

SOURCE: Reference 5

NOTES:

1. District 7 includes Adams, Amite, Claiborne, Copiah, Franklin, Hinds, Jefferson, Lincoln, Warren and Wilkinson Counties in Mississippi.

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TABLE 2.2-4

AVERAGE CROP YIELDS FOR CLAIBORNE COUNTY, MS AND DISTRICT 7
1997 – 2001

County	Crop	Number of Years	Average Yields (Bushels)
Claiborne	Corn (For Grain)	5	114.5
District 7	Corn (For Grain)	5	108.2
Claiborne	Cotton	1	846 pounds
District 7	Cotton	5	723 pounds
Claiborne	Soybean	1	29.7
District 7	Soybean	5	28.0
Claiborne	Wheat – All	1	43.7
District 7	Wheat – All	5	46.2

SOURCE: Reference 5

NOTES:

1. District 7 includes Adams, Amite, Claiborne, Copiah, Franklin, Hinds, Jefferson, Lincoln, Warren and Wilkinson Counties in Mississippi.

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TABLE 2.2-5

LIVESTOCK COMMODITY ESTIMATES FOR 2002 FOR
CLAIBORNE COUNTY, MS AND DISTRICT 7

	All Cattle and Calves	Beef Cows	Milk Cows
Claiborne	12,800	6,800	None
District 7	158,000	78,000	7,000

SOURCE: Reference 5

NOTES:

1. District 7 includes Adams, Amite, Claiborne, Copiah, Franklin, Hinds, Jefferson, Lincoln, Warren and Wilkinson Counties in Mississippi.

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TABLE 2.2-6

TENSAS PARISH, LA, AND DISTRICT 3 CROP ESTIMATES FOR 2001

Parish	Crop	Acreage Planted	Acreage Harvested	Yield per Acre (Bushels)	Production (Bushels)
Tensas	Corn (For Grain)	34,000	33,200	157	5,210,000
District 3	Corn (For Grain)	201,000	195,500	156	30,460,000
Tensas	Rice – All	--	2,349	155	363,630 cwt
District 7	Rice – All	77,400	77,100	5,950 lbs	4,590,000 cwt
Tensas	Soybean	12,000	11,500	32	370,000
District 3	Soybean	167,000	160,000	33	5,330,000
Tensas	Wheat – All	9,600	9,200	58	530,000
District 3	Wheat – All	95,000	89,000	54	4,800,000
Tensas	Sorghum (For Grain)	13,900	13,000	97	1,260,000
District 3	Sorghum (For Grain)	74,000	68,000	80	5,425,000

SOURCE: References 6, 9 and 15

NOTES:

1. District 3 includes East Carroll, West Carroll, Franklin, Madison, Morehouse, Richland and Tensas, Parishes in Louisiana.

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TABLE 2.2-7

AVERAGE CROP YIELDS FOR TENSAS PARISH, LA, AND DISTRICT 3
1997 – 2001

County	Crop	Number of Years	Average Yields (Bushels)
Tensas	Corn (For Grain)	5	117
District 3	Corn (For Grain)	5	122
Tensas	Rice – All	3	5,083 lbs
District 3	Rice – All	5	5,226 lbs
Tensas	Soybean	5	27
District 3	Soybean	5	27
Tensas	Wheat – All	5	46
District 3	Wheat – All	5	46
Tensas	Sorghum (For Grain)	5	81
District 3	Sorghum (For Grain)	5	73

SOURCE: References 6, 9 and 15

NOTES:

1. District 3 includes East Carroll, West Carroll, Franklin, Madison, Morehouse, Richland and Tensas, Parishes in Louisiana.

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TABLE 2.2-8A

LIVESTOCK COMMODITY ESTIMATES FOR 2002 FOR
TENSAS PARISH, LA, AND DISTRICT 3

	All Cattle and Calves	Beef Cows	Milk Cows
Tensas	1,000	600	None reported
District 3	59,000	33,000	500

SOURCE: References 6, 9 and 15

NOTES:

1. District 3 includes East Carroll, West Carroll, Franklin, Madison, Morehouse, Richland and Tensas, Parishes in Louisiana.

TABLE 2.2-8B

TENSAS PARISH LA LIVESTOCK PRODUCTION FOR 2001

Livestock	Numbers
Cattle and Calves	1,000
Milk Cows	None reported
Sheep	25
Goats	50
Swine	100

SOURCE: References 6 and 9

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TABLE 2.3-1
(FER TABLE 2.4.6)

VELOCITY, DISCHARGE, AND WATER SURFACE ELEVATIONS FOR MISSISSIPPI RIVER AT SITE

River Mile	Date	Total Width, Feet	Total Average Depth, Feet	Total Area, Feet ²	Average Velocity, fps	Discharge, cfs	Slope, fpm	Temperature, °F	ALWP, Feet	Water Surface Elevation, Feet
408.40	12-14-71	2,450	34.9	82,525	5.97	510,805	0.6912	48	34.20	54.50
	3-18-71	2,425	61.4	148,900	5.23	778,121	0.5862	47	34.20	73.65
	10-6-70	2,628	20.2	53,073	4.08	216,642	0.6475	70	34.20	59.63
407.6	12-14-71	3,350	31.6	105,750	5.11	540,748	0.7133	48	34.00	53.95
	3-18-71	3,600	53.0	190,925	5.86	1,119,309	0.5044	47	34.00	73.22
	10-6-70	3,600	35.4	127,375	4.75	605,089	0.4326	71	34.00	56.66
406.8	12-14-71	3,050	31.1	94,800	6.19	586,514	0.1280	48	33.70	53.50
	3-19-71	3,925	56.2	220,450	6.77	1,492,672	0.3524	47	33.70	72.87
	10-14-70	3,026	35.1	106,221	4.16	442,136	0.2353	66	33.70	49.12
406.0	3-31-70	3,292	46.0	151,482	4.46	675,368	0.3007	49	33.50	59.03
	10-14-70	3,262	33.9	110,522	3.89	430,175	0.2353	66	33.50	48.93
	3-19-71	3,405	54.9	187,075	6.44	1,205,089	0.3524	47	33.50	72.58
395.6	12-20-71	3,500	41.8	146,400	5.25	769,121	-0.0179	50	31.80	56.96
	3-23-71	3,927	49.3	193,715	5.31	1,029,399	0.0574	49	31.80	67.02
	10-16-70	3,789	29.9	113,463	3.75	425,273	0.2840	65	31.80	44.79

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TABLE 2.3-2
(UFSAR TABLE 2.4-15)

RANGES OF WATER TEMPERATURES FOR THE MISSISSIPPI RIVER
AT VICKSBURG, MISSISSIPPI - DEGREES F

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1962	34-41	44-50	43-48	48-60	64-78	77-80	82-86	82-84	80-84	64-73	52-60	41-52
1963	33-40	35-38	40-52	54-65	66-70	72-80	81-85	83-86	72-82	70-74	56-65	36-52
1964	34-44	42-43	44-51	52-65	66-78	74-82	82-85	80-86	75-84	62-71	49-63	42-44
1965	40-47	35-42	39-44	46-62	62-74	75-76	81-84	80-84	73-80	62-70	58-61	45-51
1966	34-47	35-44	42-54	54-63	61-70	72-79	80-87	78-86	73-82	60-68	49-65	42-51
1967	38-46	41-47	41-54	56-66	62-68	69-82	76-82	79-84	70-78	62-70	51-55	42-49
1968	35-42	39-44	39-50	51-65	66-71	70-79	79-84	81-85	71-79	64-73	50-62	43-49
1969	38-44	41-45	43-50	50-62	62-73	73-79	81-85	79-84	74-81	58-73	50-57	43-48
1970	30-40	39-42	45-49	51-65	63-73	74-80	80-84	79-84	78-84	62-72	48-61	44-50
1971	40-41	39-42	44-50	49-63	65-70	70-82	80-86	79-84	76-86	70-77	51-70	47-50
1972	42-50	40-46	46-53	53-62	62-74	75-80	77-85	83-84	79-83	57-75	47-60	40-47
1973	38-44	41-43	46-55	54-61	64-77	72-82	82-86	81-84	75-80	66-75	56-61	43-57
1974	37-47	44-48	46-57	54-69	67-74	73-76	76-86	81-83	69-83	64-68	52-67	45-49
1975	43-47	42-50	40-50	48-60	61-72	70-78	77-79	76-84	68-83	61-69	48-62	42-52
1976	38-43	40-50	51-55	57-64	61-67	69-79	78-84	80-84	75-79	58-73	46-55	42-46
1977	34-37	35-45	44-55	57-65	66-78	77-82	80-84	76-83	71-78	56-70	49-60	38-48
1978	35-38	30-38	38-44	48-58	58-64	68-80	82-84	80-85	74-80	60-72	54-60	42-50
1979	32-42	32-40	38-48	51-58	59-70	69-76	76-80	78-81	69-79	61-70	47-59	40-46

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TABLE 2.3-3

USGS WATER TEMPERATURE MEASUREMENT FOR MISSISSIPPI RIVER AT
VICKSBURG, MISSISSIPPI

SAMPLE DATE	SAMPLE TIME	WATER TEMP, ° C	WATER TEMP, ° F	INSTANTANEOUS DISCHARGE, CFS	GAGE HEIGHT, FEET
4/12/73	14:15	12	53.6	1760000	
4/12/73	14:30	12	53.6	1760000	
4/12/73	14:45			1760000	
4/12/73	15:10			1760000	
5/3/73	0:01			1900000	
5/3/73	13:50	17	62.6	1900000	
5/17/73	11:50			1930000	
6/7/73	0:01			1360000	
6/7/73	11:20				
7/13/73	10:00			634000	
8/9/73	10:00			512000	
9/6/73	11:00	27	80.6	338000	
10/4/73	10:30	24.5	76.1	361000	
11/1/73	11:00	17	62.6	540000	
12/4/73	12:00	13	55.4	1050000	
12/17/73	13:00	7.5	45.5	1260000	
1/15/74	14:00	8	46.4	1230000	
1/30/74	13:30	9	48.2	1430000	
3/12/74	12:30	12.5	54.5	956000	
4/10/74	14:00	13	55.4	1020000	
5/7/74	14:00	20	68	822000	
6/5/74	14:00	24	75.2	1050000	
7/9/74	12:00	26	78.8	899000	
8/15/74	12:00	28	82.4	339000	
9/6/74	12:00	24	75.2	480000	
10/8/74	12:00	19	66.2	355000	
11/8/74	12:00	16.8	62.24	419000	
12/3/74	12:00	8.5	47.3	664000	
1/14/75	12:00	6	42.8	928000	
2/10/75	11:00	6	42.8	1100000	
3/7/75	13:00	9.5	49.1	1200000	
4/3/75	13:00	10.5	50.9	1680000	
5/14/75	14:00	14.5	58.1	1270000	
6/5/75	13:00	25	77	774000	
7/15/75	13:00	28	82.4	511000	
7/31/75	18:00	29	84.2	408000	

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TABLE 2.3-3 (Continued)

SAMPLE DATE	SAMPLE TIME	WATER TEMP, ° C	WATER TEMP, ° F	INSTANTANEOUS DISCHARGE, CFS	GAGE HEIGHT, FEET
4/12/73	14:15	12	53.6	1760000	
8/5/75	12:00	27.5	81.5	388000	
9/9/75	14:00	29	84.2	400000	
10/15/75	12:00	21.5	70.7	341000	
11/6/75	12:00	17	62.6	441000	
12/12/75	12:00	8	46.4	633000	
1/15/76	13:00	3.5	38.3	921000	
2/10/76	13:00	3.5	38.3	719000	
3/2/76	12:00	11	51.8	961000	
4/6/76	12:00	15	59	831000	
5/5/76	13:00	17	62.6	637000	
6/2/76	12:00	22	71.6	429000	
7/7/76	13:00	26	78.8	474000	
7/28/76	12:00	29	84.2	342000	
8/11/76	11:00	27.5	81.5	299000	
9/8/76	11:00	26	78.8	233000	
10/12/76	11:30	19	66.2	242000	
11/1/76	12:00	12	53.6	305000	
12/7/76	11:00	6.5	43.7	240000	
1/4/77	11:00	1.5	34.7	234000	
2/8/77	12:00	1.5	34.7	210000	
3/8/77	12:00	7.5	45.5	738000	
4/5/77	11:00	14	57.2	812000	
5/3/77	12:00	19.5	67.1	499000	
6/1/77	11:00	27.5	81.5	308000	
6/28/77	12:00	29	84.2	259000	
8/2/77	12:00	29.6	85.28	281000	
9/7/77	12:00	28	82.4	301000	
10/4/77	12:00	23	73.4	489000	
11/1/77	10:00	17.5	63.5	403000	
12/5/77	11:00	10	50	770000	
1/4/78	11:00	3.5	38.3	719000	
2/3/78	14:00	1.5	34.7	753000	
3/7/78	11:30	5.5	41.9	468000	
3/28/78	11:30	6.5	43.7	1210000	
5/5/78	11:00	13	55.4	830000	
6/13/78	12:00	23	73.4	610000	
7/11/78	13:00	31	87.8	498000	
8/1/78	11:00	30	86	431000	

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SAMPLE DATE	SAMPLE TIME	WATER TEMP, ° C	WATER TEMP, ° F	INSTANTANEOUS DISCHARGE, CFS	GAGE HEIGHT, FEET
4/12/73	14:15	12	53.6	1760000	
9/6/78	10:30	27.5	81.5	340000	
10/3/78	14:00	25	77	378000	
11/7/78	13:00	17	62.6	280000	
12/4/78	15:00	11	51.8	490000	
1/3/79	15:00	5	41	839000	
2/7/79	12:30	2	35.6	919000	
3/6/79	13:00	5	41	1170000	
4/3/79	12:30	11.5	52.7	1400000	
5/1/79	12:00	16.5	61.7	1660000	
6/5/79	13:00	22.5	72.5	930000	
7/3/79	11:30	27	80.6	621000	
8/7/79	12:00	28.5	83.3	747000	
9/25/79	13:30	23	73.4	701000	
10/2/79	11:00	22.5	72.5	721000	
11/6/79	13:30	16	60.8	382000	
12/11/79	12:00	7.5	45.5	905000	
1/8/80	11:30	6	42.8	780000	
2/5/80	11:00	3.5	38.3	578000	
4/4/80	13:00	11.5	52.7	1270000	
4/28/80	13:00	15	59	1190000	
6/3/80	13:00	24.5	76.1	620000	
6/27/80	11:00	26	78.8	580000	
7/29/80	13:00	27	80.6	325000	
8/26/80	13:00	29.5	85.1	422000	
10/8/80	11:00	20	68	302000	
11/3/80	13:00	15	59	243000	
12/1/80	13:30	9	48.2	318000	
1/13/81	12:00	3	37.4	176000	
2/3/81	14:00	6	42.8	192000	
2/25/81	15:00	6.5	43.7	393000	
3/25/81	11:00	10	50	334000	
4/28/81	12:00	19.5	67.1	621000	
5/28/81	12:00	18.5	65.3	850000	
6/24/81	12:00	27	80.6	876000	
7/29/81	11:00	29	84.2	520000	
9/22/81	12:00	23.5	74.3	322000	
10/29/81	12:00	15	59	332000	
1/6/82	12:00	6	42.8	482000	

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SAMPLE DATE	SAMPLE TIME	WATER TEMP, ° C	WATER TEMP, ° F	INSTANTANEOUS DISCHARGE, CFS	GAGE HEIGHT, FEET
4/12/73	14:15	12	53.6	1760000	
3/10/82	11:00	7	44.6	1090000	
5/24/82	12:00	24	75.2	545000	
7/15/82	12:00	27	80.6	679000	
12/6/82	14:00	12.5	54.5	911000	
1/11/83	11:30	6	42.8	1380000	41.75
4/26/83	13:00	12.5	54.5	1470000	42.5
7/6/83	12:30	27.5	81.5	594000	22.8
11/17/83	12:00	13	55.4	365000	12
1/17/84	12:00	2.5	36.5	490000	17
5/23/84	12:00	20	68	1580000	45.5
7/18/84	14:00	28	82.4	720000	26
11/9/84	12:00	15.5	59.9	773000	26.75
1/23/85	15:00	2.5	36.5	740000	
3/28/85	12:00	13	55.4	1290000	
7/23/85	11:30	29	84.2	365000	12.25
11/5/85	16:30	15.5	59.9	568000	20.5
1/15/86	14:00	4	39.2	450000	14
4/10/86	13:00	16.5	61.7	624000	22.5
7/16/86	14:00	29.5	85.1	550000	17.4
11/19/86	14:00	12	53.6	886000	29.5
1/28/87	15:00	5	41	591000	20.1
4/22/87	14:00	15	59	948000	30.7
8/13/87	15:30	28.5	83.3	274000	7.6
12/15/87	11:00	9.5	49.1	379000	11
2/10/88	13:00	5	41	918000	29.25
4/20/88	12:30	16.5	61.7	882000	30.75
6/2/88	12:00	24.5	76.1	281000	8
11/16/88	12:30	14	57.2	222000	3.5
2/15/89	13:00	6	42.8	790000	25.25
3/27/89	14:00	12	53.6	938000	35.5
6/23/89	12:00	25	77	876000	31.75
11/14/89	10:00	16.5	61.7	182000	10.5
6/23/90	16:00	26.5	79.7	1050000	36.75
11/30/90	11:30	14	57.2	316000	9.3
2/15/91	13:00	7	44.6	847000	29.8
5/31/91	13:00	25.5	77.9	876000	32.8
7/26/91	14:00	29.5	85.1	373000	13.3
11/15/91	13:30	10	50	374000	11.7

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SAMPLE DATE	SAMPLE TIME	WATER TEMP, ° C	WATER TEMP, ° F	INSTANTANEOUS DISCHARGE, CFS	GAGE HEIGHT, FEET
4/12/73	14:15	12	53.6	1760000	
1/10/92	13:00	7	44.6	744000	25.48
4/3/92	13:00	10.5	50.9	872000	30.2
7/24/92	12:25	28.5	83.3	570000	20.38
10/23/92	11:30	18	64.4	300000	7.29
1/22/93	12:30	5	41	1100000	35.96
4/30/93	12:00	15.5	59.9	1280000	42.6
7/23/93	12:30	29	84.2	938000	35.4
10/15/93	12:00	18	64.4	853000	31.83
2/4/94	12:00	4	39.2	1030000	33.04
5/20/94	12:00	20	68	1260000	42.3
8/26/94	12:00	28	82.4	356000	13.28
6/16/97	14:30	22.2	71.96	951000	37.05
6/16/97	14:35	22.2	71.96		
8/2/99	9:45	32	89.6	410000	15.7
Minimum		1.5	34.7	176000	
Maximum		32	89.6	1930000	

SOURCE:

USGS <http://waterdata.usgs.gov/nwis/gw> (Reference 42)

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TABLE 2.3-4

NPDES THERMAL MONITORING DATA

Date Performed	Discharge Outlet Temperature				Barge Slip Outlet Temperature				Upriver Temperature (Point 1)				Downriver Temperature (Point 7)			
	Surface		5 feet		Surface		5 feet		Surface		5 feet		Surface		5 feet	
	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F
8/21/2001	34.6	94.28	NA ¹	NA ¹	31.5	88.7	29.8	85.64	29.3	84.74	29.4	84.92	29.2	84.56	29.2	84.56
12/6/2001	20	68	12.7	54.86	11.8	53.24	11.7	53.06	11.7	53.06	11.6	52.88	11.7	53.06	11.7	53.06

NOTES:

1. 5 foot sample was not available due to low river stage
2. Sampling points are shown on Figure 2.3-12

SOURCE:

GGNS 2002 NPDES Permit Renewal Application, 2001 Winter and Summer Thermal Monitoring Reports (Reference 10)

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TABLE 2.3-5

FLOOD DISCHARGES AT VICKSBURG, MISSISSIPPI DURING SIX HIGHEST RECENT FLOODS

Year	Vicksburg, MS Station					
	1913	1927	1937	1945	1950	1973
Maximum Discharge, 1000 cfs	1783	2278	2080	1922	1876	1962

NOTES:

1. Updated information on floods at Vicksburg (Corps of Engineers) indicates that no floods since the construction of GGNS have exceeded the discharge of the 1973 flood. (Reference 6)

SOURCE:

Modified from FER Table 2.4.1, and 2002 Corps of Engineers Data (Reference 6)

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TABLE 2.3-6

MAXIMUM DAILY STREAMFLOW IN THE MISSISSIPPI RIVER
AT VICKSBURG (1932-1988)
USGS STATION 07289000

<u>Water Year</u>	<u>Date</u>	<u>Maximum Daily Discharge, cfs</u>
1932	2/26/32	1,410,000
1933		1,360,000
1934		874,000
1935		1,410,000
1936		1,270,000
1937	2/17/37	2,080,000
1938		1,190,000
1939	3/9/39	1,410,000
1940		1,070,000
1941		814,000
1942		1,170,000
1943		1,640,000
1944	5/13/44	1,610,000
1945		1,920,000
1946	1/26/46	1,480,000
1947		1,300,000
1948		1,400,000
1949		1,560,000
1950	2/23/50	1,880,000
1951		1,350,000
1952		1,360,000
1953	5/27/53	983,000
1954	5/8/54	703,000
1955		1,280,000
1956	3/3/56	1,110,000
1957	6/7/57	1,310,000
1958		1,190,000
1959		977,000
1960		1,100,000
1961	5/30/61	1,580,000
1962	4/2/62	1,440,000
1963		1,330,000

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TABLE 2.3-6 (Continued)

<u>Water Year</u>	<u>Date</u>	<u>Maximum Daily Discharge, cfs</u>
1964	4/2/64	1,270,000
1965		1,280,000
1966	2/28/66	1,110,000
1967	5/29/67	1,040,000
1968	4/12/68	1,160,000
1969		1,400,000
1970		1,300,000
1971		1,320,000
1972		1,150,000
1973	5/12/73	1,960,000
1974	2/9/74	1,530,000
1975	4/13/75	1,840,000
1976	3/7/76	1,020,000
1977	4/19/77	980,000
1978		1,350,000
1979		1,690,000
1980		1,370,000
1981	6/2/81	956,000
1982		1,210,000
1983		1,790,000
1984		1,600,000
1985		1,430,000
1986		1,310,000
1987	3/14/87	1,230,000
1988		1,140,000

SOURCE:

USGS Water Resources Investigation Report 93-4076 (Reference 11)

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TABLE 2.3-7

MINIMUM DAILY STREAMFLOW OBSERVED ON THE MISSISSIPPI RIVER
AT VICKSBURG, MS (1932 TO 1988)
USGS STATION 07289000

Water Year ⁺	Date*	Minimum Daily Discharge*, cfs	Date**	Minimum Daily Discharge**, cfs	Stage, ft msl**
1932	11/19/1931	127,000	Nov. 19	127,000	49.12
1933	10/3/1932	156,000	Oct. 3	156,000	51.32
1934		142,000	Aug. 18	142,000	47.87
			Nov. 29, 30		
1935		157,000	Nov. 3	157,000	48.58
1936		101,000	Aug. 29, 31	101,000	42.73
			Sept. 1, 2		
1937	9/30/1937	156,000	Sept. 30	156,000	46.36
1938	12/21/1937	141,000	Dec. 21	141,000	43.12
1939		128,000	Sept. 29	128,000	42.08
1940	11/1/1939	100,000	Nov. 1	99,400	39.35
1941	10/31/1940	118,000	Oct. 31	118,000	39.42
1942	10/7/1941	268,000	Oct. 7	268,000	49.13
1943		214,000	Sept. 25 – 27	214,000	48.52
1944	1/1/1944	156,000	Jan. 1	156,000	43.72
1945		178,000	Nov. 7 – 13	178,000	45.42
1946	9/14/1946	188,000	Sept. 14	188,000	46.42
1947	10/17/1946	182,000	Oct. 17	182,000	45.52
1948		156,000	Oct. 18, 25	156,000	44.32
1949	10/8/1948	150,000	Oct. 8	150,000	45.22
1950		223,000	Dec. 2, 3	223,000	48.82
1951		248,000	Nov. 8, 9	248,000	51.92
1952		183,000	Sept. 30	183,000	47.42
1953	11/3/1952	132,000	Nov. 3	132,000	44.02
1954		136,000	Nov. 24-28	136,000	41.87
1955	9/23/1955	143,000	Sept. 23	143,000	43.72
1956		128,000	Jan. 27, 28	128,000	40.62
1957	10/28/1956	133,000	Oct. 28	133,000	42.12
1958	10/17/1957	230,000	Oct. 17	230,000	49.22
1959	9/28/1959	162,000	Sept. 28	162,000	43.87
1960	10/1/1959	175,000	Oct. 1	175,000	44.22
1961		187,000	Nov. 5, 6	187,000	46.32

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TABLE 2.3-7 (Continued)

Water Year ⁺	Date*	Minimum Daily Discharge*, cfs	Date**	Minimum Daily Discharge**, cfs	Stage, ft msl**
1962		217,000	Aug. 29, 30	217,000	48.82
1963	9/30/1963	163,000	Sept. 30	163,000	44.22
1964	1/8/1964	126,000	Jan. 8	126,000	40.52
1965		179,000	Nov. 9	179,000	45.62
1966	9/21/1966	202,000	Sept. 21	202,000	47.12
1967	11/7/1966	197,000	Nov. 7	197,000	46.52
1968	9/14/1968	204,000	Sept. 14	204,000	49.02
1969	10/1/1968	237,000	Oct. 1	237,000	50.72
1970	9/19/1970	222,000	Sept. 19	222,000	51.12
1971	8/26/1971	249,000	Aug. 26	249,000	52.72
1972	10/20/1971	208,000	Oct. 20	208,000	50.12
1973	9/26/1973	291,000	Sept. 26	291,000	55.32
1974	10/1/1973	312,000	Oct. 16	289,000	52.90
1975	10/16/1974	289,000	Oct. 14	303,000	55.72
1976	9/30/1976	170,000	Sept. 30	170,000	46.35
1977	10/1/1976	175,000	Aug. 14	178,000	46.64
1978	9/1/1978	303,000	Nov. 17	217,000	49.34
1979	11/17/1978	217,000	Nov. 2	371,000	58.73
1980	8/11/1980	286,000			
1981	1/29/1981	160,000			
1982		241,000			
1983	9/22/1983	211,000			
1984	10/18/1983	199,000			
1985	8/14/1985	200,000			
1986	9/9/1986	263,000			
1987	8/22/1987	240,000			
1988	7/13/1988	138,000			

SOURCE:

* USGS Water Resources Investigation Report 93-4076 (Reference 20)

** USGS Water Supply Papers and U.S. Army Corps of Engineers (UFSAR Table 2.4-16)

NOTES:

⁺ Example: Water year for 1932 begins October 1, 1931, and ends September 30, 1932.

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TABLE 2.3-8
(UFSAR TABLE 2.4-18)

LOW-FLOW VALUES, CFS, FOR 1, 7, AND 30 DAYS FOR SELECTED RETURN PERIODS
FOR MISSISSIPPI RIVER AT VICKSBURG, MISSISSIPPI

Duration (Days)	Return Period, Years		
	5	10	100
1	142,000	125,000	93,000
7	147,000	129,000	95,000
30	161,000	141,000	100,000

NOTES:

1. Obtained from USGS statistical output for Vicksburg gaging station based on the period of record of 1933-1979. (Reference 2)

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TABLE 2.3-9
(FER TABLE 2.4.5)

MAXIMUM DISCHARGE OF STREAM DRAINING BASIN A AT STATION 2*

Date	Max. Discharge, cfs
Feb. 3, 1973	25
March 4, 1973	30
March 10, 1973	140
March 16, 1973	400
March 24, 1973	390
April 7, 1973	30
April 24, 1973	210
April 26, 1973	60
May 2, 1973	375
June 12, 1973	10

NOTES:

* For location of Station 2, see Figure 2.3-7.

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TABLE 2.3-10

GGNS SURFACE WATER DISCHARGE AND WATER QUALITY DATA

MONITORING PERIOD END DATE	OUTFALL NUMBER	WATER TEMP.		pH		FLOW (MGD)	
		DEG. F					
		MAX	AVG	MAX	MIN	MAX	AVG
12/31/01	001	91.2	77.0	7.42	7.14	11.70	6.28
11/30/01	001	90.8	86.7	8.04	6.92	10.70	8.39
10/31/01	001	94.1	82.9	7.19	7.06	13.50	9.19
9/30/01	001	96.3	88.1	7.42	7.14	24.66	14.71
8/31/01	001	96.4	87.1	8.42	7.12	22.30	13.43
7/31/01	001	97.9	90.8	7.35	7.05	20.20	15.88
6/30/01	001	95.0	88.5	7.41	7.08	19.80	12.96
5/31/01	001	94.3	82.1	8.17	7.18	17.90	9.71
4/30/01	001	97.7	74.0	7.69	7.41	16.00	7.52
3/31/01	001	91.9	82.4	7.79	7.27	19.20	15.58
2/28/01	001	95.9	83.1	7.84	7.04	18.10	13.83
1/31/01	001	92.5	80.0	8.17	6.87	18.80	10.82
12/31/00	001	93.9	79.8	7.60	6.98	19.90	15.74
11/30/00	001	99.1	86.4	8.49	7.08	25.10	17.01
10/31/00	001	103.1	91.7	8.43	7.16	29.52	16.31
9/30/00	001	105.1	94.4	7.89	7.06	30.10	17.75
8/31/00	001	105.8	99.0	7.76	7.14	27.91	15.86
7/31/00	001	106.0	98.8	8.79	7.39	22.51	12.36
6/30/00	001	103.1	96.7	7.44	7.17	28.81	13.76
5/31/00	001	102.9	94.5	8.31	7.06	23.48	13.47
4/30/00	001	98.8	89.2	8.36	7.83	25.78	13.29
3/31/00	001	97.9	88.9	8.51	8.25	24.71	11.00
2/29/00	001	97.7	86.5	8.54	8.36	24.76	10.81
1/31/00	001	97.2	82.8	8.39	7.67	25.08	9.67

NOTES:

1. Outfall 001 discharges into the Mississippi River at the discharge basin – Outfall location shown on Figure 2.3-12
2. MGD = millions of gallons per day

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TABLE 2.3-10 (Continued)

MONITORING PERIOD END DATE	OUTFALL NUMBER	pH		FLOW (MGD)		TOTAL RESIDUAL CHLORINE (PPM)		TOTAL SUSPENDED SOLIDS (PPM)		OIL AND GREASE (PPM)	
		MAX	MIN	MAX	AVG	MAX	AVG	MAX	AVG	MAX	AVG
12/31/01	007	8.44	8.42	0.2232	0.2232	0.37	0.25	2.00	1.00	BDL	
11/30/01	007	7.68	7.56	0.2232	0.1368	0.66	0.64	2.00	1.00	BDL	
10/31/01	007	8.11	7.32	0.2232	0.2232	0.58	0.53	1.00	0	BDL	
9/30/01	007	8.48	8.42	0.2232	0.2232	0.42	0.30	2.00	1.00	BDL	
8/31/01	007	8.53	7.34	0.2232	0.1368	0.53	0.27	BDL		BDL	
7/31/01	007	7.65	7.35	0.0504	0.0504	0.25	0.21	BDL		BDL	
6/30/01	007	8.53	8.08	0.0504	0.0504			4.00	2.00	BDL	
5/31/01	007	8.65	8.00	0.2232	0.1368	0.37	0.27	49.00	26.50	BDL	
4/30/01	007	8.28	8.26	0.0504	0.0504	0.32	0.27	15.00	7.50	1.0	0.95
3/31/01	007	8.32	8.27	0.2232	0.1368	0.45	0.39	BDL		0.1	0.95
2/28/01	007	8.48	8.11	0.0504	0.0504	0.56	0.33	BDL		1.5	0.8
1/31/01	007	8.56	8.38	0.2232	0.1368	0.30	0.15	8.00	4.00	BDL	
12/31/00	007	8.25	7.50	0.0504	0.0504	0.35	0.35	BDL		BDL	
11/30/00	007	8.44	7.27	0.0504	0.0504	0.13	0.12	BDL		1.6	0.8
10/31/00	007	8.94	8.76	0.0504	0.0504	0.28	0.14	BDL		BDL	
9/30/00	007	8.92	8.56	0.5472	0.2988			BDL		BDL	
8/31/00	007	8.62	7.78	1.2232	0.1368	0.17	0.16	BDL		BDL	
7/31/00	007	8.98	8.49	0.2232	0.1368	0.18	0	BDL		BDL	
6/30/00	007	8.47	8.28	0.2232	0.1368	0.36	0.28	BDL		BDL	
5/31/00	007	8.93	8.81	0.0504	0.0504	0.29	0.15	BDL		1.0	0.9
4/30/00	007	8.98	8.77	0.0504	0.0504	0.36	0.29	BDL		1.0	0.9
3/31/00	007	8.75	8.74	0.2232	0.1368	0.36	0.26	BDL		1.5	0.8
2/29/00	007	8.82	8.82	0.0504	0.0504	0.39	0.32	BDL		2.0	2.0
1/31/00	007	8.73	8.58	0.0504	0.0504	0.44	0.43	1.00	0.5	2.3	2.1

NOTES:

1. Outfall 007 discharges into sediment Basin B – Outfall location shown on Figure 2.3-12

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TABLE 2.3-10 (Continued)

MONITORING PERIOD END DATE	OUTFALL NUMBER	pH		FLOW (MGD)		TOTAL RESIDUAL CHLORINE (PPM)		TOTAL SUSPENDED SOLIDS (PPM)		BIOLOGICAL OXYGEN DEMAND (BOD)		FECAL COLIFORM, GENERAL	
		MAX	MIN	MAX	AVG	MAX	AVG	MAX	AVG	MAX	AVG	MAX	AVG
12/31/01	010	8.22	8.20	0.052	0.027	BDL		20.00	11.50	11.4	10.8	BDL	
11/30/01	010	7.81	7.79	0.057	0.035	BDL		6.00	2.67	39.0	24.4	BDL	
10/31/01	010	7.95	7.44	0.045	0.037	BDL		10.00	6.00	12.6	9.9	BDL	
9/30/01	010	8.15	8.10	0.050	0.041	BDL		3.00	2.50	2.4	2.4	BDL	
8/31/01	010	8.41	7.46	0.060	0.040	BDL		2.00	1.00	3.6	3.2	BDL	
7/31/01	010	7.36	7.29	0.055	0.031	BDL		BDL		3.6	0.0	BDL	
6/30/01	010	8.13	8.05	0.034	0.022	BDL		2.00	1.00	3.6	3.0	BDL	
5/31/01	010	8.23	7.80	0.050	0.029	BDL		5.00	6.00	5.3	4.0	10	3
4/30/01	010	8.08	7.48	0.055	0.051	BDL		10.00	6.00	4.8	4.4	24000	26
3/31/01	010	8.33	7.90	0.074	0.052	BDL		34.00	3.50	6.0	4.2	BDL	
2/28/01	010	8.60	8.08	0.051	0.033	BDL		2.00	2.00	9.0	8.9	10	3
1/31/01	010	8.09	8.08	0.046	0.028	BDL		17.00	11.50	8.7	7.4	BDL	
12/31/00	010	7.76	7.40	0.054	0.031	BDL		7.00	5.00	7.2	4.5	BDL	
11/30/00	010	7.70	7.40	0.059	0.044	BDL		6.00	3.50	3.0	1.5	BDL	
10/31/00	010	8.70	8.42	0.044	0.032	BDL		7.00	6.00	7.5	4.5	BDL	
9/30/00	010	8.54	8.53	0.040	0.024	BDL		6.00	4.50	13.5	9.5	BDL	
8/31/00	010	8.80	7.86	0.045	0.022	BDL		7.00	6.50	3.3	1.7	BDL	
7/31/00	010	8.89	8.36	0.059	0.025	BDL		8.00	7.00	3.9	2.9	BDL	
6/30/00	010	8.62	8.28	0.042	0.022	BDL		4.00	3.00	34.5	13.0	10300	59
5/31/00	010	8.90	8.50	0.053	0.017	BDL		1.00	1.00	12.0	6.6	BDL	
4/30/00	010	8.63	8.58	0.051	0.022	BDL		4.00	3.00	27.0	18.0	BDL	
3/31/00	010	8.64	8.37	0.041	0.029	BDL		7.00	6.00	13.5	11.0	BDL	
2/29/00	010	8.94	8.83	0.028	0.022	BDL		9.00	6.50	31.5	24.8	BDL	
1/31/00	010	8.90	8.39	0.038	0.023	BDL		2.00	1.00	27.0	15.9	320	18

NOTES:

1. Outfall 010 includes sanitary wastewater discharged into sediment Basin A – Outfall location shown on Figure 2.3-12

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TABLE 2.3-10 (Continued)

MONITORING PERIOD END DATE	OUTFALL NUMBER	FLOW (MGD)		pH		TOTAL SUSPENDED SOLIDS (PPM)	
		MAX	AVG	MAX	MIN	MAX	AVG
12/31/01	013	4.400	2.135	8.15	7.07	12.00	12.00
12/31/00	013	1.600	0.790	8.45	7.07	97.00	36.50
12/31/99	013	0.410	0.218	8.22	7.40	43.00	20.50

NOTES:

1. Outfall 013 includes effluent from sediment Basin A that enters Hamilton Lake – Outfall location shown on Figure 2.3-12

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TABLE 2.3-10 (Continued)

MONITORING PERIOD END DATE	OUTFALL NUMBER	FLOW (MGD)		pH		TOTAL SUSPENDED SOLIDS (PPM)	
		MAX	AVG	MAX	MIN	MAX	AVG
12/31/01	014	0.270	0.202	8.54	7.50	26.00	6.20
12/31/00	014	0.450	0.315	8.77	7.79	12.00	5.00
12/31/99	014	0.270	0.190	8.24	7.17	6.00	2.75

NOTES:

1. Outfall 014 includes effluent from sediment Basin B that enters Hamilton Lake – Outfall location shown on Figure 2.3-12

SOURCE:

U. S. EPA Envirofacts Database, 2002; State of Mississippi Water Pollution Control Permit No. MS0029521 issued September 19, 1997 (Reference 14)

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TABLE 2.3-11

GEOLOGIC FORMATIONS OF CLAIBORNE, COPIAH, HINDS, JEFFERSON, AND WARREN COUNTIES, MISSISSIPPI

Stratigraphic Unit	Thickness, Feet	Physical Character	Water-Bearing Properties
Alluvium (Holocene)	0-200	Fine to coarse grained sand, silt, clay, and gravel	Deposits in tributary streams yield up to 100 gpm, Mississippi River alluvium may yield up to 5000 gpm; Source for GGNS radial wells; wells in Warren County report yields of 75 to 1400 gpm
Loess (Pleistocene)	0-80	Tan to brown calcareous silt, clay, and gravel	Unimportant as an aquifer
Terrace Deposits (Pleistocene)	0-120	Fine to coarse grained sand, chert, and quartz gravel, numerous clay and silt lenses and layers	Domestic supplies of several gpm in uplands along Mississippi River and larger tributaries
Citronelle Formation (Pliocene-Pleistocene)	0-100	Sand, chert, and quartz gravels	Yields of several gpm from shallow wells in southeastern Jefferson County; important aquifer in Crystal Springs area, Copiah County; large wells report yields of 250 to 700 gpm; not present in Claiborne County; included in the Southern Hills Aquifer system sole source aquifer designation
Pascagoula Formation	0-400	Clay and sand, locally indurated, and gravel	Important aquifers in southwestern Mississippi (included in the Southern Hills Aquifer system sole source aquifer designation), a source for all types of wells, yields range from 100 to 700 gpm; Aquifer tests in wells in the Catahoula Formation in Claiborne County had yields ranging from 20 to 240 gpm; reported yields of 240 to 560 gpm
<u>Hattiesburg Formation</u> Catahoula Formation (Miocene)	0-900		
Vicksburg Group, Units Undifferentiated (Oligocene)	160	Clay, marl, limestone	Unimportant as an aquifer

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TABLE 2.3-11 (Continued)

Stratigraphic Unit	Thickness, Feet	Physical Character	Water-Bearing Properties
Forest Hill Formation (Oligocene)	80-220	Gray fine sands and carbonaceous clays	Source for many small diameter wells in southwestern Hinds and Warren Counties; few rural wells in northern Claiborne County; source for public supply and industrial wells in Copiah, Hinds, and Warren Counties
Yazoo Clay (Eocene)	400-500	Light bluish-gray and pale gray, calcareous, fossiliferous clay	Aquiclude
Moodys Branch Formation (Eocene)	10-45	Greenish-gray sand and marl	Unimportant as an aquifer
Cockfield Formation (Eocene)	100-385	Gray clays, sandstones, and siltstones	Source for many wells in Hinds and northern Warren County; wells in Warren County report yields from 80 to 700 gpm; Cockfield aquifers contain salt water south of the Big Black River
Cook Mountain Formation (Eocene)	100-400	Shale, sandy limestone, and chalk	Aquiclude
Sparta (or Kosciusko) Formation (Eocene)	300-1020	Gray clays and shales, siltstone, and sandstone	Important source for many wells in Jackson area, Hinds County with reported yields of 15 to 1260 gpm; supplies few small wells in Warren County
Wilcox Group, undifferentiated (Eocene)	1150-3310	Shale, siltstone, and sandstone	Importance limited to Jackson area, contains salt water elsewhere; one well reported to flow above ground surface

SOURCES:

GGNS UFSAR Table 2.4-19.

U. S. Geological Survey, "Summary of Aquifer Tests in Mississippi, June 1942 through May 3, 1988," Water Resources Investigation Report No. 90-4155, 1991; U. S. Geological Survey, Jackson, Mississippi, 2002 (References 2, 42, and 33).

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TABLE 2.3-12

USGS GROUND WATER LEVELS – VICKSBURG
WELL COMPLETED IN THE MISSISSIPPI RIVER ALLUVIAL AQUIFER
STATION NO. 322310090530202

Date Level Measured	Level in Feet Below Land Surface
2/1/65	25.18
3/15/65	13.31
10/1/65	22
10/18/65	22.5
12/13/65	22.08
6/23/66	17.59
11/22/66	28.03
12/20/66	26.97
5/12/67	17.75
7/31/67	21.4
5/16/68	12.75
2/7/69	10.98
5/1/69	10.34
11/13/69	36.8
7/14/70	37.53
10/28/70	35.65
2/25/71	32.2
10/6/71	39.13
4/4/72	26.11
10/19/72	36.01
8/8/73	28.26
10/10/73	35.13
5/24/74	24.44
5/30/74	21.22
7/18/74	27.28
8/27/74	37.74
10/14/74	39.74
2/14/75	20.47
5/28/75	10.25
8/28/75	35.8
10/10/75	31.07
1/9/76	27.14
4/19/76	22.61
8/10/76	35.59
10/7/76	38.14
1/24/77	38.77
5/6/77	35.44
11/11/77	39.36

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TABLE 2.3-12 (Continued)

Date Level Measured	Level in Feet Below Land Surface
5/11/78	23.38
7/19/78	34.8
10/11/78	39.38
2/15/79	35.7
5/31/79	16.61
8/13/79	25.41
11/14/79	36.43
2/11/80	31.19
5/8/80	29.06
8/26/80	38.47
9/11/80	42.2
12/11/80	38.81
2/12/81	53.98
3/6/81	47.83
5/21/81	42.41
7/24/81	33.34
8/21/81	36.14
3/23/82	44.9
7/1/82	29.11
8/6/82	33.2
9/13/82	38.26
9/20/82	35.51
11/8/82	35.91
12/8/82	31.25
1/20/83	14
1/31/83	22.19
3/3/83	26.41
3/15/83	22.66
4/18/83	18.13
6/23/83	19.6
7/18/83	26.96
11/9/83	42.38
1/17/84	35.32
3/26/84	28
6/19/84	24.63
10/12/84	41.88
10/14/84	33.88
3/11/85	25.36
6/17/85	30.05
9/10/85	41.03
11/13/85	38.2
1/7/86	34.25

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TABLE 2.3-12 (Continued)

Date Level Measured	Level in Feet Below Land Surface
2/4/86	37.02
3/24/86	36.12
7/1/86	34.45
10/10/86	41.93
12/30/86	30.88
3/23/87	27.74
6/17/87	35.2
10/6/87	38.13
12/29/87	39.5
3/21/88	33.21
6/6/88	38.72
10/3/88	48.18
1/3/89	41.45
3/2/89	33.97
3/27/89	23.34
4/20/89	26.01
5/11/89	31.58
8/4/89	26.54
10/23/89	37.52
1/30/90	35.44
3/26/90	23.12
5/3/90	20.28
6/5/90	18.85
7/19/90	25.33
10/1/90	37.83
3/7/91	14.44
5/28/91	23.87
7/22/91	35.59
8/29/91	39.23
10/1/91	42.16
12/2/91	40.01
1/21/92	29.87
3/30/92	29.07
6/1/92	31.48
10/5/92	34.92
12/1/92	32.57
2/9/93	25.06
6/15/93	21.15
7/27/94	27.15

SOURCE: USGS, URL <http://waterdata.usgs.gov/ms/nwis/gwlevels> (Reference 44)

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TABLE 2.3-13

USGS GROUND WATER LEVELS - PORT GIBSON
WELL COMPLETED IN THE LOWER CATAHOULA FORMATION
STATION NO. 315718090291501

Date Level Measured	Level in Feet Below Land Surface
1/1/1910	55
11/8/1931	93.3
4/20/1961	89.09
5/25/1961	94.81
6/10/1961	92.39
7/10/1961	91.7
8/5/1961	86.92
9/10/1961	83.6
10/20/1961	89.19
11/20/1961	91.29
12/20/1961	88.88
1/15/1962	96.7
2/28/1962	89.89
3/10/1962	88.7
4/15/1962	87.6
5/25/1962	94.97
6/5/1962	90.38
7/25/1962	94.5
8/15/1962	91.5
9/30/1962	96.4
10/20/1962	97.4
11/15/1962	92.91
12/15/1962	99.1
1/25/1963	97.8
2/5/1963	94
3/15/1963	92.68
4/30/1963	96.08
5/25/1963	95.91
6/20/1963	92.25
7/25/1963	90.39
8/10/1963	97.68
9/10/1963	100.38
1/28/1964	90.87
5/20/1964	90.57
7/20/1964	91.47
10/19/1964	89.05
1/19/1965	86.42
4/8/1965	85.57

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TABLE 2.3-13 (Continued)

Date Level Measured	Level in Feet Below Land Surface
7/12/1965	85.7
9/28/1965	87.34
1/11/1966	85.24
4/27/1966	91.2
7/14/1966	92.85
10/17/1966	90.6
1/10/1967	85.8
4/11/1967	90.1
7/31/1967	95
11/8/1967	93.3
1/18/1968	85.9
5/1/1968	90.52
8/21/1968	86.8
10/31/1968	94.65
1/6/1969	93.2
6/18/1969	87.5
10/7/1969	89.15
2/3/1970	85.7
3/16/1970	83.45
7/6/1970	84.81
10/26/1970	84.11
1/11/1971	85.01
4/7/1971	85.42
7/20/1971	84.98
10/14/1971	85.3
1/14/1972	84.13
4/13/1972	85.39
7/10/1972	89.24
10/19/1972	92.91
1/19/1973	90.89
4/13/1973	85.55
10/30/1973	92.88
1/7/1974	92.9
5/10/1974	94.33
7/22/1974	99.59
11/6/1974	95.85
2/18/1975	93.8
6/4/1975	91.77
10/30/1975	94.4
1/19/1976	105.94
3/22/1976	93.66

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TABLE 2.3-13 (Continued)

Date Level Measured	Level in Feet Below Land Surface
8/16/1976	121.7
2/2/1977	114.6
3/17/1977	120.12
4/5/1977	118.4
10/7/1977	121.27
6/6/1978	121.9
10/12/1978	125.52
3/30/1979	122.95
5/14/1980	122.43
7/8/1980	123.37
4/9/1981	123.64
10/5/1981	125.35
4/12/1983	116.04
10/20/1983	111.48
4/17/1984	119.27
7/9/1984	117.08
10/17/1984	116.1
4/10/1985	118
11/7/1985	121.34
3/19/1986	119.99
10/9/1986	115.54
4/23/1987	117.4
10/6/1987	116.38
5/4/1988	118.04
10/11/1988	123.9
4/13/1989	112.1
10/10/1989	108.99
5/1/1990	108.25
4/23/1991	95.46
10/15/1991	96.65
3/30/1992	96.17
10/26/1992	109.63
3/18/1993	108.21
10/19/1993	111.78
4/12/1994	110.4
12/12/1994	110.43
9/26/1995	109.89
5/30/1996	110.4
10/15/1996	113.39

SOURCE: USGS, URL <http://waterdata.usgs.gov/ms/nwis/gwlevels> (Reference 44)

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TABLE 2.3-14
(FER TABLE 2.4.10)

PERMEABILITY TEST RESULTS

<u>Test Well #1</u>				
Location	Depth, ft.	Formation	Drawdown Permeability, cm/sec	Recovery Permeability, cm/sec
TW#1	153	Terrace	-	2.4×10^{-1}
OW29A	130	Terrace	2.6×10^{-1}	2.8×10^{-1}
OW29B	153	Terrace	2.8×10^{-1}	2.6×10^{-1}
OW69A	100	Terrace	2.1×10^{-1}	-
OW69B	95	Terrace	1.4×10^{-1}	2.1×10^{-1}
OW73	110	Terrace	1.4×10^{-1}	-
OW9	100	Terrace	2.4×10^{-1}	-

Variable Head Permeability Tests

Location	Depth, ft.	Formation	Drawdown Permeability, cm/sec
P34B	40	Terrace	4.0×10^{-3}
P34C	55	Terrace	8.0×10^{-2}
P 4	275	Catahoula	6.3×10^{-9}
TW-3	121	Terrace	2.6×10^{-4}

Laboratory Consolidation Test

Location	Depth, ft.	Formation	Unified Classification	Permeability, cm/sec
B-110	114-116	Catahoula	CL	4.3×10^{-8}
B-110	137-139	Catahoula	CL	2.4×10^{-8}
B-120	114-116	Catahoula	CL	5.8×10^{-8}
B-120	134-136	Catahoula	CL	2.2×10^{-8}
B-120	144-146	Catahoula	SC	2.9×10^{-8}
B-4	19-20	Alluvium	CH	7.8×10^{-8}
B-4	49-51	Alluvium	ML	5.9×10^{-8}

NOTES:

1. Well, Piezometer, and Boring Locations are shown in Figure 2.3-20.

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TABLE 2.3-15
(FER TABLE 2.4.11)

SITE HYDROGEOLOGIC PARAMETERS

	Terrace Deposits	Clay-Silt Alluvium	Sand-Gravel Alluvium
Total Porosity	0.40	0.48	0.35
Effective Porosity	0.25	0.25	0.25
Bulk Density (gm/ml)	2.07	1.87	1.87
Storage Coefficient	0.15	0.10	0.15
Longitudinal Dispersion Coefficient (ft ² /yr.)	1.87	0.018	1.32
Distribution Coefficient (ml/gm)			
Sr ⁹⁰	8.79	7.24	7.24
Cs ¹³⁷	314.85	259.29	259.29

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TABLE 2.3-16
(UFSAR TABLE 2.4-26a)

HYDRAULIC CONDUCTIVITIES OF TERRACE DEPOSITS

Well I.D.	Hydraulic Conductivity (ft/day)	Saturated Thickness of Geologic Unit (ft.)	Transmissivity (ft ² /day)
DW-8A	19	18	340
MW-8	4.9	21	100
MW-9	3.2	23	74
MW-10	91	10	910
MW-13	0.15	43	6.5
MW-14	0.24	48	12
MW-15	3	36	110
MW-16	37	59	2,200
MW-17	29	21	610
MW-18	0.2	28	5.6
MW-19	23	58	1,300
MW-20	300	49	15,000
MW-21	150	54	8,100
MW-22	180	31	5,600
MW-23	7.1	50	360
MW-24	0.83	21	17
MW-25	23	14	320
MW-26	13	16	210
OW-05	0.46	69	32
OW-202	0.14	73	10
OW-209A	0.36	42	15
OW-29A	0.96	100	96
Geometric Mean	5		180
			(Round to 200)

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TABLE 2.3-17
(FER TABLE 2.4-13)

PIEZOMETER INVENTORY

Piezometer Number	Hole Depth, ft	Elevation Top of Casing, ft msl	Perforated Interval, ft msl	Casing Diameter, in	Formation	Water Level Elevation, ft msl									
						Highest Water Level					Lowest Water Level				
						1972	1973	1974	1975	1976	1972	1973	1974	1975	1976
P4	275	79.1	-188 to -213	1	C	62	89	83	78	64	55	57	62	61	61
P5	142	156.2	18 to 15	3	C	77	82	82	83	81	75	72	79	79	79
P11	51	82.53	34 to 31	3	T	75	88	82			69	72	77		
P17	105	153.26	57 to 47	3	T	71	71	71			70	70	71		
P34A	29	95.76	71 to 66	1	A	77	90	84			70	74	79		
P34B	40	95.78	55 to 53	3	T	75	84	82			70	73	80		
P34C	55	96.19	39 to 36	3	T	75	84	82			70	70	78		
P34D	110	95.10	8 to -16	1	C	73	86	79			66	71	75		
P37	42	96.82	58 to 53	3	A	77	84	84			72	74	79		
P57	173	93.48	-81	3	C	68	81	74			61	67	68		
P95	195	160.59	-31 to -37	3	C	70	81	76			66	67	71		
P111	249	192.40	-16 to -58	3	C	71	80	78			69	71	75		
P117A	178	144.68	-30 to -35	3	C	70	110	113			69	70	110		
P117B	118	143.83	33 to 24	3	C	75	84	82			73	75	79		
P201	191	193.36	1 to 0	3	T	82	83	83			71	76	79		
P209	150	195.8													

NOTES:

1. A – Alluvium, C – Catahoula, T – Terrace Deposits
2. Piezometer locations are shown in Figure 2.3-20.

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TABLE 2.3-18
(FER 2.4.14)

OBSERVATION WELL INVENTORY

Well Number	Depth, (feet)	Elevation Top of Casing, (feet msl)	Perforated Interval, (feet msl)	Casing Diameter, (inch)	Formation	Water Level Elevation, (feet msl)									
						Highest Water Level					Lowest Water Level				
						1972	1973	1974	1975	1976	1972	1973	1974	1975	1976
OW4	80	77.86	7 to -3	3	A	75	89	79	75		70	71	75	75	
OW5	110	157.08	54 to 44	3	T	77	83	82	83	81	72	73	78	80	79
OW6	116	207.24	90	4	T	105	95				92	94			
OW6A	115	208.22	91	1	T	112	112				108	111			
OW6B	110	207.46	107 to 97	3	T	111	106	105			72	104	105		
OW6C	114	207.13	101 to 91	3	T		98	98				98	98		
OW7	100	158.49	56	1 ¼	T	76	84	83	84	80	102	75	80	76	79
OW8	93	81.77	-11	1 ¼	A	72	88	77			66	70	74		
OW9	100	157.04	65 to 55	3	T	75	84	83			70	72	77		
OW10	98	156.98	78 to 58	1 ¼	C	87	84	85	86	84	75	77	81	82	83
OW12	100	156.56	63 to 53	3	T	75	84	83			72	73	77		
OW29A	130	162.84	29	3	T	73	84	84	82	76	70	73	74	74	71
OW29B	153	160.64	6	1	T	77	84	87			69	73	77		
OW35	57	103.09	53 to 43	1 ¼	A	80	83	81			66	72	77		
OW43	80	74.12	4 to -6	1	A	73	89	81	74		50	52	50	60	
OW69A	100	85.22	-5 to -15	1	A	75	89	82	81	77	69	72	73	74	74
OW69B	95	83.36	-2 to -12	1	A	75	89	83			69	72	77		
OW73	110	121.68	9	1	T	73	84	81			70	73	77		
OW94	135	174.88	48 to 38	3	T	74	84	84			72	74	79		
OW95	115	160.55	53 to 43	3	T	75	85	84			72	75	78		

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Table 2.3-18 (Continued)

Well Number	Depth, (feet)	Elevation Top of Casing, (feet msl)	Perforated Interval, (feet msl)	Casing Diameter, (inch)	Formation	Water Level Elevation, (feet msl)									
						Highest Water Level					Lowest Water Level				
						1972	1973	1974	1975	1976	1972	1973	1974	1975	1976
OW107	65	164.21	102 to 97	1	T										
OW108	60	156.08	106 to 96	3	T										
OW112	105	194.05	97 to 87	3	T	95	95	95			94	94	94		
OW115A	72	152.38	89 to 79	1	T		97	96				95	95		
OW115B	73	153.45	88 to 78	3	T		97	97				95	95		
OW116	100	196.47	105 to 95	3	T	96	96	96			94	95	95		
OW117	50	144.52	103 to 93	3	T										
OW118	39	122.91	92 to 82	3	T	106	107	107			96	101	103		
OW118B	39	124.22	93 to 83	3	T		106	106				101	102		
OW121	125	157.29	30	3	T	76	85	81			70	71	76		
OW201	131	193.05	70 to 60	3	T	130	120	97	93		107	98	90	91	
OW202	157	195.52	36	3	T	76	85	82	95	80	73	75	78	79	79
OW208	117	199.71	95 to 80	3	T										
OW209A	105	195.63	88	3	T				90	89				88	88
OW209B	150	198.15	56 to 46	3	C	84	82	80			78	76	76		
TW#1	153	159.25	50 to 10	8	T	71	84	83			67	70	75		

NOTES:

1. A – Alluvium, C – Catahoula, T – Terrace Deposits
2. Piezometer locations are shown in Figure 2.3-20.

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TABLE 2.3-19
(UFSAR TABLE 2.4-29)

GROUNDWATER LEVELS MONITORING WELLS

Well Number	Well Depth (ft.)	Elevation Top of Casing (ft. msl.)	Perforated Interval (ft. msl.)	Casing Diameter (in.)	Formation	Aquifer
P4	275	79.1	-188 to -213	1	Catahoula	Regional
OW4A	80	78.3	7 to -3	3	Alluvium	Regional
OW29A	130	162.7	29	3	Terrace	Regional
OW202	157	193.8	36	3	Terrace	Regional
OW7	100	158.5	56	1.25	Terrace	Regional
OW5	110	157.0	54 to 44	3	Terrace	Regional
OW10	98	158.5	78 to 58	1.25	Catahoula	Regional
OW4	80	77.7	7 to -3	3	Alluvium	Regional
OW69A	100	82.5	-5 to -15	1	Terrace	Regional
OW209A	105	198.2	88	3	Terrace	Regional
P5	142	156.2	--	--	--	Regional
P209	150	195.8	--	--	--	Regional
MW-1	44.5	137.0	91.2 to 93.2	6	Fill	Perched
MW-2	43.2	133.7	88.5 to 90.5	6	Fill	Perched
MW-3	42.9	135.5	90.6 to 92.6	6	Fill	Perched
MW-4	39.6	133.6	92.0 to 94.0	6	Fill	Perched
MW-5	37.8	134.2	91.9 to 93.9	6	Fill	Perched
MW-6	37.9	134.5	94.6 to 96.6	6	Fill	Perched
MW-7	56	140.0		6	Fill	Perched
DW-1	55.2	136.5	81 to 86	10	Fill	Perched
DW-2	48.3	138.8	81 to 86	10	Fill	Perched
DW-3	48.4	134.8	81 to 86	10	Fill	Perched
DW-4	42.8	132.8	81 to 86	10	Fill	Perched
DW-5	55.4	134.4	82.9 to 87.9	10	Fill	Perched
DW-6	59.7	132.7	84.3 to 89.3	10	Fill	Perched
DW-7	46.3	134.3	90.0 to 95.0	10	Fill	Perched
DW-8	40.3	134.3	101.2 to 106.2	10	Fill	Perched

NOTES:

1. For well locations, see Figs. 2.3-20 and 2.3-25.

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TABLE 2.3-20

GROUNDWATER LEVEL DATA FOR ONSITE WELLS, 1996-2001

Well Number	Top of Casing Elevation	Well Depth	Date of Measurement	Depth to Water	Water Level (feet above MSL)
MW-12	134.38	24.79	1/15/96		
			to		
			1/20/97	Dry	
			2/18/97	23.6	110.78
			3/20/97	22.6	111.78
			4/22/97	23.9	110.48
			5/22/97	24.1	110.28
			6/26/97	23.2	111.18
			7/19/97	23.9	110.48
			8/22/97		
			to		
			12/17/97	Dry	
			1/15/98	23.72	110.66
			2/19/98	21.74	112.64
			3/20/98	21.35	113.03
			4/20/98	22.88	111.5
			5/19/98	23.84	110.54
			6/18/98	24.05	110.33
			7/24/98		
			to		
			12/9/98	Dry	
			1/14/99	24.04	110.34
			2/11/99	20	114.38
			3/18/99	20.3	114.08
			4/15/99	20.51	113.87
			5/13/99	22.45	111.93
			6/17/99	24	110.38
			7/15/99	24.07	110.31
			8/12/99		
			to		
			12/19/00	Dry	
			1/29/01		
			to		
			12/28/01	no measurements, construction in the area	
Max				24.1	114.38
Min				20	110.28

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TABLE 2.3-20 (Continued)

Well Number	Top of Casing Elevation	Well Depth	Date of Measurement	Depth to Water	Water Level (feet above MSL)
MW-13	133.65	67.93	1/15/96	24.7	108.95
			2/13/96	23.8	109.85
			3/18/96	23.1	110.55
			4/18/96	22.8	110.85
			5/21/96	22.7	110.95
			6/19/96	22.5	111.15
			7/18/96	22.8	110.85
			8/20/96	23.7	109.95
			9/18/96	24.6	109.05
			10/18/96	25.5	108.15
			11/20/96	25.1	108.55
			12/18/96	24.5	109.15
			1/20/97	23.7	109.95
			2/18/97	22.87	110.78
			3/20/97	21.87	111.78
			4/22/97	23.17	110.48
			5/22/97	23.37	110.28
			6/26/97	22.47	111.18
			7/19/97	23.17	110.48
			8/22/97		
			to		
			12/17/97	Dry	
			1/15/98	22.99	110.66
			2/19/98	21.01	112.64
			3/20/98	20.62	113.03
			4/20/98	22.15	111.5
			5/19/98	23.11	110.54
			6/18/98	23.32	110.33
			7/24/98		
			to		
			12/9/98	Dry	
			1/14/99	23.31	110.34
			2/11/99	19.27	114.38
			3/18/99	19.57	114.08
			4/15/99	19.78	113.87
			5/13/99	21.72	111.93
			6/17/99	23.27	110.38
			7/15/99	23.34	110.31
			8/12/99		
			to		
			12/19/00	Dry	

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TABLE 2.3-20 (Continued)

Well Number	Top of Casing Elevation	Well Depth	Date of Measurement	Depth to Water	Water Level (feet above MSL)
MW-13 (Cont.)			1/29/01 to 12/28/01	no measurements, construction in the area	
Max				25.5	114.38
Min				19.27	108.15
DW-7	134.3	42.52	12/19/00	32.31	101.99
			1/29/01	31.75	102.55
			2/24/01	31.45	102.85
			3/7/01	31.05	103.25
			4/3/01	30.6	103.7
			4/27/01	30.54	103.76
			5/24/01	30.72	103.58
			6/22/01	30.85	103.45
			7/26/01	31.06	103.24
			8/27/01	31.25	103.05
			9/25/01	31.04	103.26
			10/30/01	31.26	103.04
			11/26/01	31.49	102.81
			12/28/01	31.06	103.24
Max				32.31	103.76
Min				30.54	101.99
DW-8	134.3	40.6	1/15/96	29.5	104.8
			2/13/96	28.6	105.7
			3/18/96	29	105.3
			4/18/96	28.8	105.5
			5/21/96	28.6	105.7
			6/19/96	28.1	106.2
			7/18/96	27.5	106.8
			8/20/96	28	106.3
			9/18/96	29	105.3
			10/18/96	29.5	104.8
			11/20/96	29.8	104.5
			12/18/96	29.9	104.4
			1/20/97	29.5	104.8
			2/18/97	28.7	105.6
			3/20/97	27.6	106.7

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TABLE 2.3-20 (Continued)

Well Number	Top of Casing Elevation	Well Depth	Date of Measurement	Depth to Water	Water Level (feet above MSL)
DW-8 (Cont.)			4/22/97	27.5	106.8
			5/22/97	27.2	107.1
			6/26/97	26.4	107.9
			7/19/97	26.8	107.5
			8/22/97	27.75	106.55
			9/15/97	28.1	106.2
			10/17/97	28.8	105.5
			11/20/97	29	105.3
			12/17/97	29.1	105.2
			1/15/98	27.85	106.45
			2/19/98	26.4	107.9
			3/20/98	25.98	108.32
			4/20/98	26.2	108.1
			5/19/98	26.67	107.63
			6/18/98	27.16	107.14
			7/24/98	27.98	106.32
			8/24/98	28.47	105.83
			9/17/98	28.84	105.46
			10/16/98	29.16	105.14
			11/11/98	29.42	104.88
			12/9/98	29.05	105.25
			1/14/99	27.74	106.56
			2/11/99	26.17	108.13
			3/18/99	26.26	108.04
			4/15/99	25.89	108.41
			5/13/99	26.34	107.96
			6/17/99	27.09	107.21
			7/15/99	26.81	107.49
			8/12/99	27.56	106.74
			9/8/99	28.36	105.94
			10/12/99	29.18	105.12
			11/9/99	29.64	104.66
			12/14/99	29.96	104.34
			1/12/00	30.03	104.27
			2/10/00	30.16	104.14
			3/31/00	30.45	103.85
			5/1/00	29.41	104.89
			6/8/00	29.8	104.5
			7/12/00	29.88	104.42
			7/27/00	30.08	104.22
			8/31/00	30.49	103.81

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TABLE 2.3-20 (Continued)

Well Number	Top of Casing Elevation	Well Depth	Date of Measurement	Depth to Water	Water Level (feet above MSL)
DW-8 (Cont.)			9/5/00	30.49	103.81
			9/28/00	30.8	103.5
			10/31/00	Dry	
			11/20/00	Dry	
			12/19/00	30.58	103.72
			1/29/01	29.82	104.48
			2/24/01	29.52	104.78
			3/7/01	29.23	105.07
			4/3/01	28.45	105.85
			4/27/01	28.82	105.48
			5/24/01	29.2	105.1
			6/22/01	29.35	104.95
			7/26/01	29.73	104.57
			8/27/01	29.88	104.42
			9/25/01	29.58	104.72
			10/30/01	29.88	104.42
			11/26/01	30.24	104.06
			12/28/01	29.45	104.85
Max				30.8	108.41
Min				25.89	103.5

SOURCE:

Entergy Operations, Inc., "GGNS Rainfall and Ground Water Level Data," Annual Reports for 1996 – 2001 (Reference 45)

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TABLE 2.3-21a

1995 WATER USE TOTALS, MISSISSIPPI COUNTIES
SURROUNDING GRAND GULF SITE

County Name	Groundwater Withdrawals	Surface Water Withdrawals	Total Withdrawals	Consumptive Use
Claiborne	33.9	0.47	34.37	20.18
Copiah	4.32	0.46	4.78	1.33
Hinds	14.21	34.13	48.34	10.45
Jefferson	1.42	0.08	1.5	0.42
Warren	13.62	38.89	302.87	177.11

NOTES:

1. Water quantities expressed in million gallons per day (mgd).

SOURCE: Reference 36

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TABLE 2.3-21b

1995 IRRIGATION WATER USE, MISSISSIPPI COUNTIES
SURROUNDING GRAND GULF SITE

County Name	Groundwater Withdrawals	Surface Water Withdrawals	Total Withdrawals	Consumptive Use
Claiborne	0.12	0.35	0.47	0.4
Copiah	0	0.01	0.01	0.01
Hinds	0	0	0	0
Jefferson	0	0	0	0
Warren	0.07	0.2	0.27	0.23

NOTES:

1. Water quantities expressed in million gallons per day (mgd).

SOURCE: Reference 36

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TABLE 2.3-21c

1995 LIVESTOCK WATER USE, MISSISSIPPI COUNTIES
SURROUNDING GRAND GULF SITE

County Name	Groundwater Withdrawals	Surface Water Withdrawals	Total Withdrawals	Consumptive Use
Claiborne	0.08	0.12	0.2	0.2
Copiah	0.14	0.23	0.37	0.36
Hinds	0.2	0.48	0.68	0.64
Jefferson	0.04	0.08	0.12	0.11
Warren	0.26	0.1	0.36	0.29

NOTES:

1. Water quantities expressed in million gallons per day (mgd).

SOURCE: Reference 36

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TABLE 2.3-21d

1995 MINING WATER USE, MISSISSIPPI COUNTIES
SURROUNDING GRAND GULF SITE

County Name	Groundwater Withdrawals	Surface Water Withdrawals	Total Withdrawals	Consumptive Use
Claiborne	0	0	0	0
Copiah	0.41	0.22	0.63	0.15
Hinds	0.02	0	0.02	0
Jefferson	0	0	0	0
Warren	0	0	0	0

NOTES:

1. Water quantities expressed in million gallons per day (mgd).

SOURCE: Reference 36

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TABLE 2.3-21e

1995 THERMOELECTRIC POWER WATER USE – ALL FUEL TYPES
MISSISSIPPI COUNTIES SURROUNDING GRAND GULF SITE

County Name	Groundwater Withdrawals	Surface Water Withdrawals	Total Withdrawals	Consumptive Use
Claiborne	32.05	0	32.05	19.23
Copiah	0	0	0	0
Hinds	0.86	0.39	1.25	0.39
Jefferson	0	0	0	0
Warren	0	49	49	0.25

NOTES:

1. Water quantities expressed in million gallons per day (mgd).

SOURCE: Reference 36

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TABLE 2.3-21f

1995 INDUSTRIAL WATER USE, MISSISSIPPI COUNTIES
SURROUNDING GRAND GULF SITE

County Name	Groundwater Withdrawals	Surface Water Withdrawals	Total Withdrawals	Consumptive Use
Claiborne	0	0	0	0
Copiah	0.1	0	0.1	0.02
Hinds	0.77	0.09	0.86	0.15
Jefferson	0	0	0	0
Warren	2.23	18.9	21.13	3.59

NOTES:

1. Water quantities expressed in million gallons per day (mgd).

SOURCE: Reference 36

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TABLE 2.3-21g

1995 DOMESTIC WATER USE, MISSISSIPPI COUNTIES
SURROUNDING GRAND GULF SITE

County Name	Groundwater Withdrawals	Surface Water Withdrawals	Total Withdrawals	Consumptive Use
Claiborne	0.23	0	0.23	0.3
Copiah	0.28	0	0.28	0.72
Hinds	2.03	0	2.03	8.94
Jefferson	0.29	0	0.29	0.28
Warren	0.57	0	0.57	2.21

NOTES:

1. Water quantities expressed in million gallons per day (mgd).

SOURCE: Reference 36

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TABLE 2.3-21h

1995 COMMERICAL WATER USE, MISSISSIPPI COUNTIES
SURROUNDING GRAND GULF SITE

County Name	Groundwater Withdrawals	Total Withdrawals	Consumptive Use
Claiborne	0.17	0.17	0.05
Copiah	0.05	0.05	0.07
Hinds	0.93	0.93	0.33
Jefferson	0	0	0.03
Warren	0	0	0.2

NOTES:

1. Water quantities expressed in million gallons per day (mgd).

SOURCE: Reference 36

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TABLE 2.3-21i

1995 PUBLIC SUPPLY, MISSISSIPPI COUNTIES
SURROUNDING GRAND GULF SITE

County Name	Groundwater Withdrawals	Surface Water Withdrawals	Total Withdrawals
Claiborne	1.25	0	1.25
Copiah	3.34	0	3.34
Hinds	9.4	33.17	42.57
Jefferson	1.09	0	1.09
Warren	10.49	0	10.49

NOTES:

1. Water quantities expressed in million gallons per day (mgd).

SOURCE: Reference 36

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TABLE 2.3-22
SURFACE WATER INTAKES ON THE MISSISSIPPI RIVER, MISSISSIPPI

Company Name	County	Location		Approx River Mile	Upstream or Downstream	Maximum Rate, gpm	Use
		Latitude	Longitude				
Southeast Wood Fiber	Claiborne	31°59'38"	91°04'55"	404.8	Downstream	600	Industrial
Mississippi Power and Light, Baxter Wilson	Warren	32°17'09"	90°55'49"	433	Upstream	445,200	Industrial
Ameristar Casino	Warren	32°18'54"	90°54'03"	436	Upstream	400	Commercial
Entergy Mississippi, Gerald Andrus Plant	Washington	33°21'34"	91°07'07"	537	Upstream	206,000	Industrial
River View Land Co.	Coahoma	34°16'15"	90°47'21"	635	Upstream	9,000	Recreation
Gist Farms	Coahoma	34°21'34"	90°41'52"	648	Upstream	1,500	Irrigation

SOURCE:

Mississippi Dept. of Environmental Quality, Office of Land and Water Resources, 2002 (Reference 25)

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TABLE 2.3-23

SURFACE WATER INTAKES ON THE MISSISSIPPI RIVER, PUBLIC WATER SUPPLY SYSTEMS, LOUISIANA

Company Name	Parish	Latitude	Longitude	Upstream or Downstream
Allied Signal (now Honeywell)	Ascension	30°12'55"	91°03'19"	Downstream
Shell Chemical	Ascension	30°10'39"	91°00'25"	Downstream
Ormet Corporation	Ascension	30°07'53"	90°55'13"	Downstream
Dow Chemical	Iberville	30°18'43"	90°13'33"	Downstream
East Jefferson	Jefferson	29°57'11"	90°09'46"	Downstream
Gretna Water Works	Jefferson	29°55'25"	90°03'40"	Downstream
West Jefferson (two intakes)	Jefferson	29°54'26"	90°05'54"	Downstream
		29°54'25"	90°05'57"	
Westwego Waterworks	Jefferson	29°54'54"	90°08'23"	Downstream
New Orleans – Algiers (two intakes)	Orleans	29°56'27"	90°03'17"	Downstream
		29°56'34"	90°03'19"	
New Orleans – Carrollton Waterworks (two intakes)	Orleans	29°57'03"	90°08'16"	Downstream
		29°57'17"	90°08'23"	
Belle Chase Water District	Plaquemines	29°51'13"	89°58'54"	Downstream
Dalcour Waterworks	Plaquemines	29°51'45"	89°55'24"	Downstream
Point a la Hache Water System	Plaquemines	29°35'05"	89°48'25"	Downstream

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TABLE 2.3-23 (Continued)

Company Name	Parish	Latitude	Longitude	Upstream or Downstream
Port Sulphur (two intakes)	Plaquemines	29°34'24"	89°48'10"	Downstream
		29°21'26"	89°26'16"	
St. Bernard Waterworks	St. Bernard	29°55'30"	89°57'35"	Downstream
Domino Sugar	St. Bernard	29°56'39"	90°00'10"	Downstream
St. Charles WD No. 1	St. Charles	29°59'07"	90°23'52"	Downstream
St. Charles WD No. 2	St. Charles	29°56'05"	90°21'35"	Downstream
Star/Motiva Enterprises Dock 1	St. James	30°06'33"	90°54'41"	Downstream
Gramercy Waterworks	St. James	30°02'32"	90°41'06"	Downstream
Lutcher Waterworks	St. James	30°02'13"	90°41'34"	Downstream
St. James WD No. 1 - Convent	St. James	30°00'16"	90°47'48"	Downstream
St. James WD No. 1 - Vacherie	St. James	30°00'40"	90°45'48"	Downstream
Kaiser Aluminum	St. James	30°03'07"	90°39'54"	Downstream
Star/Motiva Enterprises Dock 2	St. James	30°06'44"	90°54'44"	Downstream
St. John WD No. 1 - Edgard	St. John	30°02'50"	90°34'44"	Downstream
St. John WD No. 1 – La Place	St. John	30°03'15"	90°34'49"	Downstream
E.I. Dupont	St. John	30°03'00"	90°31'18"	Downstream
Marathon/Ashland	St. John	30°03'00"	90°35'40"	Downstream

SOURCES: Louisiana Dept. of Environmental Quality, Louisiana Dept. of Health and Hospitals, 2002

GGNS UFSAR (Reference 2 and Reference 27)

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TABLE 2.3-24

PUBLIC SUPPLY AND INDUSTRIAL WELLS
CLAIBORNE, COPIAH, HINDS, JEFFERSON, AND WARREN COUNTIES

Local USGS Grid No.	LANDNET Location	County	Depth Of Well (ft)	Water Level – Last (ft)	Water Level Date - Last	Aquifer	Discharge (gpm)
E006	S02T12NR01E (on-site)	Claiborne	118	--	--	MS River Alluvial	5000
F003	--SWS18T12NR02E	Claiborne	206	54	2/1/55	Catahoula Formation	**
F053	--NWS12T12NR02E	Claiborne	152	92	9/1/76	Catahoula Formation	**
F064	S06T12NR02E	Claiborne	150	90	12/14/95	Catahoula Formation	564
F066	S 12T12N R02E	Claiborne	163	--	--	Catahoula Formation	506
G011	----S07T12NR03E	Claiborne	415	272.45	10/20/81	Catahoula Formation	**
G027	----S07T12NR03E	Claiborne	415	257	7/31/80	Catahoula Formation	**
G035	S45T12NR03E	Claiborne	472	187	1/27/94	Catahoula Formation	300
G038	S 48T12N R03E	Claiborne	434	--	--	Catahoula Formation	280
H034	SWNWS27T12NR04E	Claiborne	408	41	9/1/80	Catahoula Formation	**
K041	----S60T11NR01E	Claiborne	460	199	10/21/81	Catahoula Formation	**
K049	S60T11NR01E	Claiborne	450	203	6/3/88	Catahoula Formation	244
L004	----S04T11NR02E	Claiborne	177	102	2/1/61	Catahoula Formation	**
L013	----S04T11NR02E	Claiborne	202	89	10/1/63	Catahoula Formation	**
L051	SEWS12T11NR02E	Claiborne	346	165	4/1/75	Catahoula Formation	**
L057	NWSES03T11NR02E	Claiborne	196	136	7/1/77	Catahoula Formation	**
L058	----S04T11NR02E	Claiborne	185	148	7/5/77	Catahoula Formation	**
L074	--NES05T11NR02E	Claiborne	166	101	8/16/84	Catahoula Formation	**
L080	NESES 03T10N R02E	Claiborne	270	115	10/31/79	Catahoula Formation	**
L083	SWNWS 20T10N R02E	Claiborne	260	144.8	2/9/98	Catahoula Formation	300
N001	SESES07T11NR04E	Claiborne	100	57	10/1/61	Catahoula Formation	**
N009	--NWS05T11NR04E	Claiborne	480	115	5/1/66	Catahoula Formation	**
N042	--NWS05T11NR04E	Claiborne	470	132.27	10/27/81	Catahoula Formation	**
O028	SESES12T10NR04E	Claiborne	960	269	8/19/86	Catahoula Formation	420
B002	NWNES07T02N04W	Copiah	250	72.3	2/22/96	Catahoula Formation	**
B011	NESES06T02NR04W	Copiah	380	77	2/1/82	Catahoula Formation	**
D002	S25T02NR02W	Copiah	113	73	8/1/71	Citronelle Formation	**
D005	S25T02NR02W	Copiah	92	69	1/1/59	Citronelle Formation	**

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TABLE 2.3-24 (Continued)

Local USGS Grid No.	LANDNET Location	County	Depth Of Well (ft)	Water Level – Last (ft)	Water Level Date - Last	Aquifer	Discharge (gpm)
D022	SWSWS25T02NR02W	Copiah	111	54.9	2/19/96	Catahoula Formation	**
D023	SWNWS25T02NR02W	Copiah	107	53.2	2/19/96	Citronelle Formation	**
D076	SWNES25T02NR02W	Copiah	320	225	8/15/85	Catahoula Formation	220
D087	NWNWS27T02NR02W	Copiah	515	229.35	2/21/96	Catahoula Formation	**
D089	NENES27T02NR02W	Copiah	515	115	6/1/75	Catahoula Formation	**
D100	NWSWS25T02NR02W	Copiah	128	56.7	4/15/91	Citronelle Formation	265
D101	SENES35T02NR02W	Copiah	137	78.5	4/20/91	Citronelle Formation	377
D103	NESES26T02NR02W	Copiah	500	--	--	Forest Hill Sand	25
E007	NE S31T02NR01W	Copiah	116	61.9	2/19/96	Citronelle Formation	**
E008	NWNES31T02NR01W	Copiah	107	--	--	Citronelle Formation	**
E044	NENWS31T02NR01W	Copiah	144	80	10/1/72	Citronelle Formation	**
E058	NENWS27T02NR01W	Copiah	310	171	6/11/82	Catahoula Formation	**
E070	SEENES 31T02N R01W	Copiah	119	--	--	Citronelle Formation	192
E071	SESWS29T02NR01W	Copiah	180	62.2	2/19/96	Citronelle Formation	250
E073	SWSES14T02NR01W	Copiah	170	--	--	Catahoula Formation	10
G018	NWSES05T01NR04W	Copiah	60	--	--	Citronelle Formation	**
J029	NWNES15T01NR02W	Copiah	215	80.9	2/20/96	Catahoula Formation	**
J054	SWSWS15T01NR02W	Copiah	170	38.4	2/22/96	Catahoula Formation	**
J066	NESWS15T01NR02W	Copiah	184	52.65	10/29/81	Catahoula Formation	**
J068	NESES05T01NR02W	Copiah	356	160	9/11/86	Miocene Series, Undifferentiated	250
J069	NENES15T01NR02W	Copiah	233	89.2	2/20/96	Catahoula Formation	418
J074	NENWS34T01NR02W	Copiah	240	95.35	2/20/96	Catahoula Formation	40
J076	NWSWS 09T01N R02W	Copiah	533	228.6	3/1/98	Catahoula Formation	351
K018	NESWS14T01NR01W	Copiah	208	163	6/1/72	Catahoula Formation	**
K032	NENWS10T01NR01W	Copiah	269	114.4	2/22/96	Catahoula Formation	**
K034	SESES10T01NR01W	Copiah	190	--	--	Catahoula Formation	550
K035	SESES10T01NR01W	Copiah	200	--	--	Catahoula Formation	**
K037	SWSWS17T01NR01W	Copiah	190	--	--	Catahoula Formation	**
KO41	NESES06T01NR01W	Copiah	220	--	--	Citronelle Formation	**
L025	SWSWS31T01NR02E	Copiah	424	--	--	Catahoula Formation	50
L027	SWSWS31T01NR02E	Copiah	585	--	7/12/90	Catahoula Formation	100

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Local USGS Grid No.	LANDNET Location	County	Depth Of Well (ft)	Water Level – Last (ft)	Water Level Date - Last	Aquifer	Discharge (gpm)
L028	NES30T01NR01E	Copiah	200	33.6	1/22/92	Catahoula Formation	276
O005	NESES21T10NR07E	Copiah	465	104.75	2/20/96	Catahoula Formation	**
O009	NENES21T10NR07E	Copiah	430	40	8/1/73	Catahoula Formation	**
O011	SWNWS29T10NR07E	Copiah	554	132	3/27/95	Catahoula Formation	222
P009	NENES10T10NR08E	Copiah	333	178.55	4/19/93	Catahoula Formation	**
P059	SESES01T10NR08E	Copiah	300	140.7	2/20/96	Catahoula Formation	**
P060	NWNWS10T10NR08E	Copiah	291	235.5	2/20/96	Catahoula Formation	**
P062	NENWS09T10NR08E	Copiah	475	228	3/22/83	Catahoula Formation	**
P064	NESES12T10NR08E	Copiah	355	143	8/1/71	Catahoula Formation	**
P074	NWNWS10T10NR08E	Copiah	293	192	10/23/86	Catahoula Formation	500
P075	NWNWS10T10NR08E	Copiah	288	192	10/23/86	Catahoula Formation	564
P076	NES12T10NR08E	Copiah	331	143	10/28/92	Catahoula Formation	500
P077	SENWS10T10NR08E	Copiah	280	178	10/13/93	Catahoula Formation	435
Q011	SWNWS07T10NR09E	Copiah	346	166.8	2/20/96	Catahoula Formation	**
Q022	SWSES09T10NR09E	Copiah	600	197.51	5/8/97	Catahoula Formation	**
Q025	SWSWS 06T10N R09E	Copiah	312	160	11/13/97	Catahoula Formation	682
Q027	NWSES 29T10N R09E	Copiah	308	95	7/29/99	Catahoula Formation	70
R027	SENWS02T10NR10E	Copiah	760	29	4/18/95	Forest Hill Sand	125
R028	NWNWS01T10NR10E	Copiah	724	14.3	4/18/95	Forest Hill Sand	201
R029	NWNWS06T10NR02E	Copiah	570	40	11/28/94	Catahoula Formation	90
V019	SWNES34T09NR08E	Copiah	332	109.3	2/21/96	Catahoula Formation	**
V022	SENWS35T09NR08E	Copiah	285	81	1/28/81	Catahoula Formation	**
V025	NESWS34T09NR08E	Copiah	360	106.3	2/21/96	Catahoula Formation	**
V029	NWSES35T09NR08E	Copiah	364	63.4	10/19/89	Catahoula Formation	400
V030	NWSES35T09NR08E	Copiah	320	40.3	2/21/96	Catahoula Formation	400
V031	NESWS35T09NR08E	Copiah	382	98.6	1/22/90	Miocene Series, Undifferentiated	506
X014	SWSWS 18T09N R10E	Copiah	214	90	7/22/99	Catahoula Formation	35
B018	SESES09T07NR02W	Hinds	1021	290.1	5/29/97	Cockfield Formation	**
B019	NWSES09T07NR02W	Hinds	1120	315.1	11/10/89	Cockfield Formation	**
B021	NWNWS11T07NR02W	Hinds	893	147	10/17/83	Cockfield Formation	**

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Local USGS Grid No.	LANDNET Location	County	Depth Of Well (ft)	Water Level – Last (ft)	Water Level Date - Last	Aquifer	Discharge (gpm)
B023	SWSESES 09T07N R02W	Hinds	1050	277	4/30/01	Cockfield Formation	874
C013	NWNES36T07NR01W	Hinds	705	180	7/1/57	Cockfield Formation	**
C029	----S03T07NR01W	Hinds	774	133.75	7/23/97	Cockfield Formation	**
C031	SENES34T07NR01W	Hinds	642	129.87	10/25/84	Cockfield Formation	**
C032	NENWS11T07NR01W	Hinds	756	86	4/1/71	Cockfield Formation	**
C039	NESES16T07NR01W	Hinds	580	120	2/20/76	Cockfield Formation	**
C052	SEWS11T07NR01W	Hinds	677	162.8	7/23/97	Cockfield Formation	300
C057	SENWS31T07NR01W	Hinds	1479	328	9/27/90	Sparta Sand	350
C060	S34T07NR01W	Hinds	360	180	11/17/92	Cockfield Formation	75
C061	S34T07NR01W	Hinds	380	180	11/20/92	Cockfield Formation	75
C070	NWS 34T07N R01W	Hinds	355	180	2/1/01	Cockfield Formation	60
D002	SWSWS27T06NR04W	Hinds	1106	104	10/1/59	Cockfield Formation	**
D006	SENWS27T06NR04W	Hinds	1177	165	4/1/68	Cockfield Formation	**
D020	SWNWS29T06NR04W	Hinds	1360	102.25	5/14/97	Cockfield Formation	**
D021	NESES14T06NR04W	Hinds	1077	201.13	10/25/84	Cockfield Formation	**
D042	SWSWS27T06NR04W	Hinds	1095	160	1/10/87	Cockfield Formation	284
E003	NESWS24T06NR03W	Hinds	1034	76	3/1/55	Cockfield Formation	**
E022	NESWS24T06NR03W	Hinds	950	136.1	5/29/97	Cockfield Formation	**
E030	SWNWS35T06NR03W	Hinds	1198	253.75	10/25/84	Cockfield Formation	**
E036	NESWS24T06NR03W	Hinds	963	112.8	5/1/86	Cockfield Formation	400
F022	NESWS27T06NR02W	Hinds	992	186	10/2/95	Cockfield Formation	**
F024	SWNWS24T06NR02W	Hinds	946	259.4	5/19/97	Cockfield Formation	**
F054	NESWS34T06NR02W	Hinds	1089	204.65	6/12/97	Cockfield Formation	200
F057	SENES08T06NR02W	Hinds	1125	182	10/19/92	Cockfield Formation	350
F061	NESES 14T 06NR02W	Hinds	1000	216	6/17/98	Cockfield Formation	807
G038	NENWS29T06NR01W	Hinds	773	275	1/1/55	Cockfield Formation	**
G059	NWNWS19T06NR01W	Hinds	893	245.73	10/9/01	Cockfield Formation	260
G062	NENES30T06NR01W	Hinds	718	228	8/5/61	Cockfield Formation	**
G064	NESWS21T06NR01W	Hinds	903	275	9/29/76	Sparta Sand	**
G067	SWNWS21T06NR01W	Hinds	926	277	9/29/76	Sparta Sand	**
G070	SWSES21T06NR01W	Hinds	903	324	9/29/76	Sparta Sand	600
G084	SWSES34T06NR01W	Hinds	1020	334	11/28/87	Sparta Sand	15

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Local USGS Grid No.	LANDNET Location	County	Depth Of Well (ft)	Water Level – Last (ft)	Water Level Date - Last	Aquifer	Discharge (gpm)
G088	NENES20T06NR01W	Hinds	1155	208	9/29/76	Sparta Sand	**
G090	SWSES11T06NR01W	Hinds	987	73	5/1/73	Sparta Sand	**
G092	NWNES21T06NR01W	Hinds	935	226.96	10/29/84	Sparta Sand	**
G094	SWSES16T06NR01W	Hinds	930	204	4/12/79	Sparta Sand	**
G101	SESES16T06NR01W	Hinds	842	274.24	10/9/01	Sparta Sand	**
H035	NWSES11T06NR01E	Hinds	680	158	11/1/56	Sparta Sand	**
H075	NESWS08T06NR01E	Hinds	900	289.6	12/2/83	Sparta Sand	**
H114	NESWS11T06NR01E	Hinds	823	160	5/1/58	Sparta Sand	**
H146	SWSES07T06NR01E	Hinds	746	286.46	10/20/80	Sparta Sand	608
H181	NESWS27T06NR01E	Hinds	791	242	11/30/82	Sparta Sand	159
H192	SWSWS19T06NR01E	Hinds	828	265.4	8/10/89	Sparta Sand	503
H198	NWNES 08T06N R01E	Hinds	1700	158.95	11/15/01	Meridian-Upper Wilcox	750
H201	NWSES 08T06N R01E	Hinds	1680	120.43	7/7/00	Sparta Sand	700
H203	S 08T06N R01E	Hinds	1670	153.53	11/15/01	Sparta Sand	300
J029	NWSES11T05NR04W	Hinds	1050	130.24	11/14/89	Cockfield Formation	**
J032	--SES01T05NR04W	Hinds	1062	93	6/1/64	Cockfield Formation	**
J049	NESWS08T05NR04W	Hinds	1260	157.82	5/14/97	Cockfield Formation	**
J050	NESES08T05NR04W	Hinds	880	133.42	11/14/89	Cockfield Formation	**
J062	NESWS11T05NR04W	Hinds	1077	105	5/4/86	Cockfield Formation	300
J066	NESWS11T05NR04W	Hinds	1087	86	4/5/88	Cockfield Formation	500
J070	SWNES 13T 15NR05E	Hinds	--	30	12/29/97	Forest Hill Sand	42
J071	SWNES 13T 15NR05E	Hinds	162	30	12/29/97	Forest Hill Sand	38
K021	NWSWS19T05NR03W	Hinds	1088	95	1/1/64	Cockfield Formation	**
K063	NWSES26T05NR03W	Hinds	1195	164.3	6/13/97	Cockfield Formation	**
K070	NENWS35T05NR03W	Hinds	1164	140	4/12/93	Cockfield Formation	261
K072	NWNWS02T05NR03W	Hinds	1341	267.5	8/30/94	Cockfield Formation	361
L006	NENWS20T05NR02W	Hinds	1175	193	10/1/59	Cockfield Formation	**
L030	SWSWS21T05NR02W	Hinds	1168	218.7	5/29/97	Cockfield Formation	**
L037	SENWS30T05NR02W	Hinds	1259	186.4	6/13/97	Cockfield Formation	**
L049	NESWS24T05NR02W	Hinds	1052	215	8/1/72	--	**
L072	NESES28T05NR02W	Hinds	1245	230	2/21/94	Cockfield Formation	164
L074	NWSWS 21T05N R02W	Hinds	1757	--	--	Sparta Sand	610

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Local USGS Grid No.	LANDNET Location	County	Depth Of Well (ft)	Water Level – Last (ft)	Water Level Date - Last	Aquifer	Discharge (gpm)
M099	NWNES15T05NR01W	Hinds	1120	296	7/8/87	Sparta Sand	22
M099	NWNES15T05NR01W	Hinds	1120	296	7/8/87	Sparta Sand	608
M104	NENWS28T05NR01W	Hinds	1411	269.7	8/23/89	Sparta Sand	21
M105	NWNES22T05NR01W	Hinds	1246	318	7/24/87	Sparta Sand	15
M112	SWSES28T05NR01W	Hinds	1398	297.13	11/14/01	Sparta Sand	1260
M117	SWSWS16T05NR01W	Hinds	1426	292	1/13/84	Sparta Sand	**
M118	NWSES07T05NR01W	Hinds	890	244	11/7/84	Cockfield Formation	125
M124	NENWS30T05NR01W	Hinds	960	255	3/21/94	Cockfield Formation	50
N018	SWSWS16T05NR01E	Hinds	850	199	8/1/59	Sparta Sand	**
N020	SWSWS16T05NR01E	Hinds	795	144	2/1/52	Sparta Sand	**
N026	SWSES09T05NR01E	Hinds	749	140	10/1/56	Sparta Sand	**
N040	NENWS03T05NR01E	Hinds	746	145	3/1/52	Sparta Sand	**
N072	NWNWS03T05NR01E	Hinds	714	188	7/1/65	Sparta Sand	**
N077	SESES08T05NR01E	Hinds	786	185	11/1/71	Sparta Sand	**
N093	NWNWS16T05NR01E	Hinds	752	204	4/1/89	Sparta Sand	572
O031	NWSES01T14NR05E	Hinds	1280	101.43	11/17/89	Cockfield Formation	**
O061	SENWS01T14NR05E	Hinds	324	94	9/1/67	Forest Hill Sand	**
P059	SEWSWS07T04NR03W	Hinds	1141	109.25	6/13/97	Cockfield Formation	**
P072	SEWSWS07T04NR03W	Hinds	990	111.2	6/13/97	Cockfield Formation	**
R002	SWSES25T04NR01W	Hinds	1275	88	6/1/59	Sparta Sand	**
R173	NESWS05T04NR01E	Hinds	960	195	1/4/89	Sparta Sand	60
R174	SWSWS26T04NR01W	Hinds	220	68	6/22/89	Mint Springs	**
S002	SWSWS15T03NR04W	Hinds	307	57.94	10/22/81	Catahoula Formation	**
S038	----S01T14NR05E	Hinds	1198	119	1/16/81	Cockfield Formation	**
S040	SEWSWS15T03NR04W	Hinds	288	56	7/14/86	Catahoula Formation	335
S046	NENES31T03NR04W	Hinds	190	49	10/28/87	Catahoula Formation	134
S047	NWNWS32T03NR04W	Hinds	193	43	8/28/87	Catahoula Formation	127
S051	NENWS22T03NR04W	Hinds	300	60	11/1/94	Catahoula Formation	261
T014	--NES01T03NR03W	Hinds	530	130	1/1/68	Catahoula Formation	**
U027	NWNES23T03NR02W	Hinds	721	298	11/19/84	Forest Hill Sand	**
V033	NWSWS15T03NR01W	Hinds	473	189.2	10/9/01	Forest Hill Sand	205
V057	--SES21T03NR01W	Hinds	510	181	7/1/98	Forest Hill Sand	190

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Local USGS Grid No.	LANDNET Location	County	Depth Of Well (ft)	Water Level – Last (ft)	Water Level Date - Last	Aquifer	Discharge (gpm)
V058	NENES10T03NR01W	Hinds	525	126	8/1/68	Forest Hill Sand	**
V059	SWSES09T03NR01W	Hinds	433	136.8	3/20/87	Forest Hill Sand	**
V064	NWNWS28T03NR01W	Hinds	590	120	12/1/61	Forest Hill Sand	**
V069	SESES28T03NR01W	Hinds	550	103	2/1/76	Forest Hill Sand	**
V071	NESES16T03NR01W	Hinds	510	135	12/18/76	Forest Hill Sand	**
V076	NWSES09T03NR01W	Hinds	421	131.18	10/19/81	Forest Hill Sand	**
V081	SESES03T03NR01W	Hinds	445	190	6/27/80	Forest Hill Sand	**
V082	SWNES28T03NR01W	Hinds	1846	188.65	9/11/95	Sparta Sand	**
V095	SWSES09T03NR01W	Hinds	417	145	11/1/87	Forest Hill Sand	927
V110	SENWSES 21T03N R01W	Hinds	510	198	12/6/00	Forest Hill Sand	145
D010	NWSES29T10NR02E	Jefferson	375	168.49	11/4/81	Catahoula Formation	**
D016	NENWS29T10NR02E	Jefferson	279	170	10/1/64	Catahoula Formation	**
D022	S 62T10N R02E	Jefferson	596	227	1/14/99	Catahoula Formation	252
H001	----S49T09NR01E	Jefferson	262	160.75	4/24/96	Catahoula Formation	**
H010	--NWS71T09NR01E	Jefferson	265	158	1/15/79	Catahoula Formation	**
H011	--NWS71T09NR01E	Jefferson	263	138	1/15/76	Catahoula Formation	**
H024	----S72T09NR01E	Jefferson	266	128	6/17/84	Catahoula Formation	**
J009	--NWS03T09NR02E	Jefferson	676	211	6/24/82	Catahoula Formation	172
J013	----S47T09NR02E	Jefferson	336	155	5/11/84	Catahoula Formation	**
J014	S47T09NR02E	Jefferson	260	130	8/17/84	Catahoula Formation	406
M033	S 40T08N R012W	Jefferson	790	380.4	4/24/96	Catahoula Formation	172
N017	SENWS 36T08N R01E	Jefferson	810	241	9/1/97	Catahoula Formation	400
O010	--	Jefferson	970	387	9/1/97	Catahoula Formation	431
Q011	SESES 25T08N R04E	Jefferson	555	214	12/10/81	Catahoula Formation	**
Q013	SEWS03T08NR04E	Jefferson	555	359.7	6/25/98	Miocene Series, Undifferentiated	**
Q016	--	Jefferson	564	352	3/25/98	Catahoula Formation	250
A011	NENES27T18NR02E	Warren	154	16	9/1/68	MS River Alluvial	**
A020	NWSES26T18NR02E	Warren	149	28	11/17/81	MS River Alluvial	230
B006	SESES13T18NR04E	Warren	848	37	12/16/80	Cockfield Formation	**

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Local USGS Grid No.	LANDNET Location	County	Depth Of Well (ft)	Water Level – Last (ft)	Water Level Date - Last	Aquifer	Discharge (gpm)
B009	NWNWS24T18NR04E	Warren	806	20	11/1/67	Cockfield Formation	**
B043	NWNES26T18NR04E	Warren	845	26	8/6/85	Cockfield Formation	80
B053	S13T18NR04E	Warren	80	6	5/21/93	MS River Alluvial	75
B054	S13T18NR04E	Warren	85	6	5/19/93	MS River Alluvial	75
E023	NWNES22T17NR03E	Warren	122	17	8/1/86	MS River Alluvial	1000
E025	NWNES22T17NR03E	Warren	120	19.5	10/15/90	MS River Alluvial	1402
E027	SWSNES 22T17N R03E	Warren	141	36	10/22/99	MS River Alluvial	1110
E028	NWNESES 22T17N R03E	Warren	140	42	10/22/99	MS River Alluvial	1110
F035	----S18T07NR04E	Warren	140	25	12/4/80	MS River Alluvial	**
G030	SWSWS35T17NR05E	Warren	1390	234.15	12/9/94	Cockfield Formation	700
G031	SESES35T17NR05E	Warren	1340	140	8/16/94	Cockfield Formation	708
J021	SWSWS02T16NR03E	Warren	181	51	9/1/66	MS River Alluvial	**
J022	SENWS03T16NR03E	Warren	140	28	9/1/66	MS River Alluvial	**
J023	NENWS03T16NR03E	Warren	140	26	9/1/66	MS River Alluvial	**
J026	SWNWS02T16NR03E	Warren	132	25	9/1/68	MS River Alluvial	**
J027	SWNWS03T16NR03E	Warren	119	25	10/1/68	MS River Alluvial	**
J028	SENWS03T16NR03E	Warren	163	26	10/1/68	MS River Alluvial	**
J029	SESES03T16NR03E	Warren	141	25	1/1/68	MS River Alluvial	**
J030	NWSWS02T16NR03E	Warren	161	28	10/1/68	MS River Alluvial	**
J032	NWNES03T16NR03E	Warren	142	22	9/1/68	MS River Alluvial	**
J033	NWNES03T16NR03E	Warren	143	22	9/1/68	MS River Alluvial	**
J047	--	Warren	155	50	10/22/99	MS River Alluvial	1001
J048	NWNES 03T16N R03E	Warren	154	52	10/22/99	MS River Alluvial	1062
J049	SWSWNWS 03T16N R03E	Warren	160	53	10/22/99	MS River Alluvial	1067
K027	SENWS36T16NR04E	Warren	365	140	9/23/80	Forest Hill Sand	**
K029	SWNES25T16NR04E	Warren	1220	151	6/16/80	Cockfield Formation	**
K032	NENWS04T16NR04E	Warren	310	90	8/30/83	Forest Hill Sand	**
K033	NWSWS36T16NR04E	Warren	351	152	3/1/80	Forest Hill Sand	300
M017	SEWS42T15NR03E	Warren	425	125	3/1/75	Forest Hill Sand	**
N011	NENES10T15NR04E	Warren	434	172	8/1/66	Forest Hill Sand	**
N016	SWSES03T15NR04E	Warren	460	176	8/1/66	Forest Hill Sand	**
N022	SWNWS11T15NR04E	Warren	380	107	9/1/74	Forest Hill Sand	**

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Local USGS Grid No.	LANDNET Location	County	Depth Of Well (ft)	Water Level – Last (ft)	Water Level Date - Last	Aquifer	Discharge (gpm)
N027	NENES26T15NR04E	Warren	320	40	7/28/78	Forest Hill Sand	**
N032	NESWS35T15NR04E	Warren	1190	147	1/27/83	Cockfield Formation	**
R001	SWNES49T14NR03E	Warren	130	80	2/1/61	MS River Alluvial	**
R004	----S16T14NR03E	Warren	124	40	10/1/75	Catahoula Formation	**
R013	----S49T14NR03E	Warren	93	25	9/1/65	MS River Alluvial	**
R014	NENWS01T14NR03E	Warren	363	70	12/1/68	Forest Hill Sand	**
R019	----S49T14NR03E	Warren	98	23	3/1/69	MS River Alluvial	**
R023	NENWS01T14NR03E	Warren	380	93	8/30/77	Forest Hill Sand	**
R026	NENWS01T14NR03E	Warren	410	192	12/26/79	Forest Hill Sand	**
S008	NESWS25T14NR04E	Warren	82	14	1/1/70	Catahoula Formation	**
S016	SEWS03T14NR04E	Warren	1360	90	12/1/79	Cockfield Formation	**

NOTES:

** - No discharge information available.

SOURCE:

USGS, Jackson, Mississippi, 2002, Data File for Public Supply and Industrial Wells (Reference 33)

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TABLE 2.3-25

DETAILS OF PUBLIC SUPPLY AND INDUSTRIAL WELLS IN PORT GIBSON, MS

Owner	Latitude	Longitude	Use	County	Amount Withdrawn (mgd)	Maximum Rate (gpm)	Aquifer
City of Port Gibson	315714	905911	Municipal	Claiborne	0.17	335	Catahoula
City of Port Gibson	315735	905927	Municipal	Claiborne	0.17	200	Catahoula
City of Port Gibson	315650	905902	Municipal	Claiborne	0.17	300	Catahoula
City of Port Gibson	315730	905904	Abandoned	Claiborne	0	0	Catahoula
City of Port Gibson	315720	905855	Municipal	Claiborne	0.17	306	Catahoula
Southern Cotton Oil Co. ¹	315755	905925	Industrial	Claiborne	0	0	Miocene
City of Port Gibson	315730	905904	Municipal	Claiborne	0.17	350	Catahoula

SOURCE: Reference 33

NOTES:

1. Southern Cotton Oil Co. no longer operating.

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TABLE 2.3-26

WATER WELLS WITHIN A 4-MILE RADIUS OF GGNS

Local USGS Grid No.	LANDNET Location	Depth Of Well (ft)	Water Level - Last (ft)	Water Level Date - Last	Aquifer	Discharge (gpm)
B002	SESES36T13NR02E	--	--	--	--	**
B003	----S37T13NR02E	--	--	--	--	**
B004	SWSWS31T13NR02E	225	12	8/10/90	Catahoula Formation	20
E001	SESES04T12NR01E	--	--	--	--	**
E002	NWSWS04T12NR01E	110	--	--	Mississippi River Alluvial	**
E003	SWNWS04T12NR01E	110	--	--	Mississippi River Alluvial	**
E004	----S02T12NR01E	110	--	--	Mississippi River Alluvial	**
E005	NENWS31T12NR01E	401	90	3/14/79	Catahoula Formation	**
E006	S02T12NR01E	118	--	--	Mississippi River Alluvial	5000
F007	----S12T12NR02E	240	118	4/6/66	Miocene Series, Undifferentiated	**
F010	--SWS28T12NR02E	116	88	7/7/68	Miocene Series, Undifferentiated	**
F011	NWNWS12T12NR02E	215	60	9/1/68	Catahoula Formation	**
F012	SWSWS06T12NR02E	208	10	1/1/68	--	**
F013	SWNWS08T12NR02E	172	--	--	Catahoula Formation	**
F014	SWNES12T12NR02E	200	--	--	Catahoula Formation	**
F016	----S01T02NR02E	240	146.3	10/20/81	Catahoula Formation	**
F019	NESWS12T12NR02E	80	26	11/29/71	--	**
F020	--NWS29T12NR02E	--	--	--	--	**
F021	----S12T12NR02E	--	--	--	--	**
F022	NWNWS12T12NR02E	--	--	--	--	**
F023	NWNWS12T12NR02E	--	--	--	--	**
F024	NWNWS12T12NR02E	--	--	--	--	**
F025	----S12T12NR02E	--	--	--	--	**
F026	NENES09T12NR02E	256	152	8/1/72	Catahoula Formation	**
F027	----S12T12NR02E	147	91	7/1/72	Catahoula Formation	**
F030	----S12T12NR02E	--	--	--	--	**
F031	----S12T12NR02E	--	--	--	--	**
F032	----S12T12NR02E	--	--	--	--	**
F033	----S12T12NR02E	--	--	--	--	**
F034	----S12T12NR02E	--	--	--	--	**
F036	----S12T12NR02E	--	--	--	--	**

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TABLE 2.3-26 (Continued)

Local USGS Grid No.	LANDNET Location	Depth Of Well (ft)	Water Level - Last (ft)	Water Level Date - Last	Aquifer	Discharge (gpm)
F037	----S12T12NR02E	--	--	--	--	**
F038	----S12T12NR02E	--	--	--	--	**
F039	----S12T12NR02E	--	--	--	--	--
F040	----S12T12NR02E	--	--	--	--	--
F042	----S09T12NR02E	152	110	2/1/73	Miocene Series, Undifferentiated	--
F043	NWSES12T12NR02E	284	160	5/1/73	Miocene Series, Undifferentiated	--
F044	----S12T12NR02E	630	126	9/1/74	Forest Hill Sand	--
F045	NWSWS12T12NR02E	70	40	9/1/74	Miocene Series, Undifferentiated	--
F046	NWSES12T12NR02E	110	60	10/1/74	Miocene Series, Undifferentiated	--
F047	NWSWS12T12NR02E	75	40	10/1/74	Miocene Series, Undifferentiated	--
F048	NWSWS12T12NR02E	70	40	10/1/74	Miocene Series, Undifferentiated	--
F049	SWSES12T12NR02E	105	77.77	10/1/81	Catahoula Formation	--
F050	SWNES06T12NR02E	399	185	7/1/75	Catahoula Formation	--
F051	NWSES12T12NR02E	150	79	6/1/75	Catahoula Formation	--
F052	NWSES12T12NR02E	140	63	8/14/76	Catahoula Formation	--
F053	--NWS12T12NR02E	152	92	9/1/76	Catahoula Formation	--
F055	----S12T12NR02E	298	105	5/29/81	Catahoula Formation	--
F056	----S08T12NR02E	240	52	10/21/81	Catahoula Formation	--
F057	NWNWS01T12NR02E	505	142	8/1/82	Catahoula Formation	250
F058	----S12T12NR02E	40	27	9/10/86	Mississippi River Alluvial	2
F059	----S12T12NR02E	41	27	9/12/86	Mississippi River Alluvial	--
F060	----S12T12NR02E	23	19	9/13/86	Mississippi River Alluvial	--
F061	----S12T12NR02E	26	--	--	Mississippi River Alluvial	--
F062	----S12T12NR02E	52	29	9/16/86	Mississippi River Alluvial	--
F063	----S12T12NR02E	45	25	9/17/86	Mississippi River Alluvial	--
F064	S06T12NR02E	150	90	12/14/95	Catahoula Formation	564
F066	S 12T12N R02E	163	--	--	Catahoula Formation	506
K039	SWSES01T11NR01E	270	180	5/1/74	Catahoula Formation	--
L051	SEWS12T11NR02E	346	165	4/1/75	Catahoula Formation	--

NOTES:

** No discharge information available.

SOURCE:

USGS, Jackson, Mississippi, 2002, data file for radius search (Reference 33)

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TABLE 2.3-27

USGS WATER QUALITY SAMPLING DATA FOR THE MISSISSIPPI RIVER AT VICKSBURG, MS

SAMPLE DATE	INSTANTANEOUS DISCHARGE, CFS	GAGE HEIGHT IN FEET	SPECIFIC CONDUCTANCE (μ S/CM AT 25 DEG. C)	DISSOLVED OXYGEN (DO) (MG/L)	pH, WATER, WHOLE, FIELD, STANDARD UNITS	HARDNESS TOTAL (MG/L AS CaCO ₃)	SEDIMENT, SUSPENDED CONCENTRATION (MG/L)
10/18/61	311000		396		6.9	160	
11/17/61	535000		335		7.4	140	
3/30/73	1600000		300		7.5	130	
4/5/73	1730000						401
4/12/73	1760000						
4/12/73	1760000						
4/12/73	1760000						
4/12/73	1760000						
5/3/73	1900000		181		9.1	81	
5/3/73	1900000						
5/17/73	1930000						374
6/7/73	1360000		277		8.1	140	
6/7/73							322
7/13/73	634000		377		7.9	170	276
8/9/73	512000		340		7.7	140	252
9/6/73	338000		410	7.6	7.8	170	
10/4/73	361000		479	7.4	7.7	180	129
11/1/73	540000		387	6.8	7.9	160	429
12/4/73	1050000		315	9.5	7.8	120	164
12/17/73	1260000		260	11.5	6.7		
1/15/74	1230000		274	10	7.5	110	
1/30/74	1430000		243	10.4	7.6		
3/12/74	956000		334	8.4	7.8	140	

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TABLE 2.3-27 (Continued)

SAMPLE DATE	INSTANTANEOUS DISCHARGE, CFS	GAGE HEIGHT IN FEET	SPECIFIC CONDUCTANCE (μ S/CM AT 25 DEG. C)	DISSOLVED OXYGEN (DO) (MG/L)	pH, WATER, WHOLE, FIELD, STANDARD UNITS	HARDNESS TOTAL (MG/L AS CaCO ₃)	SEDIMENT, SUSPENDED CONCENTRATION (MG/L)
4/10/74	1020000		333	9.1	7.9	140	223
5/7/74	822000		300	7.4		140	403
6/5/74	1050000		280	6.8	7.7	140	485
7/9/74	899000		280	7	7.6	130	400
8/15/74	339000		400	7.8	8.3	180	
9/6/74	480000		350	7.4	7.4	160	275
10/8/74	355000		325	9.2	7.8	160	120
11/8/74	419000		500	8.2	7.5	160	590
12/3/74	664000		270	10.6	7.6	130	439
1/14/75	928000		260	10.5	6	130	526
2/10/75	1100000		325	11	7.1	130	606
3/7/75	1200000		280	9.3	6.3	100	
4/3/75	1680000		275	10	7	110	633
5/14/75	1270000		380	7.3	6.7	130	288
6/5/75	774000		400	7.3	7.3	140	206
7/15/75	511000		375	6.5	7.2	160	337
7/31/75	408000		424	6.9	7.8		
8/5/75	388000		400	6.7	7.4	160	225
9/9/75	400000		450	6.6	7.6	170	124
10/15/75	341000		440	8.3	7.5	180	88
11/6/75	441000		340	7	7.7	130	134
12/12/75	633000		349	8.4	7.9	140	317
1/15/76	921000		280	10.5	7.5	120	561
2/10/76	719000		350	9.5	7.9	120	365
3/2/76	961000		310	10.4	7.3	110	
4/6/76	831000		325	9	7.3	120	255

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TABLE 2.3-27 (Continued)

SAMPLE DATE	INSTANTANEOUS DISCHARGE, CFS	GAGE HEIGHT IN FEET	SPECIFIC CONDUCTANCE (μ S/CM AT 25 DEG. C)	DISSOLVED OXYGEN (DO) (MG/L)	pH, WATER, WHOLE, FIELD, STANDARD UNITS	HARDNESS TOTAL (MG/L AS CaCO ₃)	SEDIMENT, SUSPENDED CONCENTRATION (MG/L)
5/5/76	637000		425	8.1	7.4	150	457
6/2/76	429000		425	7.1	7.2	170	240
7/7/76	474000		400	6	7.3	140	280
7/28/76	342000		420		7.6	160	152
8/11/76	299000		434	7.8	8	170	
9/8/76	233000		400	6.7	7.5	150	134
10/12/76	242000		450	8.3	7.4	160	149
11/1/76	305000		400	10	7.6	140	181
12/7/76	240000		410	12.2	8	160	142
1/4/77	234000		342	13.6	7.9	150	137
2/8/77	210000		320	12.6	7.9	150	118
3/8/77	738000		350	9.1	7.8	130	619
4/5/77	812000		254	7.8	7.6	110	503
5/3/77	499000		340	7	7.8	140	229
6/1/77	308000		360	6.9	7.7	150	275
6/28/77	259000		501	6.8	7.8	150	249
8/2/77	281000		417	6.3	8	150	208
9/7/77	301000		420	7	7.7	140	220
10/4/77	489000		300	6.2	7.7	120	272
11/1/77	403000		330	7.8	7.8	150	172
12/5/77	770000		250	8.9	7.8	100	313
1/4/78	719000		270	11.1	7.3	140	254
2/3/78	753000		278	11.4	7.1	120	301
3/7/78	468000		330	10.9	6.8	130	277
3/28/78	1210000		293	11.2	5.6	120	524
5/5/78	830000		370	8.2	7.7	150	349

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TABLE 2.3-27 (Continued)

SAMPLE DATE	INSTANTANEOUS DISCHARGE, CFS	GAGE HEIGHT IN FEET	SPECIFIC CONDUCTANCE (μ S/CM AT 25 DEG. C)	DISSOLVED OXYGEN (DO) (MG/L)	pH, WATER, WHOLE, FIELD, STANDARD UNITS	HARDNESS TOTAL (MG/L AS CaCO ₃)	SEDIMENT, SUSPENDED CONCENTRATION (MG/L)
6/13/78	610000		383	6	7.9	150	330
7/11/78	498000		410	5.7	7.8	170	186
8/1/78	431000		404	5.5	7.9	170	223
9/6/78	340000		417	6.5	8	160	165
10/3/78	378000		360	6.4	7.6	170	399
11/7/78	280000		412	8.3	8.1	180	150
12/4/78	490000		419	9.5	7.9	170	281
1/3/79	839000		300	11.4	7.5	110	480
2/7/79	919000		260	13.2	7.7	98	302
3/6/79	1170000		257	12	7.3	93	558
4/3/79	1400000		340	9.2	7.3	120	374
5/1/79	1660000		310	8	7.3	120	254
6/5/79	930000		350	6.6	7.6	140	223
7/3/79	621000		400	6.5	7.8	160	190
8/7/79	747000		370	6	7.7	130	359
9/25/79	701000		370	7.5	7.8		261
10/2/79	721000		310	7.4	7.8	130	244
11/6/79	382000		420	8.2	8.2	170	163
12/11/79	905000		340	11	8	140	338
1/8/80	780000		350	11.6	8	140	281
2/5/80	578000		343	12.9	8	140	170
4/4/80	1270000		300	9.5	7.4	120	415
4/28/80	1190000		350	7.7	7.5	130	280
6/3/80	620000		340	8.4	8	120	172
6/27/80	580000		430	8.1	7.8	160	407
7/29/80	325000		410	6.7	7.6	160	346

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TABLE 2.3-27 (Continued)

SAMPLE DATE	INSTANTANEOUS DISCHARGE, CFS	GAGE HEIGHT IN FEET	SPECIFIC CONDUCTANCE (μ S/CM AT 25 DEG. C)	DISSOLVED OXYGEN (DO) (MG/L)	pH, WATER, WHOLE, FIELD, STANDARD UNITS	HARDNESS TOTAL (MG/L AS CaCO ₃)	SEDIMENT, SUSPENDED CONCENTRATION (MG/L)
8/26/80	422000		380	7.7	7.6	160	193
10/8/80	302000		417	7.9	8	160	163
11/3/80	243000		450	10.2	7.8	170	230
12/1/80	318000		439	12.5	8	160	235
1/13/81	176000		502	13.5	7.8	200	146
2/3/81	192000		473	12	8.2	170	484
2/25/81	393000		390	10.2	7.3	130	310
3/25/81	334000		380	9.5	7.5	140	247
4/28/81	621000		404	7.3	7.7	170	461
5/28/81	850000		310	6.8	7.8	140	690
6/24/81	876000		290	6.2	7.6	130	249
7/29/81	520000		395	6.4	7.5	160	490
9/22/81	322000		420	8	7.5	170	232
10/29/81	332000		502	7.4	7.8	200	170
1/6/82	482000		386	10.3	7.7	150	486
3/10/82	1090000		286	9.5	7.5	110	234
5/24/82	545000		473	7.3	7.5	170	
7/15/82	679000		440	7.2		150	726
12/6/82	911000		405	9.7	7.4	140	765
1/11/83	1380000	41.75	278	11	7.6	110	381
4/26/83	1470000	42.5	347	10.2	7.4		105
7/6/83	594000	22.8	411	7.2	7.8		204
11/17/83	365000	12	420		7.7		688
1/17/84	490000	17	320	12.3	7.5		100
5/23/84	1580000	45.5	284	7	7.1		231
7/18/84	720000	26	387	6.9	7.5		262

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TABLE 2.3-27 (Continued)

SAMPLE DATE	INSTANTANEOUS DISCHARGE, CFS	GAGE HEIGHT IN FEET	SPECIFIC CONDUCTANCE (μ S/CM AT 25 DEG. C)	DISSOLVED OXYGEN (DO) (MG/L)	pH, WATER, WHOLE, FIELD, STANDARD UNITS	HARDNESS TOTAL (MG/L AS CaCO ₃)	SEDIMENT, SUSPENDED CONCENTRATION (MG/L)
11/9/84	773000	26.75	327	8.1	7.8		300
1/23/85	740000		370	9.8	7.9		69
3/28/85	1290000		339	8.7	7.6		56
7/23/85	365000	12.25	397	6.7	7.9		
11/5/85	568000	20.5	431	8.3	7.8	150	168
1/15/86	450000	14	425	9.7	8.1	180	
4/10/86	624000	22.5	417	8.1	8	160	241
7/16/86	550000	17.4	530	7.2	8.1	210	
11/19/86	886000	29.5	414	9.3	8.2		291
1/28/87	591000	20.1	439	12	8.4		
4/22/87	948000	30.7	430	8.1	8		
8/13/87	274000	7.6	460	6.9	8.2		250
12/15/87	379000	11	443	7.8	7.7		166
2/10/88	918000	29.25	340	9.5	7.6		389
4/20/88	882000	30.75	396	9.2	7.8		183
6/2/88	281000	8	469		8		91
11/16/88	222000	3.5	484	7.5	7.7		
2/15/89	790000	25.25	300	9.2	7.5		
3/27/89	938000	35.5	317		7.7		202
6/23/89	876000	31.75	340	7.3	7.6		210
11/14/89	182000	10.5	405	9.3	7.8		
6/23/90	1050000	36.75	316		7.4		303
11/30/90	316000	9.3	415	9.3	7.9		15
2/15/91	847000	29.8	340	11.3	7.6		66
5/31/91	876000	32.8	330		7.6		9
7/26/91	373000	13.3	370	7.6	7.5		9

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TABLE 2.3-27 (Continued)

SAMPLE DATE	INSTANTANEOUS DISCHARGE, CFS	GAGE HEIGHT IN FEET	SPECIFIC CONDUCTANCE (μ S/CM AT 25 DEG. C)	DISSOLVED OXYGEN (DO) (MG/L)	pH, WATER, WHOLE, FIELD, STANDARD UNITS	HARDNESS TOTAL (MG/L AS CaCO ₃)	SEDIMENT, SUSPENDED CONCENTRATION (MG/L)
11/15/91	374000	11.7		10.5	8.1		12
1/10/92	744000	25.48	355	11.4	8.1		66
4/3/92	872000	30.2	323	10.4	7.9		117
7/24/92	570000	20.38	392	6.5	8		179
10/23/92	300000	7.29	408	9.7	8		143
1/22/93	1100000	35.96	320	11.5	7.9		284
4/30/93	1280000	42.6	349	9.5	7.9		194
7/23/93	938000	35.4	371	5.7	7.8		259
10/15/93	853000	31.83	348	8.4	7.8		171
2/4/94	1030000	33.04	298	12.1	7.9		338
5/20/94	1260000	42.3	343	8.1	7.5		159
8/26/94	356000	13.28	429	7.6	7.9		53
6/16/97	951000	37.05	375		7.3		
6/16/97			375	7.2	7.3		
8/2/99	410000	15.7	480	5.9	7.6		
Minimum	176000		181	5.5	5.6	81	9
Maximum	1930000		530	13.6	9.1	210	765

SOURCE:

USGS <http://waterdata.usgs.gov/nwis/qw> (Reference 42)

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Table 2.3-28

USGS WATER QUALITY SAMPLING DATA FOR THE MISSISSIPPI RIVER NEAR ST.
JOSEPH, LOUISIANA, APPROXIMATELY AT RIVER MILE 390
STATION NO. 315218091150000

Sample Date	Parameter Value	Full Parameter Name and Units
8/12/1976	27.0	TEMPERATURE, WATER (DEG. C)
8/12/1976	20	TURBIDITY (JACKSON CANDLE UNITS)
8/12/1976	10	COLOR (PLATINUM-COBALT)
8/12/1976	430	SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C)
8/12/1976	8.0	OXYGEN DISSOLVED (MG/L)
8/12/1976	99	OXYGEN DISSOLVED (% OF SATURATION)
8/12/1976	18	CHEMICAL OXYGEN DEMAND, HIGH LEVEL, (MG/L)
8/12/1976	8.0	pH, WATER, WHOLE, FIELD, STANDARD UNITS
8/12/1976	2.2	CARBON DIOXIDE DISSOLVED (MG/L AS CO2)
8/12/1976	113	ACID NEUTRALIZING CAPACITY (ANC), WATER, UNFILTERED, FIXED ENDPOINT TITRATION, FIELD, MG/L AS CaCO3
8/12/1976	140	ACID NEUTRALIZING CAPACITY (ANC), WATER, UNFILTERED, BICARBONATE, FIXED ENDPOINT TITRATION, FIELD, MILLIGRAMS PER LITER AS HCO3
8/12/1976	0.0	ACID NEUTRALIZING CAPACITY (ANC), WATER, UNFILTERED, CARBONATE, FIXED ENDPOINT TITRATION, FIELD, MILLIGRAMS PER LITER AS
8/12/1976	0.0	OIL AND GREASE TOTAL RECOVERABLE, GRAVIMETRIC FREON EXTRACTABLE (MG/L)
8/12/1976	1.3	NITROGEN TOTAL (MG/L AS N)
8/12/1976	0.65	NITROGEN ORGANIC TOTAL (MG/L AS N)
8/12/1976	0.01	NITROGEN AMMONIA TOTAL (MG/L AS N)
8/12/1976	0.66	NITROGEN AMMONIA PLUS ORGANIC TOTAL (MG/L AS N)
8/12/1976	0.7	NITROGEN NITRITE PLUS NITRATE TOTAL (MG/L AS N)
8/12/1976	0.100	PHOSPHORUS TOTAL (MG/L AS P)
8/12/1976	4.2	CARBON ORGANIC TOTAL (MG/L AS C)
8/12/1976	0.000	CYANIDE TOTAL (MG/L AS CN)
8/12/1976	170	HARDNESS TOTAL (MG/L AS CaCO3)
8/12/1976	52	NONCARBONATE HARDNESS WATER WHOLE TOTAL, FIELD, (MG/L AS CaCO3)
8/12/1976	43.0	CALCIUM DISSOLVED (MG/L AS Ca)
8/12/1976	14.0	MAGNESIUM DISSOLVED (MG/L AS Mg)
8/12/1976	23.0	SODIUM DISSOLVED (MG/L AS Na)
8/12/1976	0.8	SODIUM ADSORPTION RATIO
8/12/1976	3.10	POTASSIUM DISSOLVED (MG/L AS K)
8/12/1976	19.0	CHLORIDE DISSOLVED (MG/L AS Cl)
8/12/1976	66.0	SULFATE DISSOLVED (MG/L AS SO4)

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Table 2.3-28 (Continued)

Sample Date	Parameter Value	Full Parameter Name and Units
8/12/1976	35	STREPTOCOCCI, FECAL, MEMBRANE FILTER, M-ENTEROCOCCUS AGAR (COLONIES/100 ML)
8/12/1976	6	PHENOLS, TOTAL (UG/L)
8/12/1976	0.00	PCB, TOTAL (UG/L)
8/12/1976	0.0	PCB IN BOTTOM MATERIAL (UG/KG DRY SOLIDS)
8/12/1976	0.030	PHOSPHORUS ORTHOPHOSPHATE, TOTAL (MG/L AS P)
8/12/1976	5.9	NITROGEN, TOTAL (MG/L AS NO3)

SOURCE:

USGS, <http://waterdata.usgs.gov/nwis/qw> (Reference 42)

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TABLE 2.3-29

USGS WATER QUALITY DATA FOR THE MISSISSIPPI RIVER AT MILE 405
STATION NO. 315956091050000

Sample Date	Parameter Value	Full Parameter Name and Units
12/1/1980	316000	DISCHARGE, INSTANTANEOUS, CUBIC FEET PER SECOND
12/1/1980	15	CHEMICAL OXYGEN DEMAND, HIGH LEVEL, (MG/L)
12/1/1980	7.7	pH, WATER, WHOLE, LABORATORY, STANDARD UNITS
12/1/1980	65	RESIDUE, TOTAL NON FILTERABLE (MG/L)
12/1/1980	5	RESIDUE, VOLATILE NONFILTRABLE (MG/L)
12/1/1980	60	RESIDUE, FIXED NON FILTERABLE (MG/L)
12/1/1980	0	OIL AND GREASE TOTAL RECOVERABLE, GRAVIMETRIC FREON EXTRACTABLE (MG/L)
12/1/1980	1.1	NITROGEN TOTAL (MG/L AS N)
12/1/1980	0.91	NITROGEN DISSOLVED (MG/L AS N)
12/1/1980	0.19	NITROGEN ORGANIC TOTAL (MG/L AS N)
12/1/1980	0.08	NITROGEN ORGANIC DISSOLVED (MG/L AS N)
12/1/1980	0.04	NITROGEN AMMONIA DISSOLVED (MG/L AS N)
12/1/1980	0.11	NITROGEN AMMONIA TOTAL (MG/L AS N)
12/1/1980	0.02	NITROGEN, NITRITE, TOTAL, MG/L AS N
12/1/1980	0.78	NITROGEN NITRATE TOTAL (MG/L AS N)
12/1/1980	0.12	NITROGEN AMMONIA PLUS ORGANIC DISSOLVED (MG/L AS N)
12/1/1980	0.18	NITROGEN AMMONIA PLUS ORGANIC SUSPENDED TOTAL (MG/L AS N)
12/1/1980	0.30	NITROGEN AMMONIA PLUS ORGANIC TOTAL (MG/L AS N)
12/1/1980	0.8	NITROGEN NITRITE PLUS NITRATE TOTAL (MG/L AS N)
12/1/1980	0.790	NITROGEN NITRITE PLUS NITRATE DISSOLVED (MG/L AS N)
12/1/1980	0.170	PHOSPHORUS TOTAL (MG/L AS P)
12/1/1980	0.060	PHOSPHORUS DISSOLVED (MG/L AS P)
12/1/1980	7.9	CARBON ORGANIC TOTAL (MG/L AS C)
12/1/1980	0	CYANIDE TOTAL (MG/L AS CN)
12/1/1980	150	HARDNESS TOTAL (MG/L AS CAC03)
12/1/1980	39.0	CALCIUM DISSOLVED (MG/L AS CA)
12/1/1980	12.0	MAGNESIUM DISSOLVED (MG/L AS MG)
12/1/1980	20.0	SODIUM DISSOLVED (MG/L AS NA)
12/1/1980	0.7	SODIUM ADSORPTION RATIO
12/1/1980	3.20	POTASSIUM DISSOLVED (MG/L AS K)
12/1/1980	21.0	CHLORIDE DISSOLVED (MG/L AS CL)
12/1/1980	59.0	SULFATE DISSOLVED (MG/L AS SO4)
12/1/1980	1.0	ARSENIC DISSOLVED (UG/L AS AS)
12/1/1980	1	ARSENIC SUSPENDED TOTAL (UG/L AS AS)
12/1/1980	2	ARSENIC TOTAL (UG/L AS AS)
12/1/1980	0	BERYLLIUM DISSOLVED (UG/L AS BE)

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TABLE 2.3-29 (Continued)

Sample Date	Parameter Value	Full Parameter Name and Units
12/1/1980	10	BERYLLIUM SUSPENDED RECOVERABLE (UG/L AS BE)
12/1/1980	0	BERYLLIUM TOTAL (UG/L AS BE)
12/1/1980	0	CADMIUM DISSOLVED (UG/L AS CD)
12/1/1980	0	CADMIUM SUSPENDED (UG/L AS CD)
12/1/1980	0	CADMIUM TOTAL (UG/L AS CD)
12/1/1980	10.0	CHROMIUM DISSOLVED (UG/L AS CR)
12/1/1980	0	CHROMIUM SUSPENDED (UG/L AS CR)
12/1/1980	0	CHROMIUM HEXAVALENT DISSOLVED (UG/L AS CR)
12/1/1980	10	CHROMIUM TRIVALENT (UG/L AS CR)
12/1/1980	10	CHROMIUM TOTAL (UG/L AS CR)
12/1/1980	2.0	COPPER DISSOLVED (UG/L AS CU)
12/1/1980	4	COPPER SUSPENDED (UG/L AS CU)
12/1/1980	6.0	COPPER TOTAL (UG/L AS CU)
12/1/1980	50	IRON DISSOLVED (UG/L AS FE)
12/1/1980	0	LEAD DISSOLVED (UG/L AS PB)
12/1/1980	6	LEAD SUSPENDED (UG/L AS PB)
12/1/1980	6	LEAD TOTAL (UG/L AS PB)
12/1/1980	110	MANGANESE SUSPENDED (UG/L AS MN)
12/1/1980	120	MANGANESE TOTAL (UG/L AS MN)
12/1/1980	8.0	MANGANESE DISSOLVED (UG/L AS MN)
12/1/1980	2.00	NICKEL DISSOLVED (UG/L AS NI)
12/1/1980	5	NICKEL SUSPENDED (UG/L AS NI)
12/1/1980	7	NICKEL TOTAL (UG/L AS NI)
12/1/1980	0	VANADIUM DISSOLVED (UG/L AS V)
12/1/1980	0	ZINC DISSOLVED (UG/L AS ZN)
12/1/1980	20	ZINC SUSPENDED (UG/L AS ZN)
12/1/1980	20	ZINC TOTAL (UG/L AS ZN)
12/1/1980	0	SELENIUM DISSOLVED (UG/L AS SE)
12/1/1980	0	SELENIUM SUSPENDED (UG/L AS SE)
12/1/1980	0	SELENIUM TOTAL (UG/L AS SE)
12/1/1980	0	PHENOLS, TOTAL (UG/L)
12/1/1980	≤0.1	PCB, TOTAL (UG/L)
12/1/1980	8.1	CHLOROPHYLL-A, PHYTOPLANKTON, CHROMOTOGRAPHIC- FLUOROMETRIC (UG/L)
12/1/1980	1.4	CHLOROPHYLL-B, PHYTOPLANKTON, CHROMOTOGRAPHIC- FLUOROMETRIC (UG/L)
12/1/1980	0.13	NITROGEN, AMMONIA, TOTAL (MG/L AS NH4)
12/1/1980	0.05	NITROGEN, AMMONIA, DISSOLVED (MG/L AS NH4)
12/1/1980	0.52	PHOSPHORUS TOTAL (MG/L AS PO4)
12/1/1980	4.9	NITROGEN, TOTAL (MG/L AS NO3)

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TABLE 2.3-29 (Continued)

Sample Date	Parameter Value	Full Parameter Name and Units
12/1/1980	≤0.1	MERCURY, DISSOLVED (UG/L AS HG)
12/1/1980	≤0.1	MERCURY, TOTAL RECOVERABLE (UG/L AS HG)
12/1/1980	2.4	POTASSIUM 40 DISSOLVED (PCI /L AS K40)
12/1/1980	403	SPECIFIC CONDUCTANCE MICROSIEMENS/CM AT 25 DEG C
12/1/1980	100	ACID NEUTRALIZING CAPACITY (ANC), WATER, UNFILTERED, TITRATION TO pH 4.5, LABORATORY, MILLIGRAMS PER LITER AS CaCO ₃
12/1/1980	47	HARDNESS, NONCARBONATE, AS CaCO ₃ , MG/L

SOURCE:

USGS <http://waterdata.usgs.gov/nwis/gw> (Reference 42)

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TABLE 2.3-30

USGS WATER QUALITY SAMPLING DATA FOR THE MISSISSIPPI RIVER
AT MILE 402, STATION NO. 315847091072700

Sample Date	Parameter Value	Full Parameter Name and Units
11/21/96	11.5	TEMPERATURE, WATER (DEG. C)
11/21/96	750	BAROMETRIC PRESSURE (MM OF HG)
11/21/96	359	SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C)
11/21/96	9.9	OXYGEN DISSOLVED (MG/L)
11/21/96	7.7	pH, WATER, WHOLE, FIELD, STANDARD UNITS
11/21/96	74	ALPHA-BHC, D6-, SURROGATE, BIOTA, WHOLE ORGANISM, WET WEIGHT, RECOVERABLE, PERCENT
11/21/96	76	BIPHENYL, 3,5-DICHLORO- SURROGATE, BIOTA, WHOLE ORGANISM, WET WEIGHT, RECOVERABLE, PERCENT
11/21/96	18	LIPIDS, BIOTA, WHOLE ORGANISM, WET WEIGHT, RECOVERABLE, PERCENT
11/21/96	≤5	ALDRIN, BIOTA, WHOLE ORGANISM, WET WEIGHT, RECOVERABLE, MICROGRAMS PER KILOGRAM
11/21/96	160	PCB, BIOTA, WHOLE ORGANISM, WET WEIGHT, RECOVERABLE, MICROGRAMS PER KILOGRAM
11/21/96	≤200	TOXAPHENE, BIOTA, WHOLE ORGANISM, WET WEIGHT, RECOVERABLE, MICROGRAMS PER KILOGRAM
11/21/96	≤5	PENTACHLOROANISOLE, BIOTA, WHOLE ORGANISM, WET WEIGHT, RECOVERABLE, MICROGRAMS PER KILOGRAM
11/21/96	≤5	OXYCHLORDANE, BIOTA, WHOLE ORGANISM, WET WEIGHT, RECOVERABLE, MICROGRAMS PER KILOGRAM
11/21/96	≤10	TRANS-NONACHLOR, BIOTA, WHOLE ORGANISM, WET WEIGHT, RECOVERABLE, MICROGRAMS PER KILOGRAM
11/21/96	≤10	CIS-NONACHLOR, BIOTA, WHOLE ORGANISM, WET WEIGHT, RECOVERABLE, MICROGRAMS PER KILOGRAM
11/21/96	≤5	MIREX, BIOTA, WHOLE ORGANISM, WET WEIGHT, RECOVERABLE, MICROGRAMS PER KILOGRAM
11/21/96	≤10	METHOXYCHLOR, P,P'-, BIOTA, WHOLE ORGANISM, WET WEIGHT, RECOVERABLE, MICROGRAMS PER KILOGRAM
11/21/96	≤10	METHOXYCHLOR, O,P'-, BIOTA, WHOLE ORGANISM, WET WEIGHT, RECOVERABLE, MICROGRAMS PER KILOGRAM
11/21/96	≤5	LINDANE, BIOTA, WHOLE ORGANISM, WET WEIGHT, RECOVERABLE, MICROGRAMS PER KILOGRAM
11/21/96	≤5	DELTA-BHC, BIOTA, WHOLE ORGANISM, WET WEIGHT, RECOVERABLE, MICROGRAMS PER KILOGRAM
11/21/96	≤5	BETA-BHC BIOTA, WHOLE ORGANISM, WET WEIGHT, RECOVERABLE, MICROGRAMS PER KILOGRAM

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TABLE 2.3-30 (Continued)

Sample Date	Parameter Value	Full Parameter Name and Units
11/21/96	≤5	ALPHA-BHC, BIOTA, WHOLE ORGANISM, WET WEIGHT, RECOVERABLE, MICROGRAMS PER KILOGRAM
11/21/96	≤5	BENZENE, HEXACHLORO-, BIOTA, WHOLE ORGANISM, WET WEIGHT, RECOVERABLE, MICROGRAMS PER KILOGRAM
11/21/96	≤10	HEPTACHLOR EPOXIDE, BIOTA, WHOLE ORGANISM, WET WEIGHT, RECOVERABLE, MICROGRAMS PER KILOGRAM
11/21/96	≤5	HEPTACHLOR, BIOTA, WHOLE ORGANISM, WET WEIGHT, RECOVERABLE, MICROGRAMS PER KILOGRAM
11/21/96	≤5	ENDRIN, BIOTA, WHOLE ORGANISM, WET WEIGHT, RECOVERABLE, MICROGRAMS PER KILOGRAM
11/21/96	18	DIELDRIN, BIOTA, WHOLE ORGANISM, WET WEIGHT, RECOVERABLE, MICROGRAMS PER KILOGRAM
11/21/96	≤10	O,P'-DDE, BIOTA, WHOLE ORGANISM, WET WEIGHT, RECOVERABLE, MICROGRAMS PER KILOGRAM
11/21/96	≤5	O,P'-DDD, BIOTA, WHOLE ORGANISM, WET WEIGHT, RECOVERABLE, MICROGRAMS PER KILOGRAM
11/21/96	36	P,P'-DDD, BIOTA, WHOLE ORGANISM, WET WEIGHT, RECOVERABLE, MICROGRAMS PER KILOGRAM
11/21/96	≤10	P,P'-DDT, BIOTA, WHOLE ORGANISM, WET WEIGHT, RECOVERABLE, MICROGRAMS PER KILOGRAM
11/21/96	≤10	O,P'-DDT, BIOTA, WHOLE ORGANISM, WET WEIGHT, RECOVERABLE, MICROGRAMS PER KILOGRAM
11/21/96	≤5	DCPA, BIOTA, WHOLE ORGANISM, WET WEIGHT, RECOVERABLE, MICROGRAMS PER KILOGRAM
11/21/96	≤10	TRANS-CHLORDANE, BIOTA, WHOLE ORGANISM, WET WEIGHT, RECOVERABLE, MICROGRAMS PER KILOGRAM
11/21/96	≤10	CIS-CHLORDANE, BIOTA, WHOLE ORGANISM, WET WEIGHT, RECOVERABLE, MICROGRAMS PER KILOGRAM

SOURCE:

USGS <http://waterdata.usgs.gov/nwis/qw> (Reference 42)

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TABLE 2.3-31
(FER TABLE 2.4.15)

RESULTS OF CHEMICAL ANALYSIS OF WATER SAMPLES, 1972

	<u>A</u> ¹	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>	<u>H</u>	<u>J</u>	<u>K</u>	<u>L</u>
pH	7.9	7.2	8.3	7.6	8.0	7.3	7.4	7.1	7.8	7.6	7.2
Dissolved carbon dioxide, ppm	8.2	5.5	1.5	4.6	4.4	37.0	22.0	58.0	7.0	23.0	10.0
Conductivity, mhos/cm	640.0	250.0	480.0	75.0	375.0	490.0	450.0	460.0	325.0	430.0	210.0
Color, Co-Pt units	5.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Total solids, ppm	664.0	514.0	516.0	184.0	408.0	626.0	548.0	448.0	508.0	434.0	902.0
Suspended solids, ppm	60.0	88.0	56.0	106.0	50.0	154.0	98.0	6.0	192.0	22.0	625.0
Dissolved solids, ppm	604.0	426.0	460.0	78.0	358.0	472.0	450.0	442.0	316.0	412.0	277.0
Total hardness as CaCo3, ppm	285.1	275.3	4.0	20.2	290.4	443.3	405.7	350.8	141.9	326.8	208.0
Calcium, ppm	66.2	64.3	0.8	3.3	70.7	99.2	92.4	68.5	30.8	62.8	-
Magnesium, ppm	29.0	27.8	0.5	2.9	28.5	47.4	42.4	43.6	15.8	41.2	-
Alkalinity as CaCo3, ppm PP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(MO)	596.0	372.0	368.0	30.0	326.0	445.0	401.0	371.0	114.0	337.0	210.0
Silica, ppm	17.5	16.5	12.4	17.1	17.5	22.5	22.5	22.5	7.0	22.5	17.5
Chlorides, ppm	9.8	6.8	18.0	5.5	4.8	3.5	5.5	5.5	18.0	5.5	9.0
Sulfates, ppm	2.1	5.3	3.7	8.2	2.5	<0.1	<0.1	<0.1	45.7	<0.1	22.6
Nitrates, ppm	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.1	0.3
Iron, ppm	<0.3	<0.3	<0.3	3.6	<0.3	<0.3	<0.3	<0.02		<0.02	<0.020
Manganese, ppm	0.44	0.22	<0.013	0.013	0.019	3.4	<0.05	<0.009		<0.009	<0.009
Potassium, ppm	5.9	5.9	7.4	1.5	3.6	1.6	2.0	1.46	3.69	1.79	1.8
Sodium, ppm	94.2	44.2	158.0	7.1	11.9	6.6	7.2	12.3	19.5	8.2	15.5
Lead, ppm	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.009		<0.009	<0.009
Zinc, ppm	0.19	0.32	<0.05	0.6	0.23	1.0	0.5	<0.020		<0.020	<0.020
Copper, ppm	<0.01	<0.01	<0.01	<0.01	<0.01	-	0.0	<0.020		<0.020	<0.020

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TABLE 2.3-31 (Continued)

	<u>A</u> ¹	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>	<u>H</u>	<u>J</u>	<u>K</u>	<u>L</u>
Aluminum, ppm	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.009		<0.009	<0.009
Coliform	-	-	-	-	-	Negative	Negative	-	-	-	-
Arsenic, ppm	0.009	0.009	0.003	0.009	0.001	-	-	0.005		0.009	0.004
Chromium, ppm	-	-	-	-	-	<0.005	-	<0.009		<0.009	<0.009
Fluoride, ppm	-	-	0.10	0.10	0.10	-	-	0.10	0.10	0.10	0.10

Sample Identification and Date of Sample Collection:

A - Well 6²; Mississippi River Alluvium, 2/9/72
 B - Well 31; Pleistocene Terrace Deposits, 2/10/72
 C - Well 4; Catahoula Formation 2/10/72
 D - Bayou Pierre (surface water), 2/9/72
 E - Well 1; Mississippi River Alluvium 2/9/72
 F – P11; Mississippi River Alluvium 5/3/72
 G - OW4; Mississippi River Alluvium 5/3/72
 H - Test Water Well 1; Pleistocene Terrace Deposits, 6/30/72
 J - Mississippi River (surface water), 6/29/72
 K - Piezometer P34 (El. +55); Pleistocene Terrace Deposits, 5/24/72
 L – OW118; Pleistocene Terrace Deposits, 10/10/72

NOTES:

1. Sample locations shown on Figure 2.3-6
2. Well data contained in Tables 2.3-17 and 2.3-18

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TABLE 2.3-32

USGS GROUND WATER QUALITY SAMPLING DATA

Catahoula Formation

USGS WELL ID	APPROX. DISTANCE AND DIRECTION FROM GGNS	DEPTH OF WELL (FT BELOW LAND SURFACE)	SAMPLE DATE	TEMP. ° C	COLOR (PLATINUM-COBALT UNITS)	SPECIFIC CONDUCTANCE (μS/CM)	pH	DISSOLVED CARBON DIOXIDE (MG/L AS CO ₂)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO ₄)	HARDNESS TOTAL (MG/L AS CaCO ₃)	DISSOLVED CALCIUM (MG/L AS Ca)	DISSOLVED MAGNESIUM (MG/L AS Mg)	DISSOLVED SODIUM, (MG/L AS Na)	DISSOLVED CHLORIDE (MG/L AS Cl)	DISSOLVED SULFATE (MG/L AS SO ₄)	DISSOLVED FLUORIDE (MG/L AS F)	DISSOLVED SILICA (MG/L AS SiO ₂)	IRON (MG/L AS Fe)
L004 Port Gibson	6 mi. southeast	177	2/13/61				7.3	3.9			3.00	1.10	125	8.0	9.7	0.3	17.0	100
L079 Port Gibson	6 mi. southeast	170	4/20/89	20		498	6.8											
L003 Port Gibson	6 mi. southeast	153	3/22/61	20	20	523	7.4		0.200	52	12.0	5.40	101	8.3	0.6	0.2	56.0	160
F003 Port Gibson	6 mi. southeast	206	11/3/61	20		557	8.0			15	4.7	0.8	136	17.0	3.0	0.8	49.0	50
L062 Port Gibson	6 mi. southeast	300	6/29/79	20.5	3	265	6.2	141		98	23.0	9.8	13	5.3	12.0	0.1	56.0	560

Mississippi River Alluvial Aquifer

USGS WELL ID	APPROX. DISTANCE AND DIRECTION FROM GGNS	SAMPLE DATE	TEMP. ° C	DEPTH OF WELL, TOTAL (FEET)	COLOR (PLATINUM-COBALT UNITS)	SPECIFIC CONDUCTANCE (μS /CM)	pH	DISSOLVED CARBON DIOXIDE (MG/L AS CO ₂)	TOTAL HARDNESS (MG/L AS CaCO ₃)	DISSOLVED CALCIUM (MG/L AS Ca)	DISSOLVED MAGNESIUM (MG/L AS Mg)	DISSOLVED SODIUM, (MG/L AS Na)	DISSOLVED CHLORIDE (MG/L AS Cl)	DISSOLVED SULFATE (MG/L AS SO ₄)	DISSOLVED FLUORIDE (MG/L AS F)	DISSOLVED SILICA (MG/L AS SiO ₂)	IRON (MG/L AS Fe)
E002 MP&L	On-site	11/17/77	20.0		20	673	7.2	36	270	71.0	23.0	39.0	29.0	21.0	0.4	30.0	12000
E019 Vicksburg No. 11	25 mi. north	2/5/86	18.5		15	520	7.4			64.0	20.0	18.0	10.0	5.8	0.3	33.0	7100
E023 Warren 0	25 mi. north	4/20/89	18.5	122		525	7.1										

SOURCE:
USGS <http://waterdata.usgs.gov/ms/nwis> (Reference 42)

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TABLE 2.3-33

MISSISSIPPI RIVER AND RADIAL WELL WATER QUALITY AT GGNS

Sample Date	Sample Location	Temperature (°F)	pH	Specific Conductance μ mhos/cm	Total Dissolved Solids	Total Alkalinity (as CaCO_3) mg/l	Sulfate (SO_4) mg/l	Chloride (as Cl) mg/l	Total Hardness mg/l	Total Iron (as Fe) mg/l	Sand Content mg/l
1/19/88	River	45.5	7.58	348.3	348.0	96	36	15	132	3.3	NA
4/9/88		60.8	7.30	394.7	394.7	106	52	25	123	3.1	NA
7/12/88		84.6	8.04	547.0	547.0	146	128	83	164	1.21	NA
1/19/88	Radial Well No. 1	59.9	7.20	505.6	506.0	140	46	22	175	2.5	<5
4/9/88		54.5	7.22	461.9	461.9	136	56	44	140	2.5	<0.5
7/12/88		70.8	7.24	512.3	512.3	148	90	189	146	1.97	<10
1/19/88	Radial Well No. 3	64.4	7.18	541.5	542.0	142	61	24	185	1.8	<5
4/9/88		54.5	7.11	478.1	478.1	146	49	58	147	2.6	<0.5
7/12/88		70.2	7.15	556.5	556.5	162	56	49	158	2.96	<10
1/19/88	Radial Well No. 4	59.9	7.04	550.6	551.0	174	50	18	223	3.0	<5
4/9/88		52.7	7.16	468.9	468.9	148	51	35	144	2.4	<0.5
7/12/88		72.8	7.19	547.7	547.7	160	74	132	164	2.78	<10
1/19/88	Radial Well No. 5	61.7	7.18	520.2	520.0	150	62	24	190	1.8	<5
4/9/88		56.3	7.05	538.0	538.0	142	46	43	155	0.76	<0.5
7/12/88		70.0	7.16	557.9	557.9	158	72	59	166	2.52	<10

SOURCE:

Hydro Group, Ranney Division, "Annual Report, Collector Well Performance, PSW Wells 1, 3, 4, and 5," February, 1989. (Reference 46)

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TABLE 2.3-34

CHEMICAL ANALYSIS OF WATER SAMPLES, THREE POTABLE WELLS LOCATED AT THE
GGNS SITE PROPOSED POWER BLOCK LOCATION

Well Number Date Sampled	110011-01, MS-GW-02967 2/9/99	110011-03, MS-GW-14989 3/13/00	110011-04, MS-GW-15026 2/21/02
pH (lab)	8.2	7.1	7.1
Alkalinity (P) as CaCO ₃	0 mg/l	0 mg/l	0 mg/l
Alkalinity (T) as CaCO ₃	451.0 mg/l	400.0 mg/l	380.0 mg/l
Aluminum as AL			0.003 mg/l
Chloride	49.9 mg/l	19.8 mg/l	13.4 mg/l
Sulfate		8.1 mg/l	48.0 mg/l
Fluoride		0.3 mg/l	0.4 mg/l
Free Carbon Dioxide	6.0 mg/l	110.0 mg/l	66.0 mg/l
Iron (lab)	<0.1 mg/l	<0.1 mg/l	<0.1 mg/l
Magnesium	5.4 mg/l	39.4 mg/l	40.8 mg/l
Manganese	0.003 mg/l	0.001 mg/l	0.002 mg/l
Calcium	12.4 mg/l	96.9 mg/l	87.0 mg/l
Sodium		13.5 mg/l	16.3 mg/l
Potassium		1.6 mg/l	1.2 mg/l
Total Dissolved Residue		420.0 mg/l	435.0 mg/l
Ca + Mg Hardness as CaCO ₃	53.0 mg/l	404.0 mg/l	385.0 mg/l
Zinc			0.021 mg/l

NOTES:

1. pH value has no units, other values reported in milligrams per liter (mg/l)

SOURCE:

GGNS data, 2002

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TABLE 2.4-1

COMMON FOREST OVERSTORY AND UNDERSTORY VEGETATION ON THE GGNS SITE, 1972-1973

Summer 1972	Forest Overstory		Understory Vegetation	
Bottomland	Total Number of Taxa Recorded: 27	Common Species	Common Species	
		Sugarberry (<i>Celtis laevigata</i>) Pecans (<i>Carya spp.</i>) Green ash (<i>Fraxinus pennsylvanica</i>) Black willow (<i>Salix nigra</i>) Swamp privet (<i>Forestiera acuminata</i>) Box elder (<i>Acer negundo</i>)	Total Number of Taxa Recorded: 97	Asters (<i>Aster spp.</i>) Buckvine (<i>Ampelopsis arborea</i>) Dewberries (<i>Rubus spp.</i>) Grasses (<i>Poaceae</i>) Sugarberry (<i>Celtis laevigata</i>) Poison ivy (<i>Rhus radicans</i>) False nettle (<i>Boehmeria cylindrica</i>) Johnson grass (<i>Sorghum halepense</i>) Trumpet creeper (<i>Campsis radicans</i>) Ladies eardrops (<i>Brunnichia cirrhosa</i>)
Bluff	Total Number of Taxa Recorded: 46	Common Species	Common Species	
		Sweetgum (<i>Liquidambar styraciflua</i>) Water oak (<i>Quercus nigra</i>) Southern red oak (<i>Quercus falcata</i>) American elm (<i>Ulmus americana</i>) Hickories (<i>Carya spp.</i>)	Total Number of Taxa Recorded: 114	Switchcane (<i>Arundinaria tecta</i>) Grasses (<i>Poaceae</i>) Poison ivy (<i>Rhus radicans</i>) Japanese honeysuckle (<i>Lonicera japonica</i>) Winged elm (<i>Ulmus alata</i>) Sedges (<i>Carex spp.</i> , <i>Cyperus spp.</i>) Oaks (<i>Quercus spp.</i>) Asters (<i>Aster spp.</i>) Rattan (<i>Berchemia scandens</i>) Green briars (<i>Smilax spp.</i>)
Winter 1973	Forest Overstory		Understory Vegetation	
Bottomland	Total Number of Taxa Recorded: 27	Common Species	Common Species	
		Sugarberry (<i>Celtis laevigata</i>) Pecans (<i>Carya spp.</i>) Green ash (<i>Fraxinus pennsylvanica</i>) Black willow (<i>Salix nigra</i>) Swamp privet (<i>Forestiera acuminata</i>) Box elder (<i>Acer negundo</i>)	Total Number of Taxa Recorded: 48	Asters (<i>Aster spp.</i>) Dewberries (<i>Rubus spp.</i>) Grasses (<i>Poaceae</i>) Nemophila (<i>Nemophila microcalyx</i>) Sedges (<i>Carex spp.</i> , <i>Cyperus spp.</i>) Daisy fleabane (<i>Erigeron spp.</i>) Vetches (<i>Vicia spp.</i>) Violets (<i>Viola spp.</i>) Chickweed (<i>Stellaria spp.</i>) Bedstraw (<i>Galium spp.</i>)

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TABLE 2.4-1 (Continued)

Bluff	Total Number of Taxa Recorded: 46	Common Species	Total Number of Taxa Recorded: 60	Common Species	
		Sweetgum (<i>Liquidambar styraciflua</i>) Water oak (<i>Quercus nigra</i>) Southern red oak (<i>Quercus falcata</i>) American elm (<i>Ulmus americana</i>) Hickories (<i>Carya</i> spp.)		Switchcane (<i>Arundinaria tecta</i>) Japanese honeysuckle (<i>Lonicera japonica</i>) Grasses (<i>Poaceae</i>) Sedges (<i>Carex</i> spp., <i>Cyperus</i> spp.) Asters (<i>Aster</i> spp.)	Nemophila (<i>Nemophila microcalyx</i>) Oaks (<i>Quercus</i> spp.) Haircap moss (<i>Family Musci</i>) Crossvine (<i>Bignonia capreolata</i>) Violet (<i>Viola</i> spp.)
Spring 1973	Forest Overstory		Understory Vegetation		
Bottomland	Total Number of Taxa Recorded: 27	Common Species	No sampling could be conducted in the bottomlands due to flooding.	Common Species	
		Sugarberry (<i>Celtis laevigata</i>) Pecans (<i>Carya</i> spp.) Green ash (<i>Fraxinus pennsylvanica</i>) Black willow (<i>Salix nigra</i>) Swamp privet (<i>Forestiera acuminata</i>) Box elder (<i>Acer negundo</i>)			
Bluff	Total Number of Taxa Recorded: 46	Common Species	Total Number of Taxa Recorded: 148	Common Species	
		Sweetgum (<i>Liquidambar styraciflua</i>) Water oak (<i>Quercus nigra</i>) Southern red oak (<i>Quercus falcata</i>) American elm (<i>Ulmus americana</i>) Hickories (<i>Carya</i> spp.)		Poison ivy (<i>Rhus radicans</i>) Switchcane (<i>Arundinaria tecta</i>) Japanese honeysuckle (<i>Lonicera japonica</i>) Grasses (<i>Poaceae</i>) Spreading bladder fern (<i>Cystopteris fragilis</i>)	Sedges (<i>Carex</i> spp., <i>Cyperus</i> spp.) Winged elm (<i>Ulmus alata</i>) Virginia creeper (<i>Parthenocissus quinquefolia</i>) Rattan (<i>Berchemia scandens</i>) Oaks (<i>Quercus</i> spp.)

SOURCE: Mississippi Power and Light Company, Grand Gulf Nuclear Station Units 1 and 2, Final Environmental Report (FER), as amended through Amendment No. 8

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TABLE 2.4-2

MAMMALS COLLECTED OR OBSERVED AT THE GGNS SITE, 1972 - 1973

Small Mammals		Larger Mammals	
Common Name	Scientific Name	Common Name	Scientific Name
White-footed mouse	<i>Peromyscus leucopus</i>	Eastern chipmunk	<i>Tamias striatus</i>
Cotton mouse	<i>Peromyscus gossypinus</i>	Gray squirrel	<i>Sciurus carolinensis</i>
House mouse	<i>Mus musculus</i>	Fox squirrel	<i>Sciurus niger</i>
Fulvous harvest mouse	<i>Reithrodontomys fulvescens</i>	Cottontail rabbit	<i>Sylvilagus floridanus</i>
Golden mouse	<i>Ochrotomys noutalli</i>	Swamp rabbit	<i>Sylvilagus aquaticus</i>
Pine vole	<i>Pityms pinetorium</i>	Beaver	<i>Castor canadensis</i>
Shorttail shrew	<i>Blarina brevicauda</i>	Raccoon	<i>Procyon lotor</i>
Least shrew	<i>Cryptotis parva</i>	Opposum	<i>Didelphis marsupialis</i>
Hispid cotton rat	<i>Sigmodon hispidus</i>	Armadillo	<i>Dasypus novemcinctus</i>
Rice rat	<i>Oryzomys palustris</i>	Striped skunk	<i>Mephitis mephitis</i>
		Gray fox	<i>Urocyon cinereoargenteus</i>
		Red fox	<i>Vulpes fulva</i>
		Bobcat	<i>Lynx rufus</i>
		Whitetail deer	<i>Odocoileus virginianus</i>

SOURCE:

Mississippi Power and Light Company, Grand Gulf Nuclear Station Units 1 and 2, Final Environmental Report (FER), as amended through Amendment No. 8

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TABLE 2.4-3

COMMON BIRDS OF THE FOREST AND FIELD-FOREST COMMUNITIES OBSERVED SEASONALLY AT THE GGNS SITE, 1972-1973

Forest Community					
Year Round Residents		Summer Residents		Winter Residents	
Common Name	Scientific Name	Common Name	Scientific Name	Common Name	Scientific Name
Cardinal	<i>Cardinalis cardinalis</i>	White-eyed vireo	<i>Vireo olivaceus</i>	White-throated Sparrow	<i>Zonotrichia albicollis</i>
Carolina wren	<i>Thryothorus ludovicianus</i>	Red-eyed vireo	<i>Vireo griseus</i>	Robin	<i>Turdus migratorius</i>
Carolina Chickadee	<i>Parus carolinensis</i>	Parula Warbler	<i>Parula americana</i>	Yellow-shafted Flicker	<i>Colaptes auratus</i>
Blue Jay	<i>Cyanocitta cristata</i>	Hooded Warble	<i>Wilsonia citrina</i>	Ruby-crowned Kinglet	<i>Regulus calendula</i>
Rufous-sided Towhee	<i>Pipilo erythrophthalmus</i>	Prothonotary Warbler	<i>Protonotaria citrea</i>	Myrtle warbler	<i>Dendroica coronata</i>
Red-bellied Woodpecker	<i>Centurus carolinus</i>	Worm-eating Warbler	<i>Helmitheros vermivorus</i>	Yellow-bellied Sapsucker	<i>Sphvrpicus varius</i>
Tufted Titmouse	(<i>Parus bicolor</i>	Acadian Flycatcher	<i>Empidonax virescens</i>		
Brown Thrasher	<i>Taxostoma rufum</i>	Indigo Bunting	<i>Passerina cyanea</i>		
		Yellow-billed Cuckoo	<i>Coccyzus americanus</i>		
Field-Forest Community					
Year Round Residents		Summer Residents		Winter Residents	
Common Name	Scientific Name	Common Name	Scientific Name	Common Name	Scientific Name
Mourning Dove	<i>Zenaidura macroura</i>	Indigo Bunting	<i>Passerina cyanea</i>	White-throated Sparrow	<i>Zonotrichia albicollis</i>
Bobwhite	<i>Colinus virginianus</i>	Painted Bunting	<i>Passerine ciris</i>	Fox Sparrow	<i>Passerella iliaca</i>
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	Yellow-breasted Chat	<i>Icteria virens</i>	Lark Sparrow	<i>Chondestes grammacus</i>
Mocking Bird	<i>Mimus polyglottos</i>	Yellowthroat	<i>Geothlypis thrichas</i>	Field Sparrow	<i>Spizella pusilla</i>
Loggerhead Shrike	<i>Lanius ludovicianus</i>	Rough-winged Swallow	<i>Stelgidopteryx ruficollis</i>		
		Orchard Oriole	<i>Icterus spurius</i>		

SOURCE:

Mississippi Power and Light Company, Grand Gulf Nuclear Station Units 1 and 2, Final Environmental Report (FER), as amended through Amendment No. 8

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TABLE 2.4-4

BIRDS OBSERVED ON HAMILTON AND/OR GIN LAKES, 1972 - 1973

Water Birds		Water Fowl	
Common Name	Scientific Name	Common Name	Scientific Name
Anhinga	<i>Anhinga anhinga</i>	Wood duck	<i>Aix sponsa</i>
Great blue heron	<i>Ardea herodias</i>	Mallard	<i>Anas platyrhynchos</i>
Little blue heron	<i>Florida caerulea</i>	Canvasback	<i>Aythya valisineria</i>
Green heron	<i>Butorides virescens</i>	Gadwall	<i>Anas strepera</i>
Louisiana heron	<i>Hydranassa tricolor</i>	Pintail	<i>Anas acuta</i>
Cattle egret	<i>Bubulcus ibis</i>	Blue-winged teal	<i>Anas discors</i>
Common egret	<i>Casmerodius albus</i>	Green-winged teal	<i>Anas carolinensis</i>
White ibis	<i>Eudocimus albus)</i>		
Wood ibis	<i>Mvcteria amxana</i>		
American coot	<i>Fulica americana</i>		
Pied-billed grebe	<i>Podilymbus podiceps</i>		
Belted kingfisher	<i>Megaceryle alcyon</i>		

SOURCE:

Mississippi Power and Light Company, Grand Gulf Nuclear Station Units 1 and 2, Final Environmental Report (FER), as amended through Amendment No. 8

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TABLE 2.4-5

BIRDS OF SPECIAL INTEREST OBSERVED ON
OR NEAR THE GGNS SITE, 1972 - 1973

Vultures, Hawks, and Falcons

Common Name	Scientific Name
Black vulture	<i>Coragyps atratus</i>
Turkey vulture	<i>Carthartes aura</i>
Red-tailed hawk	<i>Buteo jamaicensis</i>
Red-shouldered hawk	<i>Buteo lineatus</i>
Broad-winged hawk	<i>Buteo platypterus</i>
American kestrel	<i>Falco sparverius</i>
Marsh hawk	<i>Circus cyaneus</i>
Sharp-shinned hawk	<i>Accipiter striatus</i>
Mississippi kite	<i>Ictinia mississippiensis</i>

Owls

Common Name	Scientific Name
Great horned	<i>Bubo Virginianus</i>
Screech owl	<i>Otus asio</i>
Barn owl	<i>Tyto alba</i>
Barred owl	<i>Strix varia</i>

Upland Game Birds

Common Name	Scientific Name
Woodcock	<i>Philohela minor</i>
Mourning dove	<i>Zenaidura macroura</i>
Bobwhite	<i>Colinus virginianus</i>
Wild turkey	<i>Meleagris gallopavo</i>

SOURCE:

Mississippi Power and Light Company, Grand Gulf Nuclear Station Units 1 and 2,
Final Environmental Report (FER), as amended through Amendment No. 8

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TABLE 2.4-6

TERRESTRIAL SPECIES OF SPECIAL INTEREST POTENTIALLY OCCURRING AT GGNS

Common Name	Scientific Name	Federal Status	State Listing	State Status
Louisiana black bear	<i>Ursus americanus luteolus</i>	Threatened	MS	Critically imperiled
Florida panther	<i>Puma concolor coryi</i>	Endangered	MS	Historically occurred
Bald eagle	<i>Haliaeetus leucocephalus</i>	Threatened	LA	Endangered
Interior least tern	<i>Sterna antillarum</i>	Endangered	LA	Endangered
White ibis	<i>Eudocimus albus</i>		MS	Rare or uncommon
Wood stork	<i>Mycteria americana</i>		MS	Endangered
Mississippi map turtle	<i>Graptemys pseudogeographica kohni</i>		MS	Secure
Webster's salamander	<i>Plethodon websteri</i>		MS	Rare or uncommon
Monkeyflower	<i>Mimulus ringens</i>		LA	

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TABLE 2.4-7

COMMON FISH OBSERVED AT OR NEAR GGNS, 1972 - 1973

Common Name	Scientific Name	Water Body Reported In				
		Mississippi River	Big Black River	Hamilton & Gin Lakes	Streams A and B	Stock Ponds
Paddlefish	<i>Polyodon spathula</i>			X		
Gizzard shad	<i>Dorosoma cepedianum</i>	X	X	X		
Blue catfish	<i>Ictalurus furcatus</i>	X	X			
River carpsucker	<i>Carpionodes carpio</i>	X	X			
Freshwater drum	<i>Aplodinotus grunniens</i>	X	X			
Shovelnose sturgeon	<i>Scaphirhynchus platyrhynchus</i>	X				
White crappie	<i>Pomoxis annularis</i>		X			
Black crappie	<i>Pomoxis nigromaculatus</i>		X			
Silver chub	<i>Hybopsis storeriana</i>					
Flathead catfish	<i>Pylodictis olivaris</i>		X			
Shortnose gar	<i>Lepisosteus platostomus</i>		X			
Smallmouth buffalo	<i>Ictiobus bubalus</i>		X			
Channel Catfish	<i>Ictalurus punctatus</i>					X
Threadfin shad	<i>Dorosoma petenense</i>	X				
Emerald shiner	<i>Notropis atherinoides</i>	X				
River Shiner	<i>Notropis blennioides</i>	X				
Silvery minnow	<i>Hybognathus nuchalis</i>	X				
Mosquitofish	<i>Gambusia affinis</i>	X				X

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TABLE 2.4-7 (Continued)

Common Name	Scientific Name	Water Body Reported In				
		Mississippi River	Big Black River	Hamilton & Gin Lakes	Streams A and B	Stock Ponds
Mississippi silverside	<i>Medidia audens</i>	X				
Skipjack herring	<i>Alosa chrysochloris</i>	X		X		
White bass	<i>Morone chrysops</i>	X		X		
Largemouth Bass	<i>Micropterus salmoides</i>	X		X		
Bluegill sunfish	<i>Lepomis macrochirus</i>			X		X
Bluntnose minnow	<i>Pimephales notatus</i>			X	X	
Green sunfish	<i>Lepomis cyanellus</i>				X	
Longear sunfish	<i>Lepomis megalotis</i>				X	
Warmouth	<i>Lepomis gulosus</i>				X	

SOURCE:

Mississippi Power and Light Company, Grand Gulf Nuclear Station Units 1 and 2, Final Environmental Report (FER), as amended through Amendment No. 8

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TABLE 2.4-8

AQUATIC SPECIES OF SPECIAL INTEREST POTENTIALLY OCCURRING AT GGNS

Common Name	Scientific Name	Federal Status	State Listing	State Status
Paddlefish	<i>Polyodon spathula</i>		MS LA	Rare or uncommon Same
Pallid sturgeon	<i>Scaphirhynchus albus</i>	Endangered	MS LA	Critically imperiled Endangered
Chestnut lamprey	<i>Ichthyomyzon castaneus</i>		MS	Rare or uncommon
Gulf sturgeon	<i>Acipenser oxyrinchus desotoi</i>	Threatened		
Bayou darter	<i>Etheostoma rubrum</i>		MS	Rare or uncommon
Blue sucker	<i>Cycleptus elongates</i>		MS	Rare or uncommon
Black buffalo	<i>Ictiobus niger</i>		MS	Rare or uncommon
Crystal darter	<i>Crystallaria asprella</i>		MS	Critically imperiled

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TABLE 2.5-1
PROJECTED POPULATION DISTRIBUTION, 0-10 MILES

Sector/Year	0-1	1-2	2-3	3-4	4-5	5-10	Total
NORTH							
2002	0	3	0	0	0	10	13
2030	0	3	0	0	0	10	13
2040	0	3	0	0	0	10	13
2050	0	3	0	0	0	10	13
2060	0	3	0	0	0	10	13
2070	0	3	0	0	0	10	13
N-NE							
2002	0	11	0	0	0	3	14
2030	0	11	0	0	0	3	14
2040	0	11	0	0	0	3	14
2050	0	11	0	0	0	3	14
2060	0	11	0	0	0	3	14
2070	0	11	0	0	0	3	14
NE							
2002	0	0	0	0	29	3	32
2030	0	0	0	0	31	3	34
2040	0	0	0	0	32	3	35
2050	0	0	0	0	33	3	36
2060	0	0	0	0	34	3	37
2070	0	0	0	0	34	4	38
E-NE							
2002	0	14	0	45	27	102	188
2030	0	15	0	48	29	110	202
2040	0	15	0	50	30	112	207
2050	0	16	0	51	30	115	212
2060	0	16	0	52	31	118	218
2070	0	17	0	53	32	121	223
EAST							
2002	0	17	0	84	68	173	342
2030	0	18	0	90	73	186	368
2040	0	19	0	93	75	191	377
2050	0	19	0	95	77	195	386
2060	0	20	0	97	79	200	396
2070	0	20	0	100	81	205	406
E-SE							
2002	0	0	0	0	0	851	851
2030	0	0	0	0	0	915	915
2040	0	0	0	0	0	938	938
2050	0	0	0	0	0	961	961
2060	0	0	0	0	0	985	985
2070	0	0	0	0	0	1,010	1,010

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TABLE 2.5-1 (Continued)

Sector/Year	0-1	1-2	2-3	3-4	4-5	5-10	Total
SE							
2002	0	0	10	0	212	3,312	3,534
2030	0	0	11	0	228	3,560	3,799
2040	0	0	11	0	234	3,649	3,894
2050	0	0	11	0	239	3,741	3,991
2060	0	0	12	0	245	3,834	4,091
2070	0	0	12	0	252	3,930	4,193
S-SE							
2002	0	6	8	0	42	513	569
2030	0	6	9	0	45	551	612
2040	0	7	9	0	46	565	627
2050	0	7	9	0	47	579	643
2060	0	7	9	0	49	594	659
2070	0	7	9	0	50	609	675
SOUTH							
2002	0	0	4	0	0	96	100
2030	0	0	4	0	0	99	103
2040	0	0	4	0	0	100	104
2050	0	0	4	0	0	101	105
2060	0	0	4	0	0	102	106
2070	0	0	4	0	0	103	107
S-SW							
2002	0	0	0	0	0	1,362	1,362
2030	0	0	0	0	0	1,464	1,464
2040	0	0	0	0	0	1,501	1,501
2050	0	0	0	0	0	1,538	1,538
2060	0	0	0	0	0	1,577	1,577
2070	0	0	0	0	0	1,616	1,616
SW							
2002	0	0	0	0	0	6	6
2030	0	0	0	0	0	6	6
2040	0	0	0	0	0	7	7
2050	0	0	0	0	0	7	7
2060	0	0	0	0	0	7	7
2070	0	0	0	0	0	7	7
W-SW							
2002	0	0	0	0	0	98	98
2030	0	0	0	0	0	101	101
2040	0	0	0	0	0	102	102
2050	0	0	0	0	0	103	103
2060	0	0	0	0	0	104	104
2070	0	0	0	0	0	105	105

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TABLE 2.5-1 (Continued)

Sector/Year	0-1	1-2	2-3	3-4	4-5	5-10	Total
WEST							
2002	0	0	0	0	0	101	101
2030	0	0	0	0	0	104	104
2040	0	0	0	0	0	105	105
2050	0	0	0	0	0	106	106
2060	0	0	0	0	0	107	107
2070	0	0	0	0	0	108	108
W-NW							
2002	0	0	0	0	0	6	6
2030	0	0	0	0	0	6	6
2040	0	0	0	0	0	6	6
2050	0	0	0	0	0	6	6
2060	0	0	0	0	0	6	6
2070	0	0	0	0	0	6	6
NW							
2002	0	0	0	0	0	35	35
2030	0	0	0	0	0	35	35
2040	0	0	0	0	0	35	35
2050	0	0	0	0	0	35	35
2060	0	0	0	0	0	35	35
2070	0	0	0	0	0	35	35
N-NW							
2002	0	0	0	0	0	0	0
2030	0	0	0	0	0	0	0
2040	0	0	0	0	0	0	0
2050	0	0	0	0	0	0	0
2060	0	0	0	0	0	0	0
2070	0	0	0	0	0	0	0
Grand Totals							
2002	0	51	22	129	378	6,671	7,251
2030	0	54	23	139	406	7,154	7,776
2040	0	55	24	142	417	7,327	7,964
2050	0	56	25	146	427	7,504	8,157
2060	0	57	25	149	438	7,686	8,355
2070	0	58	26	153	449	7,872	8,557

SOURCE: References 1, 3 and 4

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TABLE 2.5-2

AGE AND SEX DISTRIBUTION IN REGION SURROUNDING GGNS

Population Parameter	Low Population Zone*	Emergency Planning Zone*	Region*
Male	46.1%	48.1%	48%
Female	53.9%	51.9%	52%
Age			
Less than 5 years	8.2%	6.9%	7%
5-9 years	9.0%	7.6%	7.6%
10-14 years	9.3%	7.6%	7.9%
15-19 years	9.3%	7.6%	7.9%
20-24 years	6.8%	12.5%	7.1%
25-34 years	10.9%	10.9%	12.3%
35-44 years	15.2%	13.8%	15.3%
45-54 years	13.5%	11.8%	13.2%
55-59 years	4.1%	4.8%	4.7%
60-64 years	3.6%	4.3%	4.1%
65 years and over	10.1%	12.2%	12.9%
Total	100%	100%	100%

SOURCE: Reference 1

NOTES:

* Units: Census block group.

1. Low population zone (LPZ) is defined as the area located within a two-mile radius of the GGNS Unit 1 reactor containment.
2. Plume exposure emergency planning zone (EPZ) is a modified 10-mile radius area surrounding the GGNS site. Consistent with the GGNS Unit 1 Emergency Plan, the 10-mile radius is extended to an approximate 14-mile radius to the northwest, west, and southwest of the GGNS site to include the towns of Newellton and St. Joseph, LA. Figure 2.5-10 illustrates the boundary of the GGNS Unit 1 EPZ.
3. Region is defined as the area located within a 50-mile radius of the GGNS site.

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TABLE 2.5-3

RACIAL AND ETHNIC DISTRIBUTION WITHIN THE LPZ, EPZ, AND REGION
SURROUNDING THE GGNS SITE

Ethnicity	Low Population Zone*	Emergency Planning Zone*	Region*
African American	77.5%	63.3%	45.1%
Asian	0	0	0.4%
Hawaiian	0	0	0
Hispanic	0.8%	1.3%	1.0%
Native American	0	0	0
Caucasian	21.7%	35.8%	54%

SOURCE: Reference 1

NOTES:

* Units: Census block group.

1. Low population zone (LPZ) is defined as the area located within a two-mile radius of the GGNS Unit 1 reactor containment.
2. Plume exposure emergency planning zone (EPZ) is a modified 10-mile radius area surrounding the GGNS site. Consistent with the GGNS Unit 1 Emergency Plan, the 10-mile radius is extended to an approximate 14-mile radius to the northwest, west, and southwest of the GGNS site to include the towns of Newellton and St. Joseph, LA. Figure 2.5-10 illustrates the boundary of the GGNS Unit 1 EPZ.
3. Region is defined as the area located within a 50-mile radius of the GGNS site.

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TABLE 2.5-4
INCOME DISTRIBUTION IN REGION SURROUNDING GGNS

Income	Low Population Zone*	Emergency Planning Zone*	Region*
Less than \$10,000	26.6%	16.6%	15.8%
\$10,000 to \$14,999	10.6%	9.8%	8.7%
\$15,000 to \$19,999	8.4%	8.2%	7.7%
\$20,000 to \$24,999	7.8%	7.3%	7.6%
\$25,000 to \$29,999	5.8%	6.6%	6.9%
\$30,000 to \$34,999	8.2%	6.4%	6.7%
\$35,000 to \$39,999	5.1%	6.0%	5.8%
\$40,000 to \$49,000	4.4%	5.0%	5.5%
\$45,000 to \$49,999	3.3%	7.7%	4.5%
\$50,000 to \$59,999	4.8%	6.9%	7.7%
\$60,000 to \$74,999	5.0%	6.4%	8.4%
\$75,000 to \$99,999	4.8%	6.8%	7.4%
\$100,000 to \$124,999	2.7%	3.3%	3.2%
\$125,000 to \$149,999	1.4%	1.2%	1.4%
\$150,000 to \$199,999	0.1%	0.8%	1.2%
\$200,000 >	1.0%	1.0%	1.5%

SOURCE: Reference 1

NOTES:

* Units: County Data

1. Low population zone (LPZ) is defined as the area located within a two-mile radius of the GGNS Unit 1 reactor containment.
2. Plume exposure emergency planning zone (EPZ) is a modified 10-mile radius area surrounding the GGNS site. Consistent with the GGNS Unit 1 Emergency Plan, the 10-mile radius is extended to an approximate 14-mile radius to the northwest, west, and southwest of the GGNS site to include the towns of Newellton and St. Joseph, LA. Figure 2.5-10 illustrates the boundary of the GGNS Unit 1 EPZ.
3. Region is defined as the area located within a 50-mile radius of the GGNS site.

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TABLE 2.5-5
MEDIAN HOUSEHOLD INCOME¹
WITHIN 50-MILE RADIUS OF GGNS (BY MS COUNTY / LA PARISH)

MS County / LA Parish	Median Household Income
Adams, MS	\$25,234
Amite, MS	\$26,033
Claiborne, MS	\$22,615
Copiah, MS	\$26,358
Franklin, MS	\$24,885
Hinds, MS	\$33,991
Issaquena, MS	\$19,936
Jefferson, MS	\$18,447
Lincoln, MS	\$27,279
Madison, MS	\$46,970
Rankin, MS	\$46,946
Sharkey, MS	\$22,285
Simpson, MS	\$28,343
Warren, MS	\$35,056
Wilkinson, MS	\$18,929
Yazoo, MS	\$24,795
Caldwell, LA	\$26,972
Catahoula, LA	\$22,528
Concordia, LA	\$22,742
East Carroll, LA	\$20,723
Franklin, LA	\$22,964
Madison, LA	\$20,509
Richland, LA	\$23,668
Tensas, LA	\$19,799
West Carroll, LA	\$24,636

SOURCE: Reference 7

NOTES:

1. Median income data for 2000 U.S. Census reported in 1999 dollars.

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TABLE 2.5-6

PROJECTED POPULATION DISTRIBUTION
10 TO 50 MILES FROM THE GGNS SITE

Sector/Year	10-20	20-30	30-40	40-50	Total
NORTH					
2002	726	470	653	392	2,241
2030	770	498	692	416	2,375
2040	785	508	706	424	2,423
2050	801	518	720	432	2,471
2060	817	529	735	441	2,521
2070	833	539	749	450	2,571
N-NE					
2002	20,890	17,721	6,377	200	45,188
2030	22,770	19,316	6,951	218	49,255
2040	23,453	19,895	7,159	225	50,733
2050	24,157	20,492	7,374	231	52,255
2060	24,882	21,107	7,595	238	53,822
2070	25,628	21,740	7,823	245	55,437
NE					
2002	6,000	6,132	2,005	680	14,817
2030	6,450	6,592	2,155	731	15,928
2040	6,611	6,757	2,209	749	16,326
2050	6,777	6,926	2,264	768	16,735
2060	6,946	7,099	2,321	787	17,153
2070	7,120	7,276	2,379	807	17,582
E-NE					
2002	836	2,213	27,800	48,984	79,833
2030	901	2,386	29,968	52,805	86,060
2040	925	2,448	30,748	54,178	88,298
2050	949	2,511	31,547	55,586	90,593
2060	973	2,577	32,367	57,032	92,949
2070	999	2,644	33,209	58,514	95,365
EAST					
2002	1,238	1,456	10,900	8,039	21,633
2030	1,355	1,594	11,930	8,799	23,677
2040	1,398	1,644	12,306	9,076	24,423
2050	1,442	1,696	12,693	9,362	25,192
2060	1,487	1,749	13,093	9,657	25,986
2070	1,534	1,804	13,506	9,961	26,805
E-SE					
2002	995	1,160	7,000	8,020	17,175
2030	1,085	1,264	7,630	8,742	18,721
2040	1,117	1,302	7,859	9,004	19,282
2050	1,151	1,341	8,095	9,274	19,861
2060	1,185	1,382	8,338	9,552	20,457
2070	1,221	1,423	8,588	9,839	21,070

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TABLE 2.5-6 (Continued)

Sector/Year	10-20	20-30	30-40	40-50	Total
SE					
2002	1,200	1,613	4,151	18,987	25,951
2030	1,308	1,758	4,525	20,696	28,287
2040	1,347	1,811	4,660	21,317	29,135
2050	1,388	1,865	4,800	21,956	30,009
2060	1,429	1,921	4,944	22,615	30,910
2070	1,472	1,979	5,092	23,293	31,837
S-SE					
2002	700	483	1,764	4,226	7,173
2030	753	519	1,896	4,543	7,711
2040	771	532	1,944	4,657	7,904
2050	791	546	1,992	4,773	8,101
2060	810	559	2,042	4,892	8,304
2070	831	573	2,093	5,015	8,511
SOUTH					
2002	3,900	2,222	1,242	1,087	8,451
2030	4,017	2,289	1,279	1,120	8,705
2040	4,057	2,312	1,292	1,131	8,792
2050	4,098	2,335	1,305	1,142	8,879
2060	4,139	2,358	1,318	1,154	8,968
2070	4,180	2,382	1,331	1,165	9,058
S-SW					
2002	1,069	8,026	16,095	10,600	35,790
2030	1,101	8,267	16,578	10,918	36,864
2040	1,112	8,349	16,744	11,027	37,232
2050	1,123	8,433	16,911	11,137	37,605
2060	1,134	8,517	17,080	11,249	37,981
2070	1,146	8,602	17,251	11,361	38,361
SW					
2002	500	1,712	5,700	8,034	15,946
2030	530	1,815	6,042	8,516	16,903
2040	541	1,851	6,163	8,686	17,241
2050	551	1,888	6,286	8,860	17,586
2060	562	1,926	6,412	9,037	17,937
2070	574	1,964	6,540	9,218	18,296
W-SW					
2002	1,230	1,400	2,122	1,196	5,948
2030	1,333	1,518	2,300	1,296	6,448
2040	1,371	1,560	2,365	1,333	6,628
2050	1,409	1,604	2,431	1,370	6,814
2060	1,448	1,649	2,499	1,408	7,005
2070	1,489	1,695	2,569	1,448	7,201

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TABLE 2.5-6 (Continued)

Sector/Year	10-20	20-30	30-40	40-50	Total
WEST					
2002	300	698	3,463	3,098	7,559
2030	323	752	3,733	3,340	8,149
2040	332	772	3,830	3,426	8,360
2050	340	792	3,930	3,516	8,578
2060	349	813	4,032	3,607	8,801
2070	358	834	4,137	3,701	9,030
W-NW					
2002	2,012	1,700	4,586	5,946	14,244
2030	2,169	1,833	4,944	6,410	15,355
2040	2,225	1,880	5,072	6,576	15,754
2050	2,283	1,929	5,204	6,747	16,164
2060	2,343	1,979	5,339	6,923	16,584
2070	2,403	2,031	5,478	7,103	17,015
NW					
2002	104	240	1,418	7,000	8,762
2030	113	262	1,546	7,630	9,551
2040	117	269	1,592	7,859	9,837
2050	120	278	1,640	8,095	10,132
2060	124	286	1,689	8,338	10,436
2070	128	294	1,740	8,588	10,749
N-NW					
2002	700	3,338	8,300	2,069	14,407
2030	768	3,663	9,109	2,271	15,812
2040	793	3,783	9,405	2,345	16,326
2050	819	3,905	9,711	2,421	16,856
2060	846	4,032	10,027	2,499	17,404
2070	873	4,163	10,352	2,581	17,970
Grand Totals					
2002	42,400	50,584	103,576	128,558	325,118
2030	45,746	54,325	111,279	138,449	349,799
2040	46,955	55,673	114,054	142,012	358,694
2050	48,197	57,059	116,904	145,671	367,831
2060	49,475	58,482	119,831	149,429	377,217
2070	50,788	59,944	122,838	153,288	386,858

SOURCE: References 1, 3 and 4

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TABLE 2.5-7

CLAIBORNE COUNTY INCOME¹ AND POVERTY MEASURES COMPARISON

	Claiborne County	State of Mississippi
Median Household Income	\$22,615	\$31, 330
Median Family Income	\$29,867	\$37,406
Per Capita Income	\$11,244	\$15,853
Percent of Families below Poverty Level	27.9%	16%
Percent of Individuals Below Poverty Level	32.4%	19.9%

SOURCE: Reference 7

NOTES:

1. Median income and Poverty data for 2000 U.S. Census reported in 1999 dollars.

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TABLE 2.5-8

ANNUAL AVERAGE WAGES FOR CLAIBORNE COUNTY
AND CONTIGUOUS MISSISSIPPI COUNTIES

Location	2000 Annual Average Wage	
	Manufacturing	Services
Claiborne County	\$443/week - \$11.08/hour	\$524/week - \$13.10/hour
Copiah County	\$459/week - \$11.48/hour	\$399/week - \$9.98/hour
Hinds County	\$671/week - \$16.78/hour	\$556/week - \$13.90/hour
Jefferson County	\$384/week - \$9.60/hour	\$335/week - \$8.38/hour
Warren County	\$583/week - \$14.58/hour	\$441/week - \$11.03/hour
State of Mississippi	\$548/week - \$13.70/hour	\$464/week - \$11.60/hour

SOURCE: Reference 9

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TABLE 2.5-9
AREA EMPLOYMENT BY INDUSTRY

Industry	2000		1990		Percentage Change in Jobs 1990-2000
	Number of Jobs	Percent Of Total	Number Of Jobs	Percent Of Total	
Agriculture, Forestry, Fishing	2,600	2.0%	4,204	3.0%	-38.5%
Construction	9,376	7.5%	9,528	6.9%	-1.6%
Manufacturing	15,787	12.6%	18,650	13.5%	-15.3%
Retail Trade	17,304	13.8%	24,681	17.9%	-29.8%
Transportation, Warehousing	8,198	6.5%	6,553	4.7%	+20%
Professional, Scientific, Management,	10,345	8.2%	15,797	11.4%	-34.5%
Educational & Health Services	35,353	28.2%	31,565	22.9%	+10.7%
Whole sale trade	5,220	4.1%	6,049	4.4%	-13.7%
Finance, Insurance, Real Estate	9,567	7.6%	10,691	7.7%	-10.5%
Public Administration	11,221	8.9%	9,648	7.0%	+14.0%
TOTAL	124,971		137,366		-9.0%

SOURCE: Reference 1

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TABLE 2.5-10

MANUFACTURERS WITHIN A 50-MILE RADIUS OF THE GGNS SITE

MS County LA Parish	Company	No. Of Employees	Product/Service
Adams, MS	International Paper Co.	600	Paper & allied products
	Dynasteel Corp	120	Fabricated metal products
	Mississippi River Corp	100	Paper & allied products
	Kelly's Kids	100	Apparel products
Claiborne, MS	Bruce Hardwood Floors	200	Lumber & wood products
	Prolon, LLC	90	Rubber & misc. plastic products
	Southern Lumber Co.	80	Lumber & wood products
	American Paper Tube Co.	20	Paper & allied products
Copiah, MS	Sanderson Farms, Inc.	499	Food & kindred products
	Kulhman Electric Corp.	400	Electronics & electrical components
	L C Industries, Inc.	386	Apparel products
Franklin, MS	American Railcar Industries	110	Transportation Equipment
	Franklin Timber Co.	63	Lumber & Wood Products
	Alford Lumber Co.	30	Lumber & Wood Products
Hinds, MS.	Tyson Foods, Inc.	1,400	Food & kindred products
	Delphi	1,223	Electronics & electrical components

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TABLE 2.5-10 (Continued)

MS County LA Parish	Company	No. Of Employees	Product/Service
Hinds, MS. (Cont.)	Eaton Aerospace	714	Industrial & commercial equipment
Lincoln, MS	Delphi	617	Electronic & electrical equipment components
	Columbus Lumber Co., LLC	150	Lumber & Wood Products
	Keystone-Seneca Wire Cloth Co.	120	Fabricated Metal Products
	Gatlin Corporation, Inc.	72	Industrial and commercial machinery and computer equipment
Warren, MS	Cooper Lighting HID	1,005	Electronic components
	LeTourneau Inc.	652	Industrial & commercial equipment
	Tyson foods, Inc	650	Food & kindred products
	Anderson-Tully Co.	550	Lumber & Wood Products
	International Paper Co.	370	Paper & allied products
Franklin, LA	La Sevilla Fashions, Inc.	250	Apparel products
	Mastercrafters Corp.	170	Fiberglass boat/trailer manufacturing
Madison, LA	API Outdoors Inc.	100	Hunting equipment
Tensas, LA	Panola Company	42	Hot Sauce
	Texas Road Gin	40	Cotton gin

SOURCE: References 9 and 10

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TABLE 2.5-11

AREA LABOR FORCE DATA
FOR DECEMBER 2002

Labor Data	Claiborne County	Surrounding Area **	State Of Mississippi
Labor force	3,220	170,770	1,320,500
Total Employment	2,820	161,380	1,239,300
Total Unemployed	400	9,390	81,200
Unemployment Rate	12.4%	8.3%	6.1%

** Surrounding area includes contiguous counties of Copiah County, MS, Franklin County, MS, Hinds County, MS, Jefferson County, MS, Lincoln County, MS, and Warren County, MS, and Tensas Parish, LA.

SOURCE: References 9 and 10

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TABLE 2.5-12

EMPLOYMENT TRENDS FOR CLAIBORNE COUNTY,
CONTIGUOUS MS COUNTIES AND TENSAS PARISH, LA - 1990-2000

MS County LA Parish	Workers Employed 1990	Workers Employed 2000	Percentage Change in Workers Employed 1990-2000	Unemployment Rate 1990	Unemployment Rate 2000
Claiborne, MS	3,490	2,990	-14.3%	15.3%	11.8%
Copiah, MS	10,540	10,420	-1.1%	9.4%	7.7%
Hinds, MS	121,360	125,340	+3.1%	5.6%	4.7%
Jefferson, MS	2,300	2,230	-3.0%	22.8%	19.5%
Warren, MS	20,780	25,630	+18.9%	7.5%	5.0%
Tensas, LA	2,390	3,100	+22.9%	8.1%	8.3%

SOURCE: References 1 and 2

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TABLE 2.5-13

REGIONAL OCCUPIED HOUSING STABILITY CHARACTERISTICS¹

Year Moved In	Units	Percentage
1999 to 3/2000	54,822	18.2%
1995 to 1998	83,311	27.6%
1990 to 1994	48,558	16.1%
1980 to 1989	47,135	15.6%
1970 to 1979	34,465	11.4%
1969 or earlier	33,456	11.1%
Occupied Housing units ²	301,747	

SOURCE: Reference 1

NOTES:

1. Regional data includes housing data reported for counties within 50-mile radius of the site.
2. Housing units include owner occupied and renter occupied housing.

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TABLE 2.5.2-14

REGIONAL HOUSING INFORMATION BY COUNTY / PARISH
FOR THE YEAR 2000

County	Total Housing Unit	Occupied	Owner Occupied	Renter Occupied	Vacant Housing	Seasonal /Recreational
Caldwell, LA	5,035	3,941	3,122	819	1,094	513
Catahoula, LA	5,351	4,082	3,393	689	1,269	822
Concordia, LA	9,148	7,521	5,723	1,798	1,627	963
East Carroll, LA	3,303	2,969	1,845	1,124	334	55
Franklin, LA	8,623	7,754	5,919	1,835	869	226
Madison, LA	4,979	4,469	2,766	1,703	510	167
Richland, LA	8,335	7,490	5,411	2,079	845	246
Tensas, LA	3,359	2,416	1,669	747	943	502
West Carroll, LA	4,980	4,458	3,518	940	522	57
Adams, MS	15,175	13,677	9,615	4,062	1,498	176
Amite, MS	6,446	5,271	4,535	736	1,175	490
Claiborne, MS	4,252	3,685	2,956	729	567	149
Copiah, MS	11,101	10,142	8,107	2,035	959	176
Franklin, MS	4,119	3,211	2,764	447	908	434
Hinds, MS	100,287	91,030	58,131	32,899	9,257	421
Issaquena, MS	877	726	486	240	151	40
Jefferson, MS	3,819	3,308	2,658	650	511	169
Lincoln, MS	14,052	12,538	9,788	2,750	1,514	205
Madison, MS	28,781	27,219	19,288	7,931	1,532	203
Rankin, MS	45,070	42,089	32,471	9,618	2,981	393
Sharkey, MS	2,416	2,163	1,417	746	253	48
Simpson, MS	11,307	10,076	8,176	1,900	1,231	202
Warren, MS	20,789	18,756	12,785	5,971	2,033	199
Wilkinson, MS	5,106	3,578	2,979	599	1,528	941
Yazoo, MS	10,015	9,178	6,311	2,867	837	72

SOURCE: Reference1

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TABLE 2.5-15
SCHOOLS WITHIN THE EPZ FOR GGNS SITE¹

School Name	Institution Population	
	Students	Faculty / Staff
Port Gibson High School	565	33
Port Gibson Middle School	453	31
Arthur W. Watson Elementary	993	52
Chamberlain-Hunt Academy	111	16
Claiborne Educational Foundation	77	7
Alcorn State University	3,100	~194
Davidson High School	210	20
Newellton High School	320	24
Tensas Charter School	43	3
Tensas Elementary School	199	14
Tensas Academy	206	14

SOURCE: References 13 and 40

NOTES:

1. Student and faculty/staff populations based on 2001/2002 school year.

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TABLE 2.5-16

NUMBER OF PRIMARY AND SECONDARY SCHOOLS AND STUDENTS
WITHIN SURROUNDING COUNTIES / PARISHES

MS County LA Parish	Number of schools	Institution Population
Copiah, MS	6	4,911
Hinds, MS	85	43,281
Jefferson, MS	5	1,714
Warren, MS	14	9,180
Tensas Parish, LA	6	1,195

SOURCE: Reference 13

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TABLE 2.5-17

NATIONAL REGISTER OF HISTORIC PLACES, CLAIBORNE COUNTY, MISSISSIPPI

	Resource Name	Address	City	Date Listed
1.	Alcorn State University Historic District	Alcorn State University	Lorman	05-20-82
2.	Bayou Pierre Site	Address Restricted	Port Gibson	06-23-78
3.	Bethel Presbyterian Church	North of Alcorn on MS 552	Alcorn	11-28-78
4.	Buena Vista Cotton Gin	NE of Port Gibson	Port Gibson	12-27-74
5.	Building at 801 Chinquepin Street	801 Chinquepin Street	Port Gibson	07-22-79
6.	Canemount	N. of Alcorn off MS 552	Alcorn	12-02-82
7.	Catholic Cemetery	700 Coffee	Port Gibson	07-22-79
8.	Catledge Archeological Site	Address Restricted	Alcorn	07-15-74
9.	Centers Creek Mound	Address Restricted	Russum	08-14-73
10.	Chamberlain-Hunt Academy Historic District	Bounded by US 61, City limits, Woodstock St., SR 547	Port Gibson	07-22-79
11.	Claremont	366 Claremont Dr.	Port Gibson	07-22-79
12.	Collina	Greenwood St. Extension	Port Gibson	07-22-79
13.	Drake Hill Historic District	Drake Hill Rd.	Port Gibson	07-22-79

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TABLE 2.5-17 (Continued)

	Resource Name	Address	City	Date Listed
14.	Golden West Cemetery	Rodney Road	Port Gibson	07-22-79
15.	Grand Gulf Military State Park	6 mi. W of Port Gibson	Port Gibson	04-11-72
16.	Hollywood	Old Hwy 61	Port Gibson	1992
17.	Idlewild	310 Idlewild Dr.	Port Gibson	07-22-79
18.	Jewish Cemetery	900 Marginal St.	Port Gibson	07-22-79
19.	Market Street Suburb St. Mary Historic District	Bounded by Orange, Marginal, Greenwood, & Market Sts.	Port Gibson	07-22-79
20.	McGregor	SR 547	Port Gibson	07-22-79
21.	Nelson, John, Site	Address Restricted	Willows	06-13-74
22.	Oakland Chapel	Alcorn State University Campus	Alcorn	12-27-74
23.	Old Brickyard Place	Anthony St.	Port Gibson	07-22-79
24.	Old Depot Restaurant And Lounge	1202 Market St.	Port Gibson	07-22-79
25.	Old Natchez Trace (132-3T)	NE of Port Gibson	Port Gibson	11-07-76
26.	Owens Creek Bridge	Spans Owen Creek on Old CR	Utica	11-16-88
27.	Port Gibson Battlefield	4 mi. W of Port Gibson	Port Gibson	11-03-72

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TABLE 2.5-17 (Continued)

	Resource Name	Address	City	Date Listed
28.	Port Gibson Oil Works Mill Bldg.	Anthony St.	Port Gibson	
29.	Sacred Heart Roman Catholic Church	Grand Gulf Military Monument Park	Port Gibson	11-23-87
30.	Smithfield	Address Restricted	Bruinsburg	06-09-78
31.	Van Dorn House	Van Dorn Dr	Port Gibson	06-21-71
32.	Widow's Creek Bridge	Spans Widow's Creek on CR	Port Gibson	11-16-88
33.	Windsor Ruins	12 mi. SW of Port Gibson on MS 552	Port Gibson	11-23-71
34.	Windsor Site	Address Restricted	Port Gibson	02-07-79
35.	Wintergreen Cemetery	E. Greenwood St.	Port Gibson	07-22-79

SOURCE: Reference 28

NOTES:

* Refer to Figure 2.5-5 for the location of historic places.

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TABLE 2.7-1

RESULTANT WIND DIRECTION AND SPEED - GRAND GULF SITE
1996 – 2001

Year	Most Common Wind Angle at 33 ft (Degrees Clockwise from North)	Average Wind Speed at 33 ft (mph)
1996	168	4.3
1997	2	3.7
1998	355	4.2
1999	160	4.2
2000	184	4.3
2001	146	4.1

NOTES:

1. Data from GGNS Site Meteorological Tower (Reference 2)

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TABLE 2.7-2
RESULTANT WIND DIRECTION AND SPEED, VICKSBURG, MS
1997-2001

Year	Most Common Wind Angle (Degrees Clockwise from North)	Average Wind Speed (mph)
1997	30	7.4
1998	160	7.5
1999	160	7.3
2000	170	7.2
2001	160	7.0

NOTES:

1. Data from NCDC (Reference 3)

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TABLE 2.7-3

WET AND DRY BULB TEMPERATURES (DEGREES FAHRENHEIT)

	GGNS UFSAR ⁴ (°F)	Grand Gulf Site ⁵ (°F)	Vicksburg ⁶ (°F)	PPE Data ⁷ (°F)
Number of Data ¹	--	4,127	8,767	--
Winter Extreme Low ²	17	17.3	16	
Winter 99% Low ²	21	23.1	24	(-)10
Winter 97.5% Low ²	24	25.8	26	
Number of data ¹	--	5,509	12,948	--
Summer 99% Dry Bulb ³	98	98.6	99	100
Summer 97.75% Dry Bulb ³	96	94.5	96	
Summer 95% Dry Bulb ³	94	91.7	94	
Number of data ¹	--	--	13,031	--
Summer 99% Wet Bulb ³	79	--	82	80
Summer 97.75% Wet Bulb ³	78	--	81	
Summer 95% Wet Bulb ³	78	--	80	

NOTES:

1. "Number of data" is the number of hourly temperature measurements in the database.
2. "Winter" in this case, is all hourly recorded temperature in the months of December through February. The 99% value is based on sorting all data in order and locating the 99% limit.
3. "Summer" in this case, is all hourly recorded temperature in the months of June through September.
4. "GGNS UFSAR" is data from the Grand Gulf Unit 1 UFSAR Table 2.3-5 and is taken from Jackson, MS data.
5. "Grand Gulf Site" data is from meteorological tower measurements in 2000 - 2001 (Reference 2).
6. "Vicksburg" data is from NCDC data files 1997-2001 (Reference 3).
7. Plant Performance Envelope (PPE) data is taken from this report, Table 3.0-1.

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TABLE 2.7-4
(UFSAR TABLE 2.3-5)

WET AND DRY BULB TEMPERATURES (°F)
FOR COOLING EQUIPMENT DESIGN

Parameter	Jackson MS
	<u>Winter</u> (Dec – Feb)
Median Annual Extreme Minimum Dry Bulb	17
99% Dry Bulb	21
97 ½ % Dry Bulb	24
	<u>Summer</u> (Jun – Sep)
Design Dry Bulb	
1%	98
2 ½ %	96
5%	94
Design Wet Bulb	*
1%	79
2 ½ %	78
5%	78

NOTES:

1. The Median Annual Extreme Minimum Dry Bulb will be equaled or exceeded during one-half of the years.
2. Percentage temperatures are those that are equaled or exceeded during the indicated percentage of the hours during the season.

SOURCE:

Fluor Products Company 1964, "Evaluated Weather Data For Cooling Equipment Design, Addendum No. 1," Ecodyne Corporation, P. O. Box 1267, Santa Rosa, California, 52 pp.

- * Design point for both circulating water cooling tower and ultimate heat sink cooling towers.

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TABLE 2.7-5

RELATIVE HUMIDITY AT VICKSBURG, MS FOR FOUR TIME PERIODS PER DAY
1997 - 2001

	00:00 - 06:00	06:00- 12:00	12:00- 18:00	18:00- 24:00
Jan	85.9	78.1	66.0	81.3
Feb	86.8	76.1	60.2	79.6
Mar	84.4	72.1	58.1	76.5
Apr	87.2	69.9	54.9	76.9
May	89.1	68.5	54.5	78.3
Jun	91.5	71.9	60.1	82.9
Jul	93.3	71.6	58.2	85.1
Aug	92.5	70.4	55.1	83.5
Sep	90.1	69.8	54.7	82.5
Oct	88.8	66.5	49.9	80.1
Nov	89.2	73.9	58.6	82.3
Dec	86.2	77.1	65.0	81.6
Annual	88.8	72.2	58.0	80.9

NOTES:

1. Data from NCDC, 1997-2001 (Reference 3)
2. Hourly readings are averaged over the six hour period over all the days in the given months for these five years.

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TABLE 2.7-6

PRECIPITATION DATA (INCHES OF RAIN) AT GRAND GULF SITE

Month	Monthly Mean	Max Monthly Precipitation	Min Monthly Precipitation	Max 24 hour	Mean No. days >0.01 in
Jan	3.805	5.62	1.99	2.09	11.5
Feb	3.36	4.94	1.78	4.30	5.5
Mar	8.58	10.02	7.14	4.40	13.5
Apr	4.665	7.43	1.9	4.70	5.5
May	2.805	3.66	1.95	1.70	5.5
Jun	4.185	5.57	2.8	1.70	11.5
Jul	2.505	3.01	2	1.46	8
Aug	2.88	4.26	1.5	1.71	8.5
Sep	1.87	3.7	0.04	1.57	5.5
Oct	1.65	2.14	1.16	2.12	2.5
Nov	4.47	8.92	0.02	3.00	8
Dec	4.07	4.35	3.79	3.38	9.5
Annual	44.845	46.85	42.84	4.7	95

NOTES:

1. Data from Site Meteorological Tower, 2000 – 2001

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TABLE 2.7-7

PRECIPITATION DATA (INCHES OF RAIN) AT VICKSBURG, MS

Month	Monthly Mean	Max Monthly Mean	Min Monthly Mean	Max 24 hour	Mean No. days >0.01 in
Jan	6.376	9.68	2.79	4.52	12.2
Feb	4.428	8.72	0.74	2.79	10
Mar	6.892	8.64	5.26	3.28	11
Apr	4.208	6.33	2.14	3.77	9.8
May	2.206	4.93	0.38	2.94	9.2
Jun	3.678	5.73	1.88	4.01	9.8
Jul	2.648	5.91	0.49	3.17	9
Aug	1.98	3.8	0.61	2.73	6.8
Sep	3.738	6.62	1.69	2.73	9.6
Oct	3.024	6.46	1.32	2.67	7.8
Nov	4.894	8.26	1.41	3.37	10.6
Dec	5.492	9.94	1.98	3.96	11.6
Annual	49.564	59.76	35.69	4.52	117.4

NOTES:

1. Data from NCDC, 1997-2001

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TABLE 2.7-8

FREQUENCY OF TROPICAL CYCLONES (BY MONTH) FOR THE STATES OF
FLORIDA, ALABAMA, MISSISSIPPI, LOUISIANA, AND TEXAS

	<u>Category of Storm</u>					Monthly Total (No.)	Annual Frequency (yr ⁻¹)	% of Total
	1 (No.)	2 (No.)	3 (No.)	4 (No.)	5 (No.)			
May	0	0	0	0	0	0	0	0%
Jun	6	2	1	1	0	10	0.10	9%
Jul	3	3	3	0	0	9	0.09	8%
Aug	8	7	10	2	1	28	0.28	24%
Sep	11	9	15	7	1	43	0.43	37%
Oct	9	7	7	0	0	23	0.23	20%
Nov	2	2	0	0	0	4	0.04	3%
Total	39	30	36	10	2	117	1.2	100%

Where the definition of Storm Category is as follows:

Storm Category	Wind Speed (mph)	Storm Surge (ft. Above Normal)
1	74 to 95	4 to 5
2	96 to 110	6 to 8
3	111 to 130	9 to 12
4	131 to 155	13 to 18
5	Greater than 155	Greater than 18

NOTES:

1. Data is from "Atlantic Tropical Storms And Hurricanes Affecting The United States:1899-2000," NOAA Technical Memorandum NWS SR-206 (Reference 6)

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TABLE 2.7-9

TORNADOES IN CLAIBORNE, WARREN AND HINDS COUNTIES, MISSISSIPPI, AND
TENSAS PARISH, LOUISIANA

Month	Hinds County (#)	Claiborne County (#)	Warren County (#)	Tensas Parish (#)	All Four Areas (#)	Average per Year (#/yr)
Jan	5	2	4	2	13	0.25
Feb	8	1	2	0	11	0.21
Mar	8	1	0	5	14	0.27
Apr	5	2	3	3	13	0.25
May	3	0	2	2	7	0.13
Jun	1	0	2	1	4	0.08
Jul	2	0	1	0	3	0.06
Aug	2	1	1	0	4	0.08
Sep	2	0	0	0	2	0.04
Oct	1	1	3	0	5	0.10
Nov	8	3	4	4	19	0.37
Dec	4	1	4	4	13	0.25
Annual	49	12	26	21	108	2.08
Length of Record	52 yrs	52 yrs	52 yrs	52yrs	52 yrs	52 yrs
Years	1950-2002	1950-2002	1950-2002	1950-2002	1950-2002	1950-2002
Area	869 mi ²	487 mi ²	587 mi ²	602 mi ²	2,454 mi ²	

NOTES:

1. Tornadoes listed at different sites on the same day were counted as different events. Similarly, multiple tornadoes on the same day were counted as different events.
2. Tornado frequency did not change significantly over the time range, so all data from years were used to calculate the annual frequencies.
3. Grand Gulf is in Claiborne County. Warren County, directly to the north, is included because Vicksburg is in that county, while Hinds, to the East, is included because Jackson is in that county. Vicksburg and Jackson have NCDC meteorological stations and their inclusion helps to assure all weather events are captured. Tensas parish, Louisiana is directly across the Mississippi River from the Grand Gulf site.
4. Recorded in the NOAA Storm Events Database, 1950-4/30/2002 (Reference 5)

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TABLE 2.7-10

THUNDERSTORMS AND HIGH WIND EVENTS IN CLAIBORNE, WARREN AND
HINDS COUNTIES, MISSISSIPPI, AND TENSAS PARISH, LOUISIANA

Month	Hinds County (#)	Claiborne County (#)	Warren County (#)	Tensas Parish (#)	All Four Areas (#)	Average per Year (#/yr)
Jan	9	1	8	5	16	0.62
Feb	14	5	10	7	17	.071
Mar	20	8	15	9	37	1.10
Apr	21	10	20	8	42	1.38
May	24	7	14	9	36	1.14
Jun	26	10	12	8	39	1.33
Jul	24	4	16	7	40	1.38
Aug	6	3	9	1	16	0.57
Sep	7	0	1	0	8	0.24
Oct	2	0	5	4	9	0.33
Nov	10	3	13	6	22	0.86
Dec	7	1	10	2	16	0.52
Annual	170	52	133	66	298	10.2
Length of Record	47 yrs	47 yrs	47 yrs	47 yrs	47 yrs	21 yrs
Years	1955-2002	1955-2002	1955-2002	1955-2002	1955-2002	1981-2001

NOTES:

1. Storms listed at different sites in the same county on the same day were counted as 1 event.
2. The "All Four Areas" total is equal to or less than the sum of the count for all four areas because some individual storms extended into more than 1 area (county or parish).
3. Average/yr were based on the period 7/31/1981 through 7/31/2002 (last storm in database). Prior to 1981, the yearly storm averages were markedly less frequent, suggesting less thorough storm data collection.
4. Grand Gulf is in Claiborne County. Warren County, directly to the north, is included because Vicksburg is in that county, while Hinds, to the East, is included because Jackson is in that county. Vicksburg and Jackson have NCDC meteorological stations and their inclusion helps to assure all weather events are captured. Tensas parish, Louisiana is directly across the Mississippi River from the Grand Gulf site.
5. Recorded in the NOAA Storm Events Database, 1955 – 4/30/2002 (Reference 5)

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TABLE 2.7-11

HAILSTORMS IN CLAIBORNE, WARREN AND HINDS COUNTIES MISSISSIPPI, AND
TENSAS PARISH, LOUISIANA

Month	Hinds County (#)	Claiborne County (#)	Warren County (#)	Tensas Parish (#)	All Four Areas (#)	Average per Year (#/yr)
Jan	6	0	3	1	10	0.43
Feb	5	2	2	7	16	0.67
Mar	31	4	16	9	60	2.52
Apr	51	9	13	11	84	2.95
May	24	2	9	13	48	1.90
Jun	11	0	3	3	17	0.71
Jul	9	1	0	0	10	0.43
Aug	2	0	0	1	3	0.10
Sep	0	0	0	0	0	0.00
Oct	0	0	2	1	3	0.14
Nov	18	0	2	1	21	0.95
Dec	2	0	2	3	7	0.29
Annual	159	18	52	50	279	11.10
Length of Record	47 yrs	47 yrs	47 yrs	47 yrs	47 yrs	21 yrs
(Years)	1955-2002	1955-2002	1955-2002	1955-2002	1955-2002	1981-2001

NOTES:

1. Hail events listed at different sites on the same day were counted as different events. Similarly, hail events separated by periods of no hail on the same day were counted as different events.
2. Average/yr were based on 5/26/1981 through 5/26/2002 (last hailstorm in database). Prior to this period, the yearly storm averages were markedly less frequent, suggesting less thorough storm data collection.
3. Grand Gulf is in Claiborne County. Warren County, directly to the north, is included because Vicksburg is in that county, while Hinds, to the East, is included because Jackson is in that county. Vicksburg and Jackson have NCDC meteorological stations and their inclusion helps to assure all weather events are captured. Tensas parish, Louisiana is directly across the Mississippi River from the Grand Gulf site.
4. Recorded in the NOAA Storm Events Database, 1955 – 4/30/2002 (Reference 5)

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TABLE 2.7-12

ICE STORMS IN CLAIBORNE, WARREN AND HINDS COUNTIES MISSISSIPPI, AND
TENSAS PARISH, LOUISIANA

Location or County	Date	Time	Type	Duration (hrs)	Death	Injuries	Property Damage	Crop Damage
Claiborne, Hinds, Warren & Tensas	2/1/96	6:00 PM	Ice Storm	24	0	0	\$3.0M	0
Claiborne, Hinds & Warren	12/14/97	12:30 AM	Heavy Snow	13.5	0	0	\$50K	0
Claiborne, Hinds, Warren & Tensas	12/22/98	8:00 PM	Ice Storm	57	0	0	\$16.6M	0
Warren	1/27/00	6:00 AM	Ice Storm	24	0	0	\$285K	0

NOTES:

1. Grand Gulf is in Claiborne County. Warren County, directly to the north, is included because Vicksburg is in that county, while Hinds, to the East, is included because Jackson is in that county. Vicksburg and Jackson have NCDC meteorological stations and their inclusion helps to assure all weather events are captured. Tensas parish, Louisiana is directly across the Mississippi River from the Grand Gulf site.
2. The annual frequency based on these 4 events in 8 years is 0.5/yr, and the average duration is 30 hours.
3. Recorded In The NOAA Storm Event Database, 1993 – 2001, (Reference 5).

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TABLE 2.7-13
(UFSAR TABLE 2.3-74)

ESTIMATED MAXIMUM POINT PRECIPITATION AMOUNTS (INCHES) FOR
SELECTED DURATIONS AND RECURRENCE INTERVALS
GRAND GULF, MISSISSIPPI
COMPARED TO RECENT EXPERIENCE AT VICKSBURG, MISSISSIPPI

Duration	<u>Recurrence Intervals (Yr.)</u>							
	1	2	5*	5	10	25	50	100
30 minutes	1.4	1.6		2.0	2.2	2.5	2.8	3.1
1 hour	1.8	2.0	1.63	2.6	2.8	3.2	3.6	3.8
2 hours	2.2	2.6	2.66	3.2	3.5	4.0	4.5	4.9
3 hours	2.4	2.8	2.71	3.5	4.0	4.5	5.1	5.5
6 hours	2.8	3.3	2.82	4.3	4.9	5.7	6.3	6.9
12 hours	3.4	4.0	3.70	5.1	5.8	6.8	7.7	8.5
24 hours	3.9	4.6	4.52	6.0	6.9	8.0	8.8	9.9
2 days		5.4		6.8	7.9	9.2	11.0	11.8
4 days		6.4		8.1	9.3	11.2	13.1	14.2
7 days		7.5		9.6	11.2	13.1	14.7	15.9
10 days		8.3		10.5	12.5	14.3	16.0	17.6

NOTES:

* Recent 5 year experience, 1997-2001, Vicksburg Meteorology Station, data from the NCDC added to the table for comparison purposes.

SOURCES:

Hershfield, D.M., Rainfall Frequency Atlas of the United States for Durations from 30 minutes to 24 hours and Return Periods from 1 to 100 years, US Weather Bureau Technical Paper 40, Washington, D.C., 1961 (Reference 20)

Miller, J/F., Two to Ten Day Precipitation for Return Periods of 2 to 100 years in the Contiguous United States, US Weather Bureau Technical Paper 49, Washington, D.C., 1964 (Reference 21)

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TABLE 2.7-14
(UFSAR TABLE 2.3-17)

TOTAL MAXIMUM WINTER PRECIPITATION JACKSON, MISSISSIPPI

Season	Maximum 48 Hour Precipitation (Inches)
1960-61	3.13
1961-62	3.65
1962-63	1.67
1963-64	4.03
1964-65	5.31
1965-66	2.54
1966-67	1.69
1967-68	3.15
1968-69	1.84
1969-70	2.32
1970-71	2.27
1971-72	4.77
1972-73	2.91
1973-74	4.47
1974-75	3.41

NOTES:

Data source is Reference 17.

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TABLE 2.7-15

PASQUILL STABILITY CLASS ANNUAL FREQUENCY

STABILITY CLASS FREQUENCY TABLE^{1,3}

GRAND GULF ²

		WIND FROM																
		N	N-NE	NE	E-NE	E	E-SE	SE	S-SE	S	S-SW	SW	W-SW	W	W-NW	NW	N-NW	
		WIND HEADED																
STABILITY CLASS		S	S-SW	SW	W-SW	W	W-NW	NW	N-NW	N	N-NE	NE	E-NE	E	E-SE	SE	S-SE	SUM
A		.002	.001	.000	.000	.000	.000	.000	.000	.002	.003	.004	.004	.007	.004	.003	.003	.033
B		.010	.005	.003	.001	.000	.000	.000	.004	.012	.012	.015	.008	.014	.009	.011	.009	.114
C		.015	.008	.006	.001	.000	.000	.001	.007	.018	.011	.015	.007	.012	.007	.010	.014	.134
D		.027	.014	.012	.006	.002	.001	.002	.016	.032	.017	.018	.010	.012	.008	.012	.020	.210
E		.021	.013	.012	.007	.003	.001	.001	.012	.023	.008	.007	.005	.007	.005	.006	.010	.142
F		.024	.019	.018	.012	.007	.002	.003	.012	.024	.010	.006	.007	.009	.006	.008	.010	.178
G		.019	.019	.025	.027	.014	.004	.005	.007	.013	.007	.008	.011	.007	.007	.010	.010	.190
AVERAGE		4.60684				VARIANCE		3.07892				STD DEV		1.75469				
STD ERR		.00963				SKEWNESS		1.16229				KURTOSIS		1.42446				

NOTES:

1. Data from Calculation ENTO002-CALC-003, Plume Characteristics Of Proposed New Cooling Towers At Grand Gulf, Rev. 1 (Reference 24)
2. Values are fraction of the year with both wind and stability class as identified. The average, variance and standard deviation are based on replacing Stability Classes A through G with number values 1 through 7.
3. The plume model uses wind speeds from the Grand Gulf site, but uses ambient temperature, dewpoint temperature, relative humidity and sky cover measured at Vicksburg, Mississippi, since the site data didn't include that data. It is assumed that Grand Gulf and Vicksburg would have the same stability characteristics because they are nearby and both are on the river bank.

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TABLE 2.7-16

PASQUILL STABILITY CLASS WINTER FREQUENCY

STABILITY CLASS BY WIND DIRECTION ^{1,2,3}

GRAND GULF
SEASON = WINTER

WIND FROM																	
	N	N-NE	NE	E-NE	E	E-SE	SE	S-SE	S	S-SW	SW	W-SW	W	W-NW	NW	N-NW	
WIND HEADED																	
STABILITY CLASS	S	S-SW	SW	W-SW	W	W-NW	NW	N-NW	N	N-NE	NE	E-NE	E	E-SE	SE	S-SE	STAG.
A	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
B	.02	.01	.01	.00	.00	.01	.04	.03	.04	.05	.05	.06	.11	.11	.09	.04	.00
C	.07	.06	.06	.03	.00	.04	.10	.12	.14	.10	.22	.16	.18	.18	.19	.15	.00
D	.32	.21	.24	.13	.07	.06	.22	.37	.36	.40	.40	.28	.22	.21	.25	.36	.00
E	.24	.26	.18	.13	.10	.06	.12	.24	.23	.20	.15	.18	.18	18	.19	.19	.00
F	.23	.28	.27	.23	.28	.33	.23	.15	.17	.18	.11	.19	.15	.17	.20	.17	.00
G	.12	.17	.23	.47	.55	.49	.28	.08	.06	.07	.06	.13	.16	.15	.08	.09	.00

NOTES:

1. Data from Calculation ENTO002-CALC-003, Plume Characteristics Of Proposed New Cooling Towers At Grand Gulf, Rev. 1 (Reference 24)
2. Values are fraction of times with described stability class when the wind is in the indicated direction.
3. Wind data is averaged over each hour and reported down to 0.1 mph. No hour in the data had a zero velocity, so stagnation (STAG) cases are all zero frequency.

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TABLE 2.7-17

PASQUILL STABILITY CLASS SPRING FREQUENCY

STABILITY CLASS BY WIND DIRECTION ^{1,2,3}

GRAND GULF
SEASON = SPRING

WIND FROM																	
	N	N-NE	NE	E-NE	E	E-SE	SE	S-SE	S	S-SW	SW	W-SW	W	W-NW	NW	N-NW	
WIND HEADED																	
STABILITY CLASS	S	S-SW	SW	W-SW	W	W-NW	NW	N-NW	N	N-NE	NE	E-NE	E	E-SE	SE	S-SE	STAG.
A	.03	.02	.00	.00	.00	.00	.01	.01	.01	.03	.05	.08	.07	.06	.04	.04	.00
B	.10	.07	.06	.02	.02	.04	.05	.08	.10	.20	.22	.19	.22	.17	.21	.12	.00
C	.10	.10	.08	.03	.03	.03	.10	.13	.17	.18	.25	.15	.16	.15	.18	.22	.00
D	.21	.18	.15	.11	.13	.21	.20	.27	.28	.27	.24	.23	.21	.27	.25	.26	.00
E	.19	.19	.15	.15	.12	.07	.12	.21	.21	.13	.10	.08	.11	.11	.09	.14	.00
F	.24	.23	.25	.20	.27	.27	.24	.24	.17	.11	.08	.16	.12	.14	.14	.11	.00
G	.14	.21	.30	.49	.43	.39	.29	.06	.06	.08	.07	.11	.12	.11	.08	.10	.00

NOTES:

1. Data from Calculation ENTO002-CALC-003, Plume Characteristics Of Proposed New Cooling Towers At Grand Gulf, Rev. 1 (Reference 24)
2. Values are fraction of times with described stability class when the wind is in the indicated direction.
3. Wind data is averaged over each hour and reported down to 0.1 mph. No hour in the data had a zero velocity, so stagnation (STAG) cases are all zero frequency.

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TABLE 2.7-18

PASQUILL STABILITY CLASS SUMMER FREQUENCY

STABILITY CLASS BY WIND DIRECTION ^{1,2,3}

GRAND GULF
SEASON = SUMMER

WIND FROM																	
	N	N-NE	NE	E-NE	E	E-SE	SE	S-SE	S	S-SW	SW	W-SW	W	W-NW	NW	N-NW	
WIND HEADED																	
STABILITY CLASS	S	S-SW	SW	W-SW	W	W-NW	NW	N-NW	N	N-NE	NE	E-NE	E	E-SE	SE	S-SE	STAG.
A	.08	.04	.01	.01	.00	.00	.00	.01	.04	.06	.12	.17	.21	.24	.19	.13	.00
B	.16	.08	.05	.02	.01	.02	.02	.07	.08	.20	.27	.20	.20	.23	.23	.21	.00
C	.16	.13	.08	.03	.04	.02	.07	.10	.10	.18	.20	.12	.14	.15	.15	.20	.00
D	.15	.13	.14	.10	.06	.04	.11	.15	.17	.18	.17	.12	.13	.09	.14	.13	.00
E	.10	.12	.16	.14	.13	.13	.08	.17	.15	.09	.05	.08	.06	.04	.06	.04	.00
F	.15	.20	.21	.20	.21	.17	.18	.26	.27	.16	.05	.10	.09	.09	.08	.09	.00
G	.21	.30	.37	.50	.55	.63	.53	.25	.19	.13	.13	.20	.17	.15	.16	.20	.00

NOTES:

1. Data from Calculation ENTO002-CALC-003, Plume Characteristics Of Proposed New Cooling Towers At Grand Gulf, Rev. 1 (Reference 24)
2. Values are fraction of times with described stability class when the wind is in the indicated direction.
3. Wind data is averaged over each hour and reported down to 0.1 mph. No hour in the data had a zero velocity, so stagnation (STAG) cases are all zero frequency.

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TABLE 2.7-19

PASQUILL STABILITY CLASS FALL FREQUENCY

STABILITY CLASS BY WIND DIRECTION ^{1,2,3}

GRAND GULF
SEASON = FALL

	WIND FROM																
	N	N-NE	NE	E-NE	E	E-SE	SE	S-SE	S	S-SW	SW	W-SW	W	W-NW	NW	N-NW	
STABILITY CLASS	WIND HEADED																
	S	S-SW	SW	W-SW	W	W-NW	NW	N-NW	N	N-NE	NE	E-NE	E	E-SE	SE	S-SE	STAG.
A	.00	.00	.00	.00	.01	.00	.00	.00	.00	.01	.00	.02	.04	.03	.02	.01	.00
B	.10	.09	.04	.01	.00	.00	.03	.09	.18	.22	.21	.17	.24	.28	.24	.16	.00
C	.16	.11	.08	.02	.01	.08	.07	.16	.17	.17	.17	.16	.19	.14	.17	.19	.00
D	.21	.17	.14	.09	.07	.10	.06	.21	.20	.22	.24	.22	.14	.15	.19	.24	.00
E	.16	.13	.15	.11	.11	.06	.06	.17	.14	.08	.10	.10	.07	.07	.08	.12	.00
F	.19	.24	.22	.26	.29	.16	.31	.20	.16	.15	.12	.12	.15	.16	.15	.13	.00
G	.18	.27	.37	.51	.52	.60	.46	.16	.15	.15	.16	.21	.17	.16	.15	.16	.00

NOTES:

1. Data from Calculation ENTO002-CALC-003, Plume Characteristics Of Proposed New Cooling Towers At Grand Gulf, Rev. 1 (Reference 24)
2. Values are fraction of times with described stability class when the wind is in the indicated direction.
3. Wind data is averaged over each hour and reported down to 0.1 mph. No hour in the data had a zero velocity, so stagnation (STAG) cases are all zero frequency.

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TABLE 2.7-20

INVERSION HEIGHTS AND STRENGTHS, JACKSON, MISSISSIPPI INTERNATIONAL
AIRPORT, JANUARY 1992 – 2000 (NCDC DATA)

January	% Mornings with Inversions	Average Height	Average Strength	% Afternoons with Inversions	Average Height	Average Strength
1992	74.2%	846.5	0.0702	45.2%	1577.0	0.0259
1993	66.7%	705.7	0.0627	38.9%	1227.0	0.0430
1994	78.9%	783.6	0.0861	55.6%	1282.0	0.0366
1995	63.6%	1061.7	0.0539	42.9%	1370.5	0.0311
1996	80.0%	818.9	0.0608	23.5%	1531.5	0.0275
1997	63.2%	865.0	0.0589	55.6%	1378.2	0.0455
1998	73.7%	774.7	0.0511	30.4%	1847.2	0.0313
1999	41.2%	921.1	0.0696	30.0%	1446.0	0.0354
2000	70.0%	1313.4	0.0413	33.3%	1821.5	0.0318
Total	68.2%	870.0	0.0633	39.5%	1492.1	0.0341

NOTES:

1. Inversion is defined as three NOAA weather balloon elevation readings showing consecutive increases in temperature with height (below 3000m).
2. Balloons were released each day at 6:00 AM and 6:00 PM. Height is defined as elevation in meters where temperature first decreases and is averaged only over those days with inversions.
3. Strength is the maximum temperature gradient in degrees Centigrade per meter within the inversion layer.

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TABLE 2.7-21

INVERSION HEIGHTS AND STRENGTHS, JACKSON, MISSISSIPPI INTERNATIONAL
AIRPORT, FEBRUARY 1992 – 2000 (NCDC DATA)

February	% Mornings with Inversions	Average Height	Average Strength	% Afternoons with inversions	Average Height	Average Strength
1992	79.3%	622.2	0.0704	21.4%	1558.8	0.0277
1993	55.6%	761.3	0.0793	21.4%	1822.6	0.0386
1994	76.5%	634.0	0.0894	36.8%	1995.4	0.0530
1995	68.8%	896.6	0.0565	8.3%	1987.0	0.0400
1996	64.7%	854.0	0.0589	33.3%	1689.4	0.0476
1997	78.6%	1166.2	0.0598	38.5%	1505.2	0.0318
1998	57.1%	725.6	0.0726	0.0%	--	--
1999	50.0%	658.5	0.0550	25.0%	2549.1	0.0324
2000	78.6%	894.8	0.0679	41.2%	1857.3	0.0436
Total	68.6%	785.8	0.0687	26.0%	1840.7	0.0401

NOTES:

1. Inversion is defined as three NOAA weather balloon elevation readings showing consecutive increases in temperature with height (below 3000m).
2. Balloons were released each day at 6:00 AM and 6:00 PM. Height is defined as elevation in meters where temperature first decreases and is averaged only over those days with inversions.
3. Strength is the maximum temperature gradient in degrees Centigrade per meter within the inversion layer.

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TABLE 2.7-22

INVERSION HEIGHTS AND STRENGTHS, JACKSON, MISSISSIPPI INTERNATIONAL
AIRPORT, MARCH 1992 – 2000 (NCDC DATA)

March	% Mornings with Inversions	Average Height	Average Strength	% Afternoons with inversions	Average Height	Average Strength
1992	58.6%	943.3	0.0446	31.0%	1614.6	0.0384
1993	65.2%	863.3	0.0588	23.5%	2139.9	0.0273
1994	73.7%	526.1	0.0725	25.0%	1679.0	0.0324
1995	50.0%	843.2	0.0755	5.9%	2576.0	0.0205
1996	62.5%	565.5	0.0717	20.0%	1447.7	0.0835
1997	60.0%	883.8	0.0694	12.5%	2514.2	0.0320
1998	38.5%	498.1	0.0547	28.6%	2453.1	0.0382
1999	55.6%	500.9	0.0654	25.0%	1644.3	0.0149
2000	58.8%	936.5	0.0549	18.8%	1901.8	0.0213
Total	59.2%	753.8	0.0621	21.4%	1848.3	0.0356

NOTES:

1. Inversion is defined as three NOAA weather balloon elevation readings showing consecutive increases in temperature with height (below 3000m).
2. Balloons were released each day at 6:00 AM and 6:00 PM. Height is defined as elevation in meters where temperature first decreases and is averaged only over those days with inversions.
3. Strength is the maximum temperature gradient in degrees Centigrade per meter within the inversion layer.

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TABLE 2.7-23

INVERSION HEIGHTS AND STRENGTHS, JACKSON, MISSISSIPPI INTERNATIONAL
AIRPORT, APRIL 1992 – 2000 (NCDC DATA)

April	% Mornings with Inversions	Average Height	Average Strength	% Afternoons with inversions	Average Height	Average Strength
1992	76.7%	783.9	0.0488	26.7%	2086.4	0.0376
1993	75.0%	731.5	0.0511	37.5%	2034.0	0.0390
1994	72.2%	667.8	0.0788	7.1%	556.0	0.0236
1995	63.6%	951.4	0.0603	13.0%	1439.0	0.0249
1996	80.0%	841.4	0.0528	33.3%	1874.2	0.0207
1997	57.9%	794.4	0.0720	9.1%	982.0	0.0167
1998	58.8%	565.0	0.0620	27.3%	2261.3	0.0292
1999	40.0%	1751.8	0.0264	0.0%	--	--
2000	68.8%	905.8	0.0642	14.3%	1948.0	0.0343
Total	66.7%	837.2	0.0582	19.0%	1869.9	0.0307

NOTES:

1. Inversion is defined as three NOAA weather balloon elevation readings showing consecutive increases in temperature with height (below 3000m).
2. Balloons were released each day at 6:00 AM and 6:00 PM. Height is defined as elevation in meters where temperature first decreases and is averaged only over those days with inversions.
3. Strength is the maximum temperature gradient in degrees Centigrade per meter within the inversion layer.

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TABLE 2.7-24

INVERSION HEIGHTS AND STRENGTHS, JACKSON, MISSISSIPPI INTERNATIONAL
AIRPORT, MAY 1992 – 2000 (NCDC DATA)

May	% Mornings with Inversions	Average Height	Average Strength	% Afternoons with inversions	Average Height	Average Strength
1992	61.5%	713.5	0.0518	26.9%	2167.9	0.0452
1993	50.0%	449.8	0.0495	0.0%	--	--
1994	65.2%	696.7	0.0600	14.3%	1311.0	0.0280
1995	36.8%	786.6	0.0528	9.1%	438.0	0.0500
1996	58.8%	1129.4	0.0450	30.0%	2190.0	0.0302
1997	44.4%	522.4	0.0646	20.0%	1824.8	0.0179
1998	60.0%	798.2	0.0767	25.0%	1303.4	0.0291
1999	50.0%	411.9	0.0613	0.0%	--	--
2000	61.1%	603.3	0.0409	20.0%	2278.4	0.0087
Total	54.9%	694.3	0.0560	18.1%	1910.8	0.0340

NOTES:

1. Inversion is defined as three NOAA weather balloon elevation readings showing consecutive increases in temperature with height (below 3000m).
2. Balloons were released each day at 6:00 AM and 6:00 PM. Height is defined as elevation in meters where temperature first decreases and is averaged only over those days with inversions.
3. Strength is the maximum temperature gradient in degrees Centigrade per meter within the inversion layer.

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TABLE 2.7-25

INVERSION HEIGHTS AND STRENGTHS, JACKSON, MISSISSIPPI INTERNATIONAL
AIRPORT, JUNE 1992 – 2000 (NCDC DATA)

June	% Mornings with Inversions	Average Height	Average Strength	% Afternoons with inversions	Average Height	Average Strength
1992	50.0%	550.4	0.0470	7.4%	1240.7	0.0283
1993	78.6%	745.6	0.0330	0.0%	--	--
1994	38.9%	503.0	0.0403	20.0%	324.0	0.0304
1995	80.0%	524.6	0.0622	18.2%	2402.0	0.0312
1996	42.1%	415.2	0.0368	0.0%	--	--
1997	23.8%	1036.5	0.0263	8.3%	502.9	0.0024
1998	30.0%	688.7	0.0368	14.3%	1941.0	0.0438
1999	25.0%	387.9	0.0278	7.7%	691.0	0.0080
2000	38.9%	668.9	0.0446	20.0%	373.0	0.0119
Total	44.4%	595.4	0.0431	9.3%	1235.3	0.0239

NOTES:

1. Inversion is defined as three NOAA weather balloon elevation readings showing consecutive increases in temperature with height (below 3000m).
2. Balloons were released each day at 6:00 AM and 6:00 PM. Height is defined as elevation in meters where temperature first decreases and is averaged only over those days with inversions.
3. Strength is the maximum temperature gradient in degrees Centigrade per meter within the inversion layer.

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TABLE 2.7-26

INVERSION HEIGHTS AND STRENGTHS, JACKSON, MISSISSIPPI INTERNATIONAL
AIRPORT, JULY 1992 – 2000 (NCDC DATA)

July	% Mornings with Inversions	Average Height	Average Strength	% Afternoons with inversions	Average Height	Average Strength
1992	51.6%	462.1	0.0409	6.5%	453.8	0.0819
1993	21.4%	388.2	0.0208	0.0%	--	--
1994	34.6%	402.2	0.0390	0.0%	--	--
1995	52.2%	406.7	0.0411	0.0%	--	--
1996	47.6%	418.3	0.0311	5.9%	1045.8	0.0345
1997	56.7%	454.3	0.0257	6.3%	452.0	0.0281
1998	33.3%	449.6	0.0411	0.0%	--	--
1999	37.5%	459.3	0.0265	0.0%	--	--
2000	57.9%	446.5	0.0497	0.0%	--	--
Total	45.1%	437.7	0.0359	3.0%	601.3	0.0566

NOTES:

1. Inversion is defined as three NOAA weather balloon elevation readings showing consecutive increases in temperature with height (below 3000m).
2. Balloons were released each day at 6:00 AM and 6:00 PM. Height is defined as elevation in meters where temperature first decreases and is averaged only over those days with inversions.
3. Strength is the maximum temperature gradient in degrees Centigrade per meter within the inversion layer.

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TABLE 2.7-27

INVERSION HEIGHTS AND STRENGTHS, JACKSON, MISSISSIPPI INTERNATIONAL
AIRPORT, AUGUST 1992 – 2000 (NCDC DATA)

August	% Mornings with Inversions	Average Height	Average Strength	% Afternoons with inversions	Average Height	Average Strength
1992	48.4%	774.7	0.0434	19.4%	2282.3	0.0263
1993	57.1%	406.7	0.0322	6.3%	1936.0	0.0269
1994	53.8%	662.2	0.0433	5.6%	288.8	0.0529
1995	75.0%	386.2	0.0337	7.7%	573.0	0.0345
1996	46.4%	385.1	0.0397	5.9%	2179.7	0.0250
1997	64.0%	430.6	0.0399	25.0%	1379.4	0.0296
1998	64.3%	402.4	0.0372	6.7%	404.0	0.0611
1999	52.2%	423.4	0.0458	0.0%	--	--
2000	42.1%	419.6	0.0436	0.0%	--	--
Total	56.0%	478.6	0.0395	10.6%	1658.1	0.0319

NOTES:

1. Inversion is defined as three NOAA weather balloon elevation readings showing consecutive increases in temperature with height (below 3000m).
2. Balloons were released each day at 6:00 AM and 6:00 PM. Height is defined as elevation in meters where temperature first decreases and is averaged only over those days with inversions.
3. Strength is the maximum temperature gradient in degrees Centigrade per meter within the inversion layer.

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TABLE 2.7-28

INVERSION HEIGHTS AND STRENGTHS, JACKSON, MISSISSIPPI INTERNATIONAL
AIRPORT, SEPTEMBER 1992 – 2000 (NCDC DATA)

September	% Mornings with Inversions	Average Height	Average Strength	% Afternoons with inversions	Average Height	Average Strength
1992	50.0%	800.4	0.0350	13.3%	1552.7	0.0235
1993	68.2%	664.3	0.0484	0.0%	--	--
1994	57.9%	673.4	0.0573	15.4%	2378.3	0.0408
1995	67.9%	598.2	0.0589	30.8%	1976.1	0.0428
1996	59.1%	619.2	0.0454	0.0%	--	--
1997	66.7%	533.5	0.0484	17.6%	2712.0	0.0270
1998	56.3%	540.2	0.0429	0.0%	--	--
1999	68.8%	450.4	0.0545	7.1%	3044.0	0.0292
2000	42.1%	481.4	0.0496	26.7%	2025.0	0.0399
Total	59.6%	608.1	0.0491	12.2%	2119.6	0.0343

NOTES:

1. Inversion is defined as three NOAA weather balloon elevation readings showing consecutive increases in temperature with height (below 3000m).
2. Balloons were released each day at 6:00 AM and 6:00 PM. Height is defined as elevation in meters where temperature first decreases and is averaged only over those days with inversions.
3. Strength is the maximum temperature gradient in degrees Centigrade per meter within the inversion layer.

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TABLE 2.7-29

INVERSION HEIGHTS AND STRENGTHS, JACKSON, MISSISSIPPI INTERNATIONAL
AIRPORT, OCTOBER 1992 – 2000 (NCDC DATA)

October	% Mornings with Inversions	Average Height	Average Strength	% Afternoons with inversions	Average Height	Average Strength
1992	83.9%	660.8	0.0731	35.5%	1694.4	0.0408
1993	82.4%	754.7	0.0734	31.3%	1901.6	0.0398
1994	54.5%	612.0	0.0654	14.3%	2186.8	0.0563
1995	57.1%	767.1	0.0647	34.8%	1506.6	0.0455
1996	59.1%	594.2	0.0975	12.5%	2428.5	0.0526
1997	78.9%	751.4	0.0597	24.0%	1635.7	0.0345
1998	76.2%	499.0	0.0827	29.2%	1741.9	0.0352
1999	68.4%	423.7	0.0683	20.0%	1658.8	0.0250
2000	75.0%	412.7	0.0870	23.8%	2053.3	0.0298
Total	70.8%	610.1	0.0748	26.0%	1777.3	0.0393

NOTES:

1. Inversion is defined as three NOAA weather balloon elevation readings showing consecutive increases in temperature with height (below 3000m).
2. Balloons were released each day at 6:00 AM and 6:00 PM. Height is defined as elevation in meters where temperature first decreases and is averaged only over those days with inversions.
3. Strength is the maximum temperature gradient in degrees Centigrade per meter within the inversion layer.

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TABLE 2.7-30

INVERSION HEIGHTS AND STRENGTHS, JACKSON, MISSISSIPPI INTERNATIONAL
AIRPORT, NOVEMBER 1992 – 2000 (NCDC DATA)

November	% Mornings with Inversions	Average Height	Average Strength	% Afternoons with inversions	Average Height	Average Strength
1992	75.0%	1183.0	0.0572	42.9%	1547.5	0.0472
1993	81.0%	585.2	0.0926	38.1%	1353.0	0.0707
1994	47.1%	814.2	0.0599	56.5%	1639.3	0.0396
1995	77.8%	519.8	0.0589	28.6%	1492.7	0.0440
1996	66.7%	698.6	0.0609	40.0%	1625.1	0.0396
1997	77.3%	555.8	0.0332	52.4%	1433.9	0.0325
1998	73.7%	712.5	0.0611	72.7%	1694.5	0.0442
1999	80.0%	462.5	0.0737	21.7%	1398.6	0.0368
2000	47.4%	439.2	0.0673	42.3%	1485.8	0.0293
Total	70.3%	685.5	0.0626	43.9%	1543.2	0.0422

NOTES:

1. Inversion is defined as three NOAA weather balloon elevation readings showing consecutive increases in temperature with height (below 3000m).
2. Balloons were released each day at 6:00 AM and 6:00 PM. Height is defined as elevation in meters where temperature first decreases and is averaged only over those days with inversions.
3. Strength is the maximum temperature gradient in degrees Centigrade per meter within the inversion layer.

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TABLE 2.7-31

INVERSION HEIGHTS AND STRENGTHS, JACKSON, MISSISSIPPI INTERNATIONAL
AIRPORT, DECEMBER 1992 – 2000 (NCDC DATA)

December	% Mornings with Inversions	Average Height	Average Strength	% Afternoons with inversions	Average Height	Average Strength
1992	77.4%	1066.4	0.0556	66.7%	1515.1	0.0277
1993	64.7%	874.1	0.0662	40.9%	1398.2	0.0755
1994	77.3%	817.8	0.0672	51.9%	1337.9	0.0594
1995	64.7%	913.9	0.0671	54.5%	1596.9	0.0464
1996	64.3%	424.2	0.0767	26.3%	1625.1	0.0372
1997	68.8%	865.0	0.0703	37.5%	1531.1	0.0475
1998	56.3%	879.7	0.0527	42.1%	1736.8	0.0452
1999	85.7%	691.0	0.0642	36.4%	1774.9	0.0437
2000	77.8%	745.5	0.0316	52.9%	1226.6	0.0549
Total	72.1%	833.0	0.0603	46.5%	1508.7	0.0472

NOTES:

1. Inversion is defined as three NOAA weather balloon elevation readings showing consecutive increases in temperature with height (below 3000m).
2. Balloons were released each day at 6:00 AM and 6:00 PM. Height is defined as elevation in meters where temperature first decreases and is averaged only over those days with inversions.
3. Strength is the maximum temperature gradient in degrees Centigrade per meter within the inversion layer.

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TABLE 2.7-32

INVERSION HEIGHTS AND STRENGTHS, JACKSON, MISSISSIPPI INTERNATIONAL
AIRPORT, ANNUAL 1992 – 2000 (NCDC DATA)

Annual	% Mornings with Inversions	Average Height	Average Strength	% Afternoons with inversions	Average Height	Average Strength
1992	63.9%	795.5	0.0552	28.0%	1669.6	0.0350
1993	64.3%	684.2	0.0594	22.6%	1589.3	0.0528
1994	60.2%	662.7	0.0653	29.2%	1532.3	0.0456
1995	63.3%	694.1	0.0559	24.0%	1564.7	0.0399
1996	58.3%	652.3	0.0570	19.3%	1727.5	0.0400
1997	60.3%	699.5	0.0512	27.5%	1542.3	0.0359
1998	57.2%	623.5	0.0574	26.9%	1761.1	0.0396
1999	54.0%	584.7	0.0568	17.6%	1732.5	0.0333
2000	58.4%	675.3	0.0549	29.8%	1684.4	0.0355
Total	60.3%	685.3	0.0569	25.3%	1640.0	0.0393

NOTES:

1. Inversion is defined as three NOAA weather balloon elevation readings showing consecutive increases in temperature with height (below 3000m).
2. Balloons were released each day at 6:00 AM and 6:00 PM. Height is defined as elevation in meters where temperature first decreases and is averaged only over those days with inversions.
3. Strength is the maximum temperature gradient in degrees Centigrade per meter within the inversion layer.

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TABLE 2.7-33
(UFSAR TABLE 2.3-134)

NUMBER OF INVERSION¹ OCCURRENCES DURING JANUARY AT JACKSON, MISSISSIPPI

Duration ²	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	Mean
1	7	10	7	9	9	6	11	10	15	12	10
2	2	8	5	6	5	4	2	3		5	4
3	3	2	4	1	2	2	3	2	1	3	2
4	2	2			4	1	4	1	2	2	2
5	3	1	2	3	2	3	1	1	1	3	2
6	1	4	1	3	3		1			1	1
7	2	1	1	1			1	2	2	1	1
8			1	1			2			1	1
9	2			2	1	4		1			1
10		3	1								1
11			1	1			1	1			*
12	1			1	1	2				1	1
13	1			1		1		3	2		1
14		2	1	3			1	1	2	4	1
15	8			3	5	4	4	3	3	1	3
16	2	7	2	8	6	5	9	5	5	4	5
17											
≥18											
Total ³	34	40	26	43	38	32	40	33	33	38	36

NOTES:

1. Based on Pasquill-Turner calculation of E, F or G from hourly surface observations.
2. Consecutive hours of E, F or G stability for each discreet occurrence.
3. Number of discrete occurrences. (No entry in tables means “zero”).

* = Less than 1

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TABLE 2.7-34
(UFSAR TABLE 2.3-135)

NUMBER OF INVERSION¹ OCCURRENCES DURING FEBRUARY AT JACKSON, MISSISSIPPI

Duration ²	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	Mean
1	10	10	10	5	11	4	6	9	6	12	8
2	6	3	4	4	3	6	3	4	3		4
3	3	1	3	3	4	5		4	1	4	3
4	3	2	1	2	2	1	1	3			2
5		1	4	1	1	1		2	1	3	1
6	2	1	4	2	1	1	1	3	4	4	2
7		1	2		1	2	1	2	3		1
8	1	1				1		2			1
9	2	1	1	1			1				1
10			1			1	1	1		3	1
11	1	1	1	1	1		1		1		1
12			1	2				1	1	2	1
13		1	1	3	1		2	2	2	2	1
14	3	1		3	3	1	5	2	4	3	2
15	3	4	5	5	5	8	6	4	5	3	5
16											
17											
≥18											
Total ³	34	28	38	32	33	31	28	39	31	36	34

NOTES:

1. Based on Pasquill-Turner calculation of E, F or G from hourly surface observations.
2. Consecutive hours of E, F or G stability for each discrete occurrence.
3. Number of discrete occurrences. (No entry in tables means “zero”).

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TABLE 2.7-35
(UFSAR TABLE 2.3-136)

NUMBER OF INVERSION¹ OCCURRENCES DURING MARCH AT JACKSON, MISSISSIPPI

Duration ²	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	Mean
1	11	14	13	7	9	10	15	8	7	5	10
2	6	2	5	6	6	8	8	1	4	2	5
3	6	3	3	4	1	4	1	5		1	3
4	7	1	4	2	4	1		3	4	1	3
5	2	1	1		3	1	1	1	1	1	1
6	3	3	1	1		3	3		2	1	2
7	2	1	1	3	1	1	3		2		1
8	1		3			2		1	1	1	1
9		2	1	2		3			3	1	1
10		1	2	3	1			1			1
11	1		2	1	3	3	1		1	2	1
12		1	1		1		1	1	1	3	1
13	4	5	2	3	3	3	2	6	4	2	3
14	3	4	4	3	5	4	7	5	6	4	4
15			1	1	2		1				1
16											
17											
≥18											
Total ³	46	38	44	36	39	43	43	33	36	24	38

NOTES:

1. Based on Pasquill-Turner calculation of E, F or G from hourly surface observations.
2. Consecutive hours of E, F or G stability for each discrete occurrence.
3. Number of discrete occurrences. (No entry in tables means “zero”).

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TABLE 2.7-36
(UFSAR TABLE 2.3-137)

NUMBER OF INVERSION¹ OCCURRENCES DURING APRIL AT JACKSON, MISSISSIPPI

Duration ²	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	Mean
1	11	12	8	12	11	8	9	12	20	10	11
2	5	6	3	2	8	7	6	5	5	8	6
3	1	1	7	7	1	10	2	2	4	2	4
4		1	1	1	2	3	2	2	5	2	2
5		2	2	5		2	1	1	3	3	2
6	4			3	3	1	2	1	3	1	2
7				2	1	1	1	1	1		1
8		1	1	1		1	1	2	2	2	1
9	1	1	2					4		1	1
10		2	1		1		2	2	1		1
11	2		1	1	1			1			1
12	1	2	6	2	2	1	2		1		1
13	11	10	5	8	10	13	12	9	5	5	9
14											
15											
16											
17											
≥18											
Total ³	36	38	37	44	40	47	40	42	50	34	43

NOTES:

1. Based on Pasquill-Turner calculation of E, F or G from hourly surface observations.
2. Consecutive hours of E, F or G stability for each discrete occurrence.
3. Number of discrete occurrences. (No entry in tables means “zero”).

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TABLE 2.7-37
(UFSAR TABLE 2.3-138)

NUMBER OF INVERSION¹ OCCURRENCES DURING MAY AT JACKSON, MISSISSIPPI

Duration ²	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	Mean
1	7	8	11	8	11	2	7	3	3	6	7
2	3	5	5	3	5	2	3	2	4	4	4
3	5	6	2	1	4		4	2	5	1	3
4	1	2	6	2		1	3	1	2	3	2
5	4	6	3	2	4	2	3	2	2	1	3
6	1	3	1	1		2	3		2		1
7	3		1	1	1	4	4		2	3	2
8	1		1	2		2	2	1	1	1	1
9	1	4	1	2		1			3	1	1
10				1	4			2	3	1	1
11	6	3	2	2	1	2	4	2	3	1	3
12	3	6	6	6	5	10	5	8	3	11	6
13	8	5	6	7	10	7	7	14	9	4	8
14											
15											
16											
17											
≥18											
Total ³	43	48	45	38	45	35	45	37	42	37	42

NOTES:

1. Based on Pasquill-Turner calculation of E, F or G from hourly surface observations.
2. Consecutive hours of E, F or G stability for each discrete occurrence.
3. Number of discrete occurrences. (No entry in tables means “zero”).

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TABLE 2.7-38
(UFSAR TABLE 2.3-139)

NUMBER OF INVERSION OCCURRENCES DURING JUNE AT JACKSON, MISSISSIPPI

Duration ²	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	Mean
1	1	3	6	7	7	2	6	8	8	9	6
2	2	4	6	1	5	2	2	4	3	4	4
3	2	1	4	3	3	1	2	2	3	3	2
4	2	2		3		3			3	1	1
5	1	1	3	5	2	1	3	4		3	2
6	1	1	2	1	1	1			2	2	1
7		2	2	1	2			1	1	3	1
8			3	2	2	1		3	1	2	1
9	2	2	1			1	2	1	1		1
10		1	1	3				6	2		1
11	23	18	15	15	20	23	18	14	16	18	18
12											
13											
14											
15											
16											
17											
≥18											
Total ³	34	35	43	41	42	35	33	43	40	45	38

NOTES:

1. Based on Pasquill-Turner calculation of E, F or G from hourly surface observations.
2. Consecutive hours of E, F or G stability for each discrete occurrence.
3. Number of discrete occurrences. (No entry in tables means “zero”).

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TABLE 2.7-39
(UFSAR TABLE 2.3-140)

NUMBER OF INVERSION¹ OCCURRENCES DURING JULY AT JACKSON, MISSISSIPPI

Duration ²	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	Mean
1	4	3	3	12	6	5	3	3	7	5	5
2	2	4	5	5	4		1	3	2	7	3
3	3	5	1	4	1	1	2		4	3	2
4	3	2		2		2	1	1	4	1	2
5	2	2	2	1	3	4	2	5	3	4	3
6		2	1	3	1	1				1	1
7	1	1	1	3	3		3	1	5	3	2
8	2	3	3	3	2	2		2	2	3	2
9	3	1	2		2		2		2	2	1
10	2	2	2	2	2	8	1		1		2
11	7	5	7	6	6	7	6	9	6	6	6
12	10	13	13	8	12	10	15	15	9	8	11
13											
14											
15											
16											
17											
≥18											
Total ³	39	43	40	49	42	40	36	39	45	43	40

NOTES:

1. Based on Pasquill-Turner calculation of E, F or G from hourly surface observations.
2. Consecutive hours of E, F or G stability for each discrete occurrence.
3. Number of discrete occurrences. (No entry in tables means “zero”).

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TABLE 2.7-40
(UFSAR TABLE 2.3-141)

NUMBER OF INVERSION¹ OCCURRENCES DURING AUGUST AT JACKSON, MISSISSIPPI

Duration ²	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	Mean
1	5	6	6	5	8	9	9	4	4	7	6
2	1	3	2	2	2	3	4	2	2	11	3
3	2	2	3	3		2	2		3	2	2
4	3		1	1	1	2	1	3		2	1
5	1	3	2	3		4	3	3	2	5	3
6	1		1	1	1	2	3	2	1	2	1
7	1	1			2	1		2	2	2	1
8	3	2	3		1	1	1				1
9	2	1	1	3	3	1	2		2		2
10	2		3		5	2	1	1	2	1	2
11	1	2	2	2	1	4	3	5	3	4	3
12		2	2	1	2	3	1	2	2	4	2
13	18	19	17	20	16	12	17	17	18	9	16
14											
15											
16											
17											
≥18											
Total ³	40	41	43	41	42	46	47	41	41	49	43

NOTES:

1. Based on Pasquill-Turner calculation of E, F or G from hourly surface observations.
2. Consecutive hours of E, F or G stability for each discrete occurrence.
3. Number of discrete occurrences. (No entry in tables means “zero”).

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TABLE 2.7-41
(UFSAR TABLE 2.3-142)

NUMBER OF INVERSION¹ OCCURRENCES DURING SEPTEMBER AT JACKSON,
MISSISSIPPI

Duration ²	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	Mean
1	3	5	4	9	6	2	9	6	4	8	6
2	5	3	2	5	3	2	5	2	6	2	4
3	2	2	5	1	4		4	3	3	1	2
4	1		1	2	1	4	1		1	1	1
5	1		1	2	3	2	2	3	2	2	2
6			5	3	4	1		2		2	2
7		1	2	1	1	3	3	4	4	1	2
8	1		3	1	1	2	1	1	1		1
9		2	2		2		2	1			1
10	1	2	1	3		1	1	1	1	2	1
11	2	2	2		1			2	2		1
12		1			1	2	1	4	2		1
13	20	18	4	8	11	13	10	12	14	13	12
14	3	2	2	4	2	2	5	2	1	1	2
15											
16											
17											
≥18											
Total ³	39	38	34	39	40	34	44	43	41	33	38

NOTES:

1. Based on Pasquill-Turner calculation of E, F or G from hourly surface observations.
2. Consecutive hours of E, F or G stability for each discrete occurrence.
3. Number of discrete occurrences. (No entry in tables means “zero”).

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TABLE 2.7-42
(UFSAR TABLE 2.3-143)

NUMBER OF INVERSION¹ OCCURRENCES DURING OCTOBER AT JACKSON,
MISSISSIPPI

Duration ²	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	Mean
1	4	4	7	7	6	3	6	10	3	10	6
2	2	5	5	1	3	3	3	5	1	3	3
3	2	2	3	2	3	4	1	5		4	3
4	2		2	1	4	1	1	2	1	4	2
5	2	2		1	3			1	2	3	1
6	1	1		1	1				1		1
7	1	1	2	1	1	2	2	3		2	2
8	2			2	2		1				1
9	3	1	2	2		1		2	1		1
10			2	2	2		2	5	1		1
11	2		1	3			1		2		1
12	2	2			3		1		2		1
13		2	2	1	1	1	1	1		1	1
14	4	6	8	2	3	8	5	6	8	5	6
15	14	13	5	14	4	14	14	6	16	13	11
16											
17											
≥18											
Total ³	41	39	39	40	36	37	38	50	36	45	41

NOTES:

1. Based on Pasquill-Turner calculation of E, F or G from hourly surface observations.
2. Consecutive hours of E, F or G stability for each discreet occurrence.
3. Number of discrete occurrences. (No entry in tables means “zero”).

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TABLE 2.7-43
(UFSAR TABLE 2.3-144)

NUMBER OF INVERSION¹ OCCURRENCES DURING NOVEMBER AT JACKSON,
MISSISSIPPI

Duration ²	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	Mean
1	14	9	10	4	10	8	7	7	20	5	9
2	6	1	12	1	3	1	2	1	2	10	4
3	4	5	1	2	2	3	2	4	2	4	3
4	2	3	1		1	2	1	4	5	1	2
5	2	3	5	1	2	2	3	4	1	3	3
6	4	1	2		1	3	3	2	1		2
7	1	2	1		2	2	1	2	3	2	2
8	1	2	2	1	3		2	1	1	1	1
9	1	1					1	1		1	1
10	1	1	2	1		2	1		2	3	1
11		1			2					1	*
12		1		1	1	1	1			1	1
13		1			1	3	1	1		1	1
14		2	2	2	1		1		1	1	1
15	5	8	1	9	5	8	4	6	9	8	6
16	5	3	3	6	5	5	3	3	2	1	4
17											
≥18											
Total ³	46	44	42	28	39	40	33	36	49	43	41

NOTES:

1. Based on Pasquill-Turner calculation of E, F or G from hourly surface observations.
2. Consecutive hours of E, F or G stability for each discrete occurrence.
3. Number of discrete occurrences. (No entry in tables means “zero”).

* Less than one-half but greater than zero.

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TABLE 2.7-44
(UFSAR TABLE 2.3-145)

NUMBER OF INVERSION¹ OCCURRENCES DURING DECEMBER AT JACKSON,
MISSISSIPPI

Duration ²	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	Mean
1	7	12	10	8	6	14	11	8	5	7	10
2	3	1	3	6	4	3	6	8	3	2	4
3	3	3	5	1	1	3	1	2	4	3	3
4	1	2	4	2	1	3	3	3	5	4	3
5	1	2	1	1	3			2	1	1	1
6		3	1	1	2	1	2	2	1	3	2
7	3	2		3	5	1	1	2	3		2
8	1	2		1	2	2		2	2		1
9			3			2	1	4		2	1
10	2	2		1	1		2	1	1	2	1
11		1		1	1		1			1	1
12	2		1		1	1		1			1
13	3		2		3		1		2		1
14				1				1	1	1	*
15	2	3	5	2	1	2	2	2	6	1	3
16	4	7	6	7	9	7	6	4	2	2	5
17											
≥18											
Total ³	42	40	41	35	40	39	37	42	36	29	39

NOTES:

1. Based on Pasquill-Turner calculation of E, F or G from hourly surface observations.
2. Consecutive hours of E, F or G stability for each discrete occurrence.
3. Number of discrete occurrences. (No entry in tables means “zero”).

* Less than one-half but greater than zero.

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TABLE 2.7-45
(UFSAR TABLE 2.3-146)

MEAN NUMBER OF INVERSION¹ OCCURRENCES DURING 1955-1964
AT JACKSON, MISSISSIPPI

Duration ²	Months												Annual
	J	F	M	A	M	J	J	A	S	O	N	D	
1	10	8	10	11	7	6	5	6	6	6	9	10	94
2	4	4	5	6	4	4	3	3	4	3	4	4	48
3	2	3	3	4	3	2	2	2	2	3	3	3	32
4	2	2	3	2	2	1	2	1	1	2	2	3	23
5	2	1	1	2	3	2	3	3	2	1	3	1	24
6	1	2	2	2	1	1	1	1	2	1	2	2	18
7	1	1	1	1	2	1	2	1	2	2	2	2	18
8	1	1	1	1	1	1	2	1	1	1	1	1	13
9	1	1	1	1	1	1	1	2	1	1	1	1	13
10	1	1	1	1	1	1	2	2	1	1	1	1	14
11	*	1	1	1	3	18	6	3	1	1	*	1	36
12	1	1	1	2	6		11	2	1	1	1	1	28
13	1	1	3	9	8			16	12	1	1	1	53
14	1	2	4						2		1	*	16
15	3	5	1							11	6	3	29
16	5										4	5	14
17													
≥18													
Total ³	36	34	38	43	42	38	40	43	38	41	41	39	473

NOTES:

1. Based on Pasquill-Turner calculation of E, F or G from hourly surface observations.
2. Consecutive hours of E, F or G stability for each discrete occurrence.
3. Number of discrete occurrences. (No entry in tables means “zero”).

* Less than one but greater than zero.

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TABLE 2.7-46
(UFSAR TABLE 2.3-147)

PERCENT OF HOURS WITH INVERSION*
AT JACKSON, MISSISSIPPI

YEAR	J	F	M	A	M	J	J	A	S	O	N	D	ANNUAL
1955	34.7	26.6	30.1	32.5	40.6	41.8	41.1	47.0	51.4	53.8	37.4	33.2	39.3
1956	33.1	23.8	29.8	32.2	40.0	37.9	44.0	48.1	49.7	51.2	47.2	37.2	39.6
1957	17.1	32.6	33.6	32.4	36.0	38.8	44.9	49.6	31.9	41.7	29.4	39.5	35.7
1958	45.8	36.8	29.7	34.0	37.2	38.8	39.2	48.9	36.5	50.4	42.5	33.3	39.5
1959	35.1	29.2	34.4	33.1	40.5	40.6	43.4	48.9	40.8	33.9	41.1	44.4	38.8
1960	33.9	31.6	32.7	38.3	42.7	41.9	45.0	45.8	42.5	51.5	47.2	32.5	40.5
1961	40.7	36.5	32.3	37.1	41.5	34.3	43.0	48.7	43.6	50.7	33.8	31.7	39.5
1962	32.7	35.0	30.8	35.3	47.7	41.1	45.7	49.9	49.3	49.5	34.9	35.0	40.6
1963	30.1	36.5	34.4	28.5	43.2	37.1	41.3	50.5	45.4	56.4	40.4	35.5	40.0
1964	29.8	34.2	24.7	21.0	37.2	40.6	38.0	42.1	34.9	47.2	42.1	22.7	34.5
MEAN	33.3	32.3	31.2	32.4	40.7	39.3	42.6	48.0	42.6	48.6	36.6	34.5	38.8

* Based on Pasquill-Turner calculations of E, F or G stability from hourly surface observations.

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TABLE 2.7-47
(UFSAR TABLE 2.3-148)

NUMBER OF INVERSION OCCURRENCES
DURING JANUARY AT GRAND GULF SITE

Duration (hrs.)	1973	1974	1976	Total
1	4	11	9	24
2	5	8	7	20
3	1	11	4	16
4	3	6	4	13
5	2	2	1	5
6	6	2	3	11
7	11	8	9	28
8	1	3	7	11
9	11	6	2	19
10	1	0	0	1
11	0	0	0	0
12	0	2	0	2
13	0	0	0	0
14	0	1	0	1
15	0	0	0	0
16	0	0	0	0
17	0	0	0	0
≥18	0	0	0	0
Total Number of Discrete Events	45	61	46	152

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TABLE 2.7-48
(UFSAR TABLE 2.3-149)

NUMBER OF INVERSION OCCURRENCES
DURING FEBRUARY AT GRAND GULF SITE

Duration (hrs.)	1973	1974	1976	Total
1	4	3	6	13
2	2	1	5	8
3	3	2	4	9
4	3	1	4	8
5	2	4	2	8
6	13	8	1	32
7	9	6	4	19
8	9	5	9	23
9	3	14	5	22
10	1	1	0	2
11	0	0	0	0
12	0	0	0	0
13	0	0	0	0
14	0	0	0	0
15	0	0	0	0
16	0	0	0	0
17	0	0	0	0
≥18	0	0	0	0
Total Number of Discrete Events	49	47	50	146

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TABLE 2.7-49
(UFSAR TABLE 2.3-150)

NUMBER OF INVERSION OCCURRENCES
DURING MARCH AT GRAND GULF SITE

Duration (hrs.)	1973	1974	1976	Total
1	11	7	14	32
2	4	8	6	18
3	6	5	2	13
4	3	5	3	13
5	3	2	2	11
6	14	16	11	41
7	10	8	3	21
8	6	10	4	20
9	2	1	1	4
10	1	0	0	1
11	0	0	0	0
12	0	2	0	2
13	0	0	0	0
14	0	1	0	1
15	0	0	0	0
16	0	0	0	0
17	0	0	0	0
≥18	0	0	0	0
Total Number of Discrete Events	60	62	46	168

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TABLE 2.7-50
(UFSAR TABLE 2.3-151)

NUMBER OF INVERSION OCCURRENCES
DURING APRIL AT GRAND GULF SITE

Duration (hrs.)	1973	1974	1976	Total
1	9	8	8	25
2	5	5	2	12
3	6	5	4	15
4	1	8	4	13
5	4	3	8	15
6	17	16	13	46
7	7	14	11	32
8	6	7	10	23
9	0	0	0	0
10	0	0	0	0
11	0	0	0	0
12	0	0	0	0
13	0	0	0	0
14	0	0	0	0
15	0	0	0	0
16	0	0	0	0
17	0	0	0	0
≥18	0	0	0	0
Total Number of Discrete Events	55	66	60	181

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TABLE 2.7-51
(UFSAR TABLE 2.3-152)

NUMBER OF INVERSION OCCURRENCES
DURING MAY AT GRAND GULF SITE

Duration (hrs.)	1973	1974	1976	Total
1	11	8	6	25
2	3	3	6	12
3	5	3	1	9
4	7	3	4	14
5	3	3	1	7
6	22	21	22	65
7	16	15	13	44
8	4	8	2	14
9	0	3	1	4
10	0	0	0	0
11	0	0	0	0
12	0	1	0	1
13	0	0	0	0
14	0	0	0	0
15	0	0	0	0
16	0	0	0	0
17	0	0	0	0
≥18	0	0	0	0
Total Number of Discrete Events	71	68	56	195

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TABLE 2.7-52
(UFSAR TABLE 2.3-153)

NUMBER OF INVERSION OCCURRENCES
DURING JUNE AT GRAND GULF SITE

Duration (hrs.)	1973	1974	1976	Total
1	3	8	12	23
2	3	2	5	10
3	2	1	4	7
4	3	2	2	7
5	7	6	3	16
6	22	22	19	63
7	25	15	14	54
8	0	6	4	10
9	0	3	0	3
10	1	2	0	3
11	0	0	0	0
12	0	0	0	0
13	0	0	0	0
14	0	0	0	0
15	0	0	0	0
16	0	0	0	0
17	0	0	0	0
≥18	0	0	0	0
Total Number of Discrete Events	66	67	43	196

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TABLE 2.7-53
(UFSAR TABLE 2.3-154)

NUMBER OF INVERSION OCCURRENCES
DURING JULY AT GRAND GULF SITE

Duration (hrs.)	1973	1974	1976	Total
1	4	4	9	17
2	1	3	3	7
3	1	1	3	5
4	3	4	7	14
5	7	6	5	18
6	27	17	20	64
7	20	24	20	64
8	3	5	3	11
9	1	0	0	1
10	0	1	0	1
11	0	1	0	1
12	0	0	0	0
13	0	0	0	0
14	0	0	0	0
15	0	0	0	0
16	0	0	0	0
17	0	0	0	0
≥18	0	0	0	0
Total Number of Discrete Events	67	67	70	204

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TABLE 2.7-54
(UFSAR TABLE 2.3-155)

NUMBER OF INVERSION OCCURRENCES
DURING AUGUST AT GRAND GULF SITE

Duration (hrs.)	1973	1974	1976	Total
1	1	5	6	12
2	1	0	2	3
3	1	0	3	4
4	1	2	6	9
5	2	3	3	8
6	7	15	21	43
7	30	28	21	79
8	11	11	8	30
9	5	2	0	7
10	2	1	1	4
11	0	0	0	0
12	0	0	0	0
13	0	0	0	0
14	1	0	0	1
15	0	0	0	0
16	0	0	0	0
17	0	0	0	0
≥18	0	0	0	0
Total Number of Discrete Events	62	67	71	200

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TABLE 2.7-55
(UFSAR TABLE 2.3-156)

NUMBER OF INVERSION OCCURRENCES
DURING SEPTEMBER AT GRAND GULF SITE

Duration (hrs.)	1973	1974	1976	Total
1	4	6	7	17
2	0	3	4	7
3	1	4	3	8
4	4	1	0	5
5	2	6	3	11
6	3	5	8	16
7	34	10	25	69
8	12	1	13	26
9	3	2	0	5
10	0	0	0	0
11	0	0	0	0
12	0	0	0	0
13	0	0	0	0
14	0	0	0	0
15	0	0	0	0
16	0	0	0	0
17	0	0	0	0
≥18	0	0	0	0
Total Number of Discrete Events	63	53	63	179

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TABLE 2.7-56
(UFSAR TABLE 2.3-157)

NUMBER OF INVERSION OCCURRENCES
DURING OCTOBER AT GRAND GULF SITE

Duration (hrs.)	1973	1974	1976	Total
1	5	2	7	14
2	7	2	3	12
3	6	3	5	14
4	4	5	1	10
5	3	0	4	7
6	3	0	4	7
7	22	12	15	49
8	19	22	18	59
9	0	12	1	13
10	0	3	0	3
11	0	0	0	0
12	0	0	0	0
13	0	1	0	1
14	0	0	0	0
15	0	0	0	0
16	0	0	0	0
17	0	0	0	0
≥18	0	0	0	0
Total Number of Discrete Events	69	63	58	190

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TABLE 2.7-57
(UFSAR TABLE 2.3-158)

NUMBER OF INVERSION OCCURRENCES
DURING NOVEMBER AT GRAND GULF SITE

Duration (hrs.)	1973	1974	1976	Total
1	16	6	6	28
2	8	1	2	11
3	3	5	0	8
4	5	3	1	9
5	3	0	0	3
6	3	2	1	6
7	11	8	17	36
8	12	23	13	48
9	2	5	5	12
10	0	4	1	5
11	0	0	0	0
12	0	1	0	1
13	0	3	0	3
14	0	0	0	0
15	0	0	0	0
16	0	0	0	0
17	0	0	0	0
≥18	0	0	0	0
Total Number of Discrete Events	63	65	46	174

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TABLE 2.7-58
(UFSAR TABLE 2.3-159)

NUMBER OF INVERSION OCCURRENCES
DURING DECEMBER AT GRAND GULF SITE

Duration (hrs.)	1973	1974	1976	Total
1	9	4	4	17
2	2	10	4	16
3	4	6	2	12
4	2	2	4	8
5	2	3	2	7
6	7	2	1	10
7	11	14	13	38
8	10	14	7	31
9	14	9	9	32
10	2	0	2	4
11	0	0	0	0
12	0	0	0	0
13	0	0	0	0
14	0	1	0	1
15	0	0	0	0
16	0	0	0	0
17	0	0	0	0
≥18	0	0	0	0
Total Number of Discrete Events	53	65	48	166

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TABLE 2.7-59
(UFSAR TABLE 2.3-160)

NUMBER OF INVERSION OCCURRENCES AT GRAND GULF SITE

Duration (hrs.)	1972-1973	1973-1974	1976	Total
1	81	72	94	247
2	41	46	49	136
3	39	46	35	120
4	39	42	40	121
5	40	38	34	113
6	144	126	134	404
7	206	167	165	538
8	93	124	98	315
9	31	56	24	111
10	8	14	4	26
11	0	1	0	1
12	0	4	0	4
13	0	4	0	4
14	1	2	0	3
15	0	0	0	0
16	0	0	0	0
17	0	0	0	0
≥18	0	0	0	0
Total Number of Discrete Events	723	751	677	2151

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TABLE 2.7-60
(UFSAR TABLE 2.3-161)

PERCENT OF HOURS WITH INVERSION AT GRAND GULF SITE

Month	1972-1973	1973-1974	1976	Annual
Jan	37.1	39.3	28.4	34.8
Feb	43.1	51.8	28.1	44.2
Mar	39.5	41.8	24.5	35.3
Apr	36.1	46.4	43.8	42.1
May	47.2	51.6	39.0	45.9
Jun	52.6	53.6	41.3	49.3
Jul	52.6	55.7	48.5	52.2
Aug	62.5	57.8	54.3	58.2
Sep	57.2	45.2	50.8	51.3
Oct	53.3	65.6	44.9	54.5
Nov	39.6	71.9	41.7	51.2
Dec	40.1	51.3	40.1	46.8
Mean	46.6	52.7	41.2	46.8

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TABLE 2.7-61

MIXING HEIGHTS AT JACKSON INTERNATIONAL AIRPORT

Month	Avg. Morning (m)	Avg. Afternoon (m)
Jan	481.0	765.8
Feb	464.5	1065.2
Mar	514.0	1193.7
Apr	479.9	1418.1
May	462.7	1534.2
Jun	474.5	1684.1
July	401.6	1495.1
Aug	327.9	1818.1
Sep	381.6	1593.1
Oct	316.3	1255.0
Nov	379.6	898.1
Dec	471.8	745.9

NOTES:

1. Data is from the NCDC for the 10 year period of 1992 through 2001

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TABLE 2.7-62

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (MPH)
DURING JANUARY, VICKSBURG, MS

Direction From	Wind Speed (mph)							Avg. Speed
	0-3	4-7	8-12	13-17	18-22	23-27	≥ 28	
	Frequency of Occurrence (%)							Total (%)
N	1.3	5.0	4.9	2.1	0.6	0.0	0.0	13.9
N-NE	0.3	1.9	4.3	1.5	0.2	0.0	0.0	8.2
NE	0.3	2.4	2.5	0.4	0.0	0.0	0.0	5.6
E-NE	0.3	1.5	1.1	0.1	0.0	0.0	0.0	3.0
E	0.6	2.9	0.9	0.1	0.0	0.0	0.0	4.6
E-SE	0.7	3.0	1.3	0.2	0.0	0.0	0.0	5.1
SE	0.6	3.8	2.2	0.4	0.0	0.0	0.0	7.1
S-SE	0.7	4.1	5.4	0.8	0.1	0.0	0.0	11.1
S	0.9	4.2	4.5	1.6	0.2	0.0	0.0	11.4
S-SW	0.4	1.9	3.6	1.2	0.3	0.1	0.0	7.4
SW	0.2	1.4	2.1	0.7	0.2	0.0	0.0	4.7
W-SW	0.1	0.8	0.9	0.1	0.1	0.0	0.0	2.1
W	0.3	1.1	1.1	0.4	0.0	0.0	0.0	2.9
W-NW	0.2	1.3	1.2	0.2	0.0	0.0	0.0	2.9
NW	0.3	1.9	2.1	0.5	0.1	0.0	0.0	4.8
N-NW	0.4	2.3	1.7	0.7	0.1	0.0	0.0	5.2
Total	7.6	39.5	39.9	10.9	1.9	0.2	0.0	100.0

NOTES:

1. Data From NCDC, 1997-2001 (Reference 3)

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TABLE 2.7-63

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (MPH)
DURING FEBRUARY, VICKSBURG, MS

Direction From	Wind Speed (mph)							Avg. Speed
	0-3	4-7	8-12	13-17	18-22	23-27	≥ 28	
	Frequency of Occurrence (%)							Total (%)
N	1.0	5.0	4.3	2.1	0.2	0.1	0.0	12.7
N-NE	0.3	2.4	3.0	0.8	0.1	0.0	0.0	6.5
NE	0.4	2.8	2.2	0.3	0.0	0.0	0.0	5.7
E-NE	0.3	2.1	0.5	0.0	0.0	0.0	0.0	3.0
E	0.5	3.4	1.8	0.3	0.0	0.0	0.0	6.0
E-SE	0.8	2.7	1.3	0.2	0.1	0.0	0.0	5.1
SE	0.9	3.3	1.9	0.4	0.0	0.0	0.0	6.5
S-SE	0.5	5.2	4.1	1.2	0.3	0.0	0.0	11.4
S	0.8	5.6	4.2	2.2	0.7	0.1	0.0	13.7
S-SW	0.3	1.5	3.2	1.3	0.5	0.0	0.0	6.7
SW	0.2	1.1	1.8	1.3	0.1	0.0	0.0	4.4
W-SW	0.1	1.3	1.0	0.5	0.2	0.0	0.0	3.0
W	0.2	1.1	0.6	0.4	0.1	0.0	0.0	2.4
W-NW	0.1	1.7	1.1	0.3	0.0	0.0	0.0	3.3
NW	0.4	1.6	2.4	0.7	0.1	0.0	0.0	5.2
N-NW	0.2	1.8	1.6	0.7	0.1	0.0	0.0	4.4
Total	7.0	42.5	34.9	12.8	2.6	0.2	0.0	100.0

NOTES:

1. Data From NCDC, 1997-2001 (Reference 3)

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TABLE 2.7-64

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (MPH)
DURING MARCH, VICKSBURG, MS

Direction From	Wind Speed (mph)							Avg. Speed
	0-3	4-7	8-12	13-17	18-22	23-27	≥ 28	
	Frequency of Occurrence (%)							Total (%)
N	0.8	5.8	5.3	1.2	0.1	0.0	0.0	13.3
N-NE	0.1	2.5	4.1	1.2	0.0	0.0	0.0	7.9
NE	0.5	3.0	2.7	0.7	0.0	0.0	0.0	7.1
E-NE	0.4	1.9	1.1	0.1	0.0	0.0	0.0	3.6
E	0.4	3.3	1.8	0.3	0.0	0.0	0.0	5.7
E-SE	0.6	3.2	1.6	0.4	0.1	0.0	0.0	5.9
SE	0.8	3.3	1.4	0.3	0.2	0.1	0.0	6.0
S-SE	0.5	4.2	3.3	0.9	0.2	0.0	0.0	9.0
S	0.9	5.6	3.9	1.8	0.3	0.0	0.0	12.5
S-SW	0.3	2.0	2.6	1.2	0.2	0.0	0.0	6.3
SW	0.3	1.0	1.0	0.2	0.1	0.0	0.0	2.5
W-SW	0.2	1.0	0.8	0.3	0.2	0.0	0.0	2.5
W	0.1	1.2	1.2	0.8	0.4	0.0	0.0	3.7
W-NW	0.2	1.2	1.4	1.6	0.2	0.0	0.0	4.5
NW	0.1	1.5	2.5	0.8	0.1	0.0	0.0	5.0
N-NW	0.3	1.7	1.6	0.7	0.1	0.0	0.0	4.5
Total	6.5	42.4	36.2	12.4	2.3	0.2	0.0	100.0

NOTES:

1. Data From NCDC, 1997-2001 (Reference 3)

GGNS
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TABLE 2.7-65

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (MPH)
DURING APRIL, VICKSBURG, MS

Direction From	Wind Speed (mph)							Avg. Speed
	0-3	4-7	8-12	13-17	18-22	23-27	≥ 28	
	Frequency of Occurrence (%)							Total (%)
N	1.4	3.8	3.1	1.3	0.1	0.0	0.0	9.7
N-NE	0.2	1.6	2.0	0.9	0.0	0.0	0.0	4.7
NE	0.3	2.0	1.6	0.6	0.0	0.0	0.0	4.5
E-NE	0.1	1.8	1.3	0.1	0.0	0.0	0.0	3.4
E	0.5	2.7	1.9	0.2	0.0	0.0	0.0	5.4
E-SE	0.5	3.2	1.6	0.1	0.0	0.1	0.0	5.4
SE	0.9	3.1	1.7	0.5	0.1	0.0	0.0	6.3
S-SE	0.7	4.8	5.3	1.5	0.2	0.0	0.0	12.5
S	0.7	5.1	7.6	4.3	0.5	0.0	0.0	18.2
S-SW	0.3	1.5	3.7	2.5	0.3	0.0	0.0	8.4
SW	0.1	0.9	2.1	0.8	0.2	0.0	0.0	4.1
W-SW	0.1	0.9	0.7	0.5	0.1	0.0	0.0	2.3
W	0.3	1.4	1.3	0.5	0.1	0.0	0.0	3.8
W-NW	0.3	1.0	1.3	0.7	0.3	0.0	0.0	3.6
NW	0.1	1.8	2.1	0.6	0.2	0.0	0.0	4.8
N-NW	0.2	1.4	1.0	0.5	0.0	0.0	0.0	3.1
Total	6.7	37.0	38.3	15.6	2.1	0.2	0.1	100.0

NOTES:

1. Data From NCDC, 1997-2001 (Reference 3)

GGNS
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TABLE 2.7-66

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (MPH)
DURING MAY, VICKSBURG, MS

Direction From	Wind Speed (mph)							Avg. Speed
	0-3	4-7	8-12	13-17	18-22	23-27	≥ 28	
	Frequency of Occurrence (%)							Total (%)
N	1.7	4.5	1.7	0.2	0.0	0.0	0.0	8.1
N-NE	0.2	1.7	1.2	0.2	0.0	0.0	0.0	3.4
NE	0.3	2.2	1.0	0.0	0.0	0.0	0.0	3.5
E-NE	0.3	2.4	0.7	0.1	0.0	0.0	0.0	3.6
E	0.4	3.4	0.8	0.1	0.0	0.0	0.0	4.8
E-SE	1.1	4.1	0.7	0.1	0.0	0.0	0.0	6.0
SE	1.4	5.8	1.6	0.2	0.0	0.0	0.0	9.0
S-SE	1.1	5.9	4.4	0.7	0.1	0.0	0.0	12.3
S	1.4	9.0	9.7	2.4	0.2	0.0	0.0	22.7
S-SW	0.5	3.8	4.2	1.4	0.0	0.0	0.0	10.0
SW	0.2	1.9	2.0	0.5	0.0	0.0	0.0	4.5
W-SW	0.2	0.9	1.2	0.2	0.0	0.0	0.0	2.5
W	0.2	1.0	1.0	0.2	0.0	0.0	0.0	2.4
W-NW	0.2	1.0	0.7	0.1	0.0	0.0	0.0	2.1
NW	0.3	1.2	0.9	0.2	0.0	0.0	0.0	2.6
N-NW	0.2	1.2	1.1	0.2	0.0	0.0	0.0	2.7
Total	9.6	50.2	33.0	6.7	0.3	0.1	0.0	100.0

NOTES:

1. Data From NCDC, 1997-2001 (Reference 3)

GGNS
EARLY SITE PERMIT APPLICATION
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TABLE 2.7-67

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (MPH)
DURING JUNE, VICKSBURG, MS

Direction From	Wind Speed (mph)							Avg. Speed
	0-3	4-7	8-12	13-17	18-22	23-27	≥ 28	
	Frequency of Occurrence (%)							Total (%)
N	1.8	4.2	1.4	0.2	0.0	0.0	0.0	7.7
N-NE	0.2	2.6	1.6	0.1	0.0	0.0	0.0	4.5
NE	0.3	2.9	0.8	0.0	0.0	0.0	0.0	4.1
E-NE	0.5	2.6	0.5	0.0	0.0	0.0	0.0	3.6
E	1.0	3.7	1.0	0.0	0.0	0.0	0.0	5.7
E-SE	1.3	4.7	0.9	0.0	0.0	0.0	0.0	6.9
SE	1.4	5.2	1.4	0.2	0.1	0.0	0.0	8.2
S-SE	1.0	7.1	2.3	0.1	0.0	0.0	0.0	10.6
S	1.8	9.5	7.1	0.6	0.1	0.0	0.0	19.0
S-SW	0.6	5.0	6.5	0.8	0.0	0.0	0.0	13.0
SW	0.3	2.7	3.1	0.3	0.0	0.0	0.0	6.3
W-SW	0.3	1.6	1.3	0.0	0.0	0.0	0.0	3.1
W	0.4	1.4	0.8	0.0	0.0	0.0	0.0	2.6
W-NW	0.1	0.8	0.5	0.1	0.0	0.0	0.0	1.6
NW	0.1	1.2	0.4	0.1	0.0	0.0	0.0	1.8
N-NW	0.2	0.7	0.4	0.0	0.0	0.0	0.0	1.3
Total	11.3	55.8	29.9	2.7	0.2	0.0	0.0	100.0

NOTES:

1. Data From NCDC, 1997-2001 (Reference 3)

GGNS
EARLY SITE PERMIT APPLICATION
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TABLE 2.7-68

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (MPH)
DURING JULY, VICKSBURG, MS

Direction From	Wind Speed (mph)							Avg. Speed
	0-3	4-7	8-12	13-17	18-22	23-27	≥ 28	
	Frequency of Occurrence (%)							Total (%)
N	4.1	9.2	0.9	0.0	0.0	0.0	0.0	14.2
N-NE	0.3	2.3	1.1	0.1	0.0	0.0	0.0	3.9
NE	0.3	2.1	0.9	0.0	0.0	0.0	0.0	3.3
E-NE	0.4	2.9	0.7	0.0	0.0	0.0	0.0	4.0
E	1.4	3.9	0.7	0.1	0.0	0.0	0.0	6.2
E-SE	1.2	4.3	0.5	0.0	0.0	0.0	0.0	6.0
SE	1.8	3.6	0.6	0.1	0.0	0.0	0.0	6.1
S-SE	1.8	5.5	0.9	0.1	0.0	0.0	0.0	8.2
S	2.6	9.7	2.2	0.1	0.0	0.0	0.0	14.6
S-SW	1.6	5.0	0.9	0.1	0.0	0.0	0.0	7.5
SW	0.8	5.6	1.0	0.0	0.0	0.0	0.0	7.4
W-SW	0.5	3.8	1.1	0.0	0.0	0.0	0.0	5.4
W	0.8	3.6	1.3	0.0	0.0	0.0	0.0	5.8
W-NW	0.3	1.5	0.7	0.0	0.0	0.0	0.0	2.5
NW	0.5	1.4	0.3	0.0	0.0	0.0	0.0	2.2
N-NW	0.5	1.9	0.3	0.0	0.0	0.0	0.0	2.7
Total	18.7	66.4	13.9	0.7	0.1	0.1	0.0	100.0

NOTES:

1. Data From NCDC, 1997-2001 (Reference 3)

GGNS
EARLY SITE PERMIT APPLICATION
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TABLE 2.7-69

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (MPH)
DURING AUGUST, VICKSBURG, MS

Direction From	Wind Speed (mph)							Avg. Speed
	0-3	4-7	8-12	13-17	18-22	23-27	≥ 28	
	Frequency of Occurrence (%)							Total (%)
N	4.3	9.2	1.5	0.0	0.0	0.0	0.0	14.9
N-NE	0.5	4.1	2.5	0.0	0.0	0.0	0.0	7.3
NE	0.6	4.8	1.7	0.0	0.0	0.0	0.0	7.1
E-NE	0.4	5.1	1.4	0.1	0.0	0.0	0.0	7.0
E	1.2	5.0	0.9	0.0	0.0	0.0	0.0	7.2
E-SE	1.3	2.6	0.3	0.1	0.0	0.0	0.0	4.3
SE	1.8	3.7	0.2	0.1	0.0	0.0	0.0	5.8
S-SE	1.4	2.9	0.3	0.0	0.0	0.0	0.0	4.7
S	3.1	8.5	1.5	0.3	0.0	0.0	0.0	13.4
S-SW	1.1	4.0	1.6	0.1	0.0	0.0	0.0	6.8
SW	0.8	3.6	1.8	0.1	0.0	0.0	0.0	6.3
W-SW	0.6	3.1	1.1	0.1	0.0	0.0	0.0	4.9
W	0.7	2.0	1.2	0.0	0.0	0.0	0.0	3.9
W-NW	0.7	1.3	0.4	0.0	0.0	0.0	0.0	2.3
NW	0.3	1.2	0.2	0.0	0.0	0.0	0.0	1.7
N-NW	0.6	1.3	0.4	0.0	0.2	0.0	0.0	2.5
Total	19.3	62.3	17.0	1.2	0.3	0.0	0.0	100.0

NOTES:

1. Data From NCDC, 1997-2001 (Reference 3)

GGNS
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TABLE 2.7-70

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (MPH)
DURING SEPTEMBER, VICKSBURG, MS

Direction From	0-3	4-7	8-12	13-17	18-22	23-27	≥ 28	Total (%)	Avg. Speed
	Frequency of Occurrence (%)								
N	3.3	9.0	4.3	1.7	0.1	0.0	0.0	18.4	6.8
N-NE	0.6	5.2	6.0	0.9	0.1	0.0	0.0	12.7	8.2
NE	0.5	3.8	3.1	0.3	0.1	0.0	0.0	7.9	7.5
E-NE	0.8	4.1	2.4	0.2	0.0	0.0	0.0	7.6	6.8
E	0.7	5.1	2.9	0.2	0.0	0.0	0.0	8.9	6.7
E-SE	1.2	4.6	1.6	0.6	0.1	0.0	0.0	8.2	6.6
SE	1.5	4.6	1.8	0.2	0.0	0.0	0.0	8.1	6.0
S-SE	1.1	3.5	1.4	0.3	0.0	0.0	0.0	6.2	6.2
S	1.0	4.1	1.6	0.3	0.0	0.0	0.0	7.0	6.1
S-SW	0.5	1.7	0.9	0.0	0.0	0.0	0.0	3.1	6.1
SW	0.3	1.0	0.2	0.0	0.0	0.0	0.0	1.6	5.2
W-SW	0.2	0.8	0.2	0.0	0.0	0.0	0.0	1.4	5.7
W	0.5	1.0	0.2	0.0	0.0	0.0	0.0	1.6	4.9
W-NW	0.2	0.7	0.2	0.1	0.0	0.0	0.0	1.2	6.5
NW	0.5	0.9	0.8	0.2	0.0	0.0	0.0	2.4	7.1
N-NW	0.7	2.1	0.8	0.0	0.0	0.0	0.0	3.7	6.0
Total	13.7	52.2	28.5	5.1	0.5	0.0	0.0	100.0	6.4

NOTES:

1. Data From NCDC, 1997-2001 (Reference 3)

GGNS
EARLY SITE PERMIT APPLICATION
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TABLE 2.7-71

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (MPH)
DURING OCTOBER, VICKSBURG, MS

Direction From	Wind Speed (mph)							Total (%)	Avg. Speed
	0-3	4-7	8-12	13-17	18-22	23-27	≥ 28		
	Frequency of Occurrence (%)								
N	3.0	8.6	5.0	2.1	0.4	0.0	0.0	19.2	7.4
N-NE	0.3	2.8	4.9	1.3	0.2	0.0	0.0	9.5	9.2
NE	0.3	2.8	2.2	0.1	0.0	0.0	0.0	5.5	7.2
E-NE	0.3	2.5	1.0	0.0	0.0	0.0	0.0	3.8	6.4
E	0.9	4.4	1.0	0.0	0.0	0.0	0.0	6.2	5.6
E-SE	2.3	6.3	1.7	0.3	0.1	0.0	0.0	10.7	5.6
SE	2.7	6.6	3.0	0.8	0.0	0.0	0.0	13.2	6.3
S-SE	1.0	5.3	3.4	0.9	0.1	0.0	0.0	10.6	7.2
S	1.1	4.5	2.4	0.9	0.0	0.0	0.0	8.8	7.1
S-SW	0.2	1.4	1.1	0.3	0.0	0.0	0.0	3.1	7.6
SW	0.0	1.2	0.2	0.0	0.0	0.0	0.0	1.5	6.6
W-SW	0.2	0.5	0.2	0.1	0.0	0.0	0.0	1.0	6.5
W	0.2	0.7	0.9	0.1	0.0	0.0	0.0	1.9	7.9
W-NW	0.2	0.4	0.3	0.0	0.0	0.0	0.0	1.0	6.6
NW	0.2	0.5	0.5	0.0	0.0	0.0	0.0	1.3	7.0
N-NW	0.3	1.6	0.9	0.0	0.0	0.0	0.0	2.8	6.6
Total	13.3	50.1	28.6	7.2	0.9	0.0	0.0	100.0	6.9

NOTES:

1. Data From NCDC, 1997-2001 (Reference 3)

GGNS
EARLY SITE PERMIT APPLICATION
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TABLE 2.7-72

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (MPH)
DURING NOVEMBER, VICKSBURG, MS

Direction From	Wind Speed (mph)							Avg. Speed
	0-3	4-7	8-12	13-17	18-22	23-27	≥ 28	
	Frequency of Occurrence (%)							Total (%)
N	2.9	7.4	6.0	0.8	0.1	0.0	0.0	17.3
N-NE	0.4	3.3	2.8	0.2	0.0	0.0	0.0	6.7
NE	0.4	2.2	1.4	0.0	0.0	0.0	0.0	4.1
E-NE	0.6	3.3	1.2	0.0	0.0	0.0	0.0	5.0
E	1.1	3.8	0.8	0.1	0.1	0.0	0.0	5.9
E-SE	1.1	5.0	0.9	0.1	0.0	0.0	0.0	7.2
SE	2.1	4.5	1.3	0.2	0.0	0.0	0.0	8.1
S-SE	0.7	4.4	3.3	0.3	0.1	0.0	0.0	8.8
S	0.9	4.3	3.0	1.2	0.1	0.0	0.0	9.4
S-SW	0.3	1.3	0.9	0.2	0.0	0.0	0.0	2.7
SW	0.4	1.5	0.9	0.1	0.0	0.0	0.0	3.0
W-SW	0.3	1.2	1.3	0.2	0.0	0.0	0.0	3.0
W	0.5	1.7	1.2	0.3	0.1	0.0	0.0	4.0
W-NW	0.6	2.0	1.2	0.3	0.1	0.0	0.0	4.3
NW	0.4	2.3	1.7	0.3	0.0	0.0	0.0	4.7
N-NW	0.6	2.7	2.1	0.3	0.0	0.0	0.0	5.8
Total	13.4	50.9	30.1	4.9	0.6	0.1	0.0	100.0

NOTES:

1. Data From NCDC, 1997-2001 (Reference 3)

GGNS
EARLY SITE PERMIT APPLICATION
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TABLE 2.7-73

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (MPH)
DURING DECEMBER, VICKSBURG, MS

Direction From	Wind Speed (mph)							Avg. Speed
	0-3	4-7	8-12	13-17	18-22	23-27	≥ 28	
	Frequency of Occurrence (%)							Total (%)
N	1.8	7.8	5.6	2.2	0.6	0.1	0.0	18.1
N-NE	0.2	2.0	3.0	0.7	0.2	0.0	0.0	6.2
NE	0.3	1.3	1.2	0.1	0.0	0.0	0.0	2.9
E-NE	0.3	1.3	0.7	0.1	0.0	0.0	0.0	2.4
E	0.7	1.8	0.9	0.1	0.0	0.0	0.0	3.4
E-SE	0.6	2.9	1.3	0.2	0.0	0.0	0.0	5.0
SE	1.2	4.2	2.5	0.2	0.0	0.0	0.0	8.2
S-SE	0.7	3.2	3.3	1.6	0.1	0.0	0.0	8.8
S	1.1	4.5	2.7	1.1	0.2	0.1	0.0	9.6
S-SW	0.4	2.0	1.3	0.4	0.0	0.0	0.0	4.1
SW	0.2	1.7	0.7	0.4	0.1	0.0	0.0	3.1
W-SW	0.3	1.6	1.0	0.2	0.1	0.0	0.0	3.2
W	0.6	2.1	2.0	0.6	0.2	0.1	0.0	5.5
W-NW	0.2	2.1	2.0	0.6	0.1	0.0	0.0	5.0
NW	0.6	3.2	3.2	0.8	0.0	0.0	0.0	7.9
N-NW	0.3	2.8	2.9	0.5	0.0	0.0	0.0	6.5
Total	9.4	44.5	34.4	9.9	1.6	0.3	0.0	100.0

NOTES:

1. Data From NCDC, 1997-2001 (Reference 3)

GGNS
EARLY SITE PERMIT APPLICATION
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TABLE 2.7-74

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (MPH)
DURING ALL YEARS, VICKSBURG, MS

Direction From	Wind Speed (mph)							Total (%)	Avg. Speed
	0-3	4-7	8-12	13-17	18-22	23-27	≥ 28		
	Frequency of Occurrence (%)								
N	2.2	6.5	3.7	1.2	0.2	0.0	0.0	13.8	7.1
N-NE	0.3	2.7	3.0	0.7	0.1	0.0	0.0	6.8	8.4
NE	0.4	2.7	1.8	0.2	0.0	0.0	0.0	5.1	7.2
E-NE	0.4	2.6	1.0	0.1	0.0	0.0	0.0	4.1	6.4
E	0.8	3.6	1.3	0.1	0.0	0.0	0.0	5.8	6.2
E-SE	1.0	3.9	1.2	0.2	0.0	0.0	0.0	6.3	6.1
SE	1.4	4.3	1.7	0.3	0.0	0.0	0.0	7.7	6.2
S-SE	0.9	4.7	3.2	0.7	0.1	0.0	0.0	9.6	7.4
S	1.3	6.2	4.3	1.4	0.2	0.0	0.0	13.5	7.7
S-SW	0.5	2.6	2.6	0.8	0.1	0.0	0.0	6.7	8.4
SW	0.3	1.9	1.4	0.4	0.1	0.0	0.0	4.1	7.9
W-SW	0.3	1.4	0.9	0.2	0.0	0.0	0.0	2.8	7.4
W	0.4	1.5	1.1	0.3	0.1	0.0	0.0	3.4	7.8
W-NW	0.3	1.3	0.9	0.4	0.1	0.0	0.0	2.9	8.2
NW	0.3	1.6	1.5	0.4	0.0	0.0	0.0	3.8	8.0
N-NW	0.4	1.8	1.3	0.3	0.0	0.0	0.0	3.8	7.6
Total	11.1	49.0	30.8	7.8	1.2	0.1	0.0	100.0	7.4

NOTES:

1. Data From NCDC, 1997-2001 (Reference 3)

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TABLE 2.7-75

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (MPH)
DURING JANUARY, GGNS SITE

Direction From	Wind Speed (mph)							Avg. Speed
	0-3	4-7	8-12	13-17	18-22	23-27	≥ 28	
	Frequency of Occurrence (%)							Total (%)
N	2.5	6.2	0.6	0.0	0.0	0.0	0.0	9.4
N-NE	2.4	3.6	0.3	0.0	0.0	0.0	0.0	6.2
NE	2.7	2.4	0.1	0.0	0.0	0.0	0.0	5.1
E-NE	3.5	1.5	0.0	0.0	0.0	0.0	0.0	5.0
E	1.8	0.6	0.0	0.0	0.0	0.0	0.0	2.5
E-SE	1.0	0.4	0.0	0.0	0.0	0.0	0.0	1.4
SE	1.4	2.7	0.9	0.0	0.0	0.0	0.0	5.0
S-SE	1.9	5.7	3.2	0.4	0.0	0.0	0.0	11.1
S	1.9	4.2	1.9	0.2	0.0	0.0	0.0	8.2
S-SW	1.6	2.5	1.4	0.2	0.0	0.0	0.0	5.6
SW	1.6	3.8	1.9	0.3	0.0	0.0	0.0	7.6
W-SW	2.5	2.8	0.2	0.0	0.0	0.0	0.0	5.5
W	2.4	2.3	0.2	0.0	0.0	0.0	0.0	4.9
W-NW	1.9	1.9	0.2	0.0	0.0	0.0	0.0	3.9
NW	2.3	4.8	0.8	0.0	0.0	0.0	0.0	7.9
N-NW	2.8	5.7	2.0	0.0	0.0	0.0	0.0	10.5
Total	34.3	51.0	13.7	1.1	0.0	0.0	0.0	100.0

NOTES:

1. Data From Site Meteorological Tower, 1996 – 2001 (Reference 2)

GGNS
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TABLE 2.7-76

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (MPH)
DURING FEBRUARY, GGNS SITE

Direction From	Wind Speed (mph)							Avg. Speed
	0-3	4-7	8-12	13-17	18-22	23-27	≥ 28	
	Frequency of Occurrence (%)							Total (%)
N	2.4	4.0	1.0	0.0	0.0	0.0	0.0	7.4
N-NE	3.1	3.7	0.3	0.0	0.0	0.0	0.0	7.1
NE	2.8	2.4	0.3	0.0	0.0	0.0	0.0	5.5
E-NE	3.2	1.5	0.1	0.0	0.0	0.0	0.0	4.9
E	2.0	0.7	0.0	0.0	0.0	0.0	0.0	2.7
E-SE	1.4	0.3	0.0	0.0	0.0	0.0	0.0	1.7
SE	1.1	1.5	0.7	0.0	0.0	0.0	0.0	3.4
S-SE	1.6	5.6	3.5	0.8	0.0	0.0	0.0	11.5
S	1.3	3.6	2.2	0.2	0.0	0.0	0.0	7.3
S-SW	1.6	3.0	2.0	0.3	0.0	0.0	0.0	6.9
SW	1.5	4.6	4.2	0.1	0.0	0.0	0.0	10.4
W-SW	2.1	2.3	0.4	0.0	0.0	0.0	0.0	4.9
W	2.3	1.8	0.1	0.0	0.0	0.0	0.0	4.2
W-NW	1.6	2.0	0.1	0.0	0.0	0.0	0.0	3.7
NW	2.1	4.4	1.4	0.0	0.0	0.0	0.0	7.9
N-NW	2.6	5.3	2.6	0.0	0.0	0.0	0.0	10.5
Total	32.7	46.8	18.9	1.6	0.0	0.0	0.0	100.0

NOTES:

1. Data From Site Meteorological Tower, 1996 – 2001 (Reference 2)

GGNS
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TABLE 2.7-77

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (MPH)
DURING MARCH, GGNS SITE

Direction From	Wind Speed (mph)							Avg. Speed
	0-3	4-7	8-12	13-17	18-22	23-27	≥ 28	
	Frequency of Occurrence (%)							Total (%)
N	2.1	3.9	0.9	0.0	0.0	0.0	0.0	7.0
N-NE	2.6	4.8	1.0	0.0	0.0	0.0	0.0	8.5
NE	3.0	2.8	0.5	0.0	0.0	0.0	0.0	6.3
E-NE	3.6	1.7	0.1	0.0	0.0	0.0	0.0	5.4
E	2.1	1.6	0.1	0.0	0.0	0.0	0.0	3.8
E-SE	1.7	0.9	0.1	0.0	0.0	0.0	0.0	2.6
SE	1.4	2.7	1.2	0.0	0.0	0.0	0.0	5.3
S-SE	1.1	5.3	3.4	0.4	0.0	0.0	0.0	10.1
S	1.2	3.3	1.9	0.1	0.0	0.0	0.0	6.5
S-SW	1.2	2.6	0.8	0.0	0.0	0.0	0.0	4.7
SW	1.4	4.0	1.7	0.2	0.0	0.0	0.0	7.3
W-SW	1.4	3.6	0.6	0.0	0.0	0.0	0.0	5.5
W	1.4	3.8	0.5	0.0	0.0	0.0	0.0	5.7
W-NW	1.2	3.1	0.8	0.0	0.0	0.0	0.0	5.1
NW	1.4	4.9	1.4	0.0	0.0	0.0	0.0	7.7
N-NW	1.9	4.8	1.9	0.0	0.0	0.0	0.0	8.6
Total	28.9	53.6	16.7	0.8	0.0	0.0	0.0	100.0

NOTES:

1. Data From Site Meteorological Tower, 1996 – 2001 (Reference 2)

GGNS
EARLY SITE PERMIT APPLICATION
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TABLE 2.7-78

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (MPH)
DURING APRIL, GGNS SITE

Direction From	Wind Speed (mph)							Avg. Speed
	0-3	4-7	8-12	13-17	18-22	23-27	≥ 28	
	Frequency of Occurrence (%)							Total (%)
N	2.4	2.6	0.7	0.1	0.0	0.0	0.0	5.9
N-NE	2.0	2.7	0.4	0.0	0.0	0.0	0.0	5.1
NE	4.3	1.5	0.2	0.0	0.0	0.0	0.0	5.9
E-NE	3.6	0.8	0.1	0.0	0.0	0.0	0.0	4.5
E	2.2	0.7	0.1	0.0	0.0	0.0	0.0	3.0
E-SE	1.9	0.8	0.0	0.0	0.0	0.0	0.0	2.8
SE	1.9	2.9	0.4	0.1	0.0	0.0	0.0	5.3
S-SE	1.3	8.0	4.8	0.1	0.0	0.0	0.0	14.2
S	1.8	6.5	5.2	0.2	0.0	0.0	0.0	13.7
S-SW	1.5	3.5	2.7	0.1	0.0	0.0	0.0	7.7
SW	1.6	3.4	1.1	0.1	0.0	0.0	0.0	6.2
W-SW	2.2	2.4	0.3	0.0	0.0	0.0	0.0	4.8
W	1.4	2.8	0.4	0.0	0.0	0.0	0.0	4.6
W-NW	1.7	2.6	0.1	0.0	0.0	0.0	0.0	4.4
NW	1.9	3.2	0.4	0.0	0.0	0.0	0.0	5.5
N-NW	1.7	3.3	1.3	0.0	0.0	0.0	0.0	6.3
Total	33.5	47.8	18.0	0.7	0.0	0.0	0.0	100.0

NOTES:

1. Data From Site Meteorological Tower, 1996 – 2001 (Reference 2)

GGNS
EARLY SITE PERMIT APPLICATION
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TABLE 2.7-79

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (MPH)
DURING MAY, GGNS SITE

Direction From	Wind Speed (mph)							Avg. Speed
	0-3	4-7	8-12	13-17	18-22	23-27	≥ 28	
	Frequency of Occurrence (%)							Total (%)
N	2.7	3.1	0.3	0.0	0.0	0.0	0.0	6.0
N-NE	3.5	2.0	0.1	0.0	0.0	0.0	0.0	5.6
NE	6.5	1.3	0.1	0.0	0.0	0.0	0.0	7.9
E-NE	3.3	0.3	0.0	0.0	0.0	0.0	0.0	3.6
E	2.6	0.3	0.0	0.0	0.0	0.0	0.0	2.9
E-SE	1.8	0.2	0.0	0.0	0.0	0.0	0.0	2.0
SE	2.7	1.5	0.0	0.0	0.0	0.0	0.0	4.2
S-SE	2.5	8.8	1.8	0.0	0.0	0.0	0.0	13.1
S	2.8	10.2	3.2	0.1	0.0	0.0	0.0	16.3
S-SW	2.7	5.6	1.3	0.0	0.0	0.0	0.0	9.6
SW	2.7	5.3	0.4	0.0	0.0	0.0	0.0	8.4
W-SW	2.5	1.9	0.0	0.0	0.0	0.0	0.0	4.4
W	2.3	1.4	0.0	0.0	0.0	0.0	0.0	3.8
W-NW	2.2	1.7	0.0	0.0	0.0	0.0	0.0	3.9
NW	1.9	2.2	0.1	0.0	0.0	0.0	0.0	4.1
N-NW	2.0	2.2	0.1	0.0	0.0	0.0	0.0	4.3
Total	44.8	47.8	7.4	0.1	0.0	0.0	0.0	100.0

NOTES:

1. Data From Site Meteorological Tower, 1996 – 2001 (Reference 2)

GGNS
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TABLE 2.7-80

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (MPH)
DURING JUNE, GGNS SITE

Direction From	Wind Speed (mph)							Total (%)	Avg. Speed
	0-3	4-7	8-12	13-17	18-22	23-27	≥ 28		
	Frequency of Occurrence (%)								
N	2.1	2.1	0.1	0.0	0.0	0.0	0.0	4.3	4.0
N-NE	3.3	1.9	0.1	0.0	0.0	0.0	0.0	5.3	3.3
NE	6.1	2.3	0.0	0.0	0.0	0.0	0.0	8.4	2.8
E-NE	4.3	0.5	0.0	0.0	0.0	0.0	0.0	4.8	2.2
E	2.7	0.4	0.0	0.0	0.0	0.0	0.0	3.1	2.4
E-SE	2.6	0.4	0.0	0.0	0.0	0.0	0.0	3.0	2.3
SE	3.4	1.4	0.1	0.0	0.0	0.0	0.0	4.8	2.8
S-SE	3.9	5.0	0.4	0.0	0.0	0.0	0.0	9.4	4.2
S	4.8	7.2	1.1	0.0	0.0	0.0	0.0	13.1	4.3
S-SW	3.9	6.9	1.8	0.0	0.0	0.0	0.0	12.6	4.7
SW	3.6	4.4	0.2	0.0	0.0	0.0	0.0	8.3	4.2
W-SW	3.6	1.8	0.0	0.0	0.0	0.0	0.0	5.4	3.2
W	3.4	1.4	0.0	0.0	0.0	0.0	0.0	4.8	3.1
W-NW	3.0	1.4	0.0	0.0	0.0	0.0	0.0	4.5	3.1
NW	2.6	1.7	0.0	0.0	0.0	0.0	0.0	4.3	3.4
N-NW	2.5	1.5	0.0	0.0	0.0	0.0	0.0	4.0	3.5
Total	55.8	40.3	3.9	0.0	0.0	0.0	0.0	100.0	3.3

NOTES:

1. Data From Site Meteorological Tower, 1996 – 2001 (Reference 2)

GGNS
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TABLE 2.7-81

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (MPH)
DURING JULY, GGNS SITE

Direction From	Wind Speed (mph)							Avg. Speed
	0-3	4-7	8-12	13-17	18-22	23-27	≥ 28	
	Frequency of Occurrence (%)							Total (%)
N	2.7	1.3	0.0	0.0	0.0	0.0	0.0	4.0
N-NE	3.6	1.2	0.0	0.0	0.0	0.0	0.0	4.9
NE	6.3	0.9	0.0	0.0	0.0	0.0	0.0	7.2
E-NE	3.5	0.4	0.0	0.0	0.0	0.0	0.0	3.9
E	2.0	0.3	0.0	0.0	0.0	0.0	0.0	2.3
E-SE	3.0	0.2	0.0	0.0	0.0	0.0	0.0	3.2
SE	3.3	0.6	0.0	0.0	0.0	0.0	0.0	3.8
S-SE	3.8	2.1	0.0	0.0	0.0	0.0	0.0	6.0
S	5.9	3.9	0.1	0.0	0.0	0.0	0.0	9.9
S-SW	5.5	8.4	0.0	0.0	0.0	0.0	0.0	13.9
SW	5.9	5.4	0.1	0.0	0.0	0.0	0.0	11.5
W-SW	5.2	1.7	0.0	0.0	0.0	0.0	0.0	6.9
W	5.2	1.4	0.0	0.0	0.0	0.0	0.0	6.6
W-NW	4.7	1.6	0.0	0.0	0.0	0.0	0.0	6.3
NW	3.1	1.8	0.0	0.0	0.0	0.0	0.0	4.9
N-NW	2.8	1.7	0.0	0.0	0.0	0.0	0.0	4.5
Total	66.5	33.1	0.4	0.0	0.0	0.0	0.0	100.0

NOTES:

1. Data From Site Meteorological Tower, 1996 – 2001 (Reference 2)

GGNS
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TABLE 2.7-82

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (MPH)
DURING AUGUST, GGNS SITE

Direction From	Wind Speed (mph)							Avg. Speed
	0-3	4-7	8-12	13-17	18-22	23-27	≥ 28	
	Frequency of Occurrence (%)							Total (%)
N	4.0	3.5	0.0	0.0	0.0	0.0	0.0	7.5
N-NE	5.9	2.0	0.0	0.0	0.0	0.0	0.0	8.0
NE	8.8	1.7	0.0	0.0	0.0	0.0	0.0	10.5
E-NE	4.7	0.5	0.0	0.0	0.0	0.0	0.0	5.3
E	3.6	0.2	0.0	0.0	0.0	0.0	0.0	3.9
E-SE	3.2	0.2	0.0	0.0	0.0	0.0	0.0	3.5
SE	3.1	0.3	0.0	0.0	0.0	0.0	0.0	3.4
S-SE	3.5	1.8	0.0	0.0	0.0	0.0	0.0	5.2
S	4.7	3.1	0.0	0.0	0.0	0.0	0.0	7.7
S-SW	4.4	5.2	0.3	0.0	0.0	0.0	0.0	9.9
SW	3.3	5.3	0.1	0.0	0.0	0.0	0.0	8.7
W-SW	3.5	2.1	0.0	0.0	0.0	0.0	0.0	5.6
W	4.5	1.7	0.0	0.0	0.0	0.0	0.0	6.2
W-NW	3.1	1.6	0.0	0.0	0.0	0.0	0.0	4.7
NW	2.8	2.4	0.0	0.0	0.0	0.0	0.0	5.2
N-NW	2.6	2.0	0.0	0.0	0.0	0.0	0.0	4.6
Total	65.6	33.8	0.6	0.0	0.0	0.0	0.0	100.0

NOTES:

1. Data From Site Meteorological Tower, 1996 – 2001 (Reference 2)

GGNS
EARLY SITE PERMIT APPLICATION
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TABLE 2.7-83

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (MPH)
DURING SEPTEMBER, GGNS SITE

Direction From	Wind Speed (mph)							Avg. Speed
	0-3	4-7	8-12	13-17	18-22	23-27	≥ 28	
	Frequency of Occurrence (%)							Total (%)
N	5.7	7.0	1.7	0.0	0.0	0.0	0.0	14.4
N-NE	7.6	7.4	0.7	0.0	0.0	0.0	0.0	15.7
NE	10.8	3.3	0.5	0.0	0.0	0.0	0.0	14.6
E-NE	4.0	0.4	0.0	0.0	0.0	0.0	0.0	4.4
E	1.8	0.1	0.0	0.0	0.0	0.0	0.0	1.9
E-SE	1.7	0.1	0.0	0.0	0.0	0.0	0.0	1.8
SE	1.7	0.6	0.0	0.0	0.0	0.0	0.0	2.3
S-SE	2.0	2.4	0.2	0.0	0.0	0.0	0.0	4.6
S	2.6	2.4	0.4	0.0	0.0	0.0	0.0	5.4
S-SW	2.3	2.7	0.2	0.0	0.0	0.0	0.0	5.2
SW	2.3	1.5	0.1	0.0	0.0	0.0	0.0	3.9
W-SW	2.5	1.3	0.0	0.0	0.0	0.0	0.0	3.9
W	2.6	1.3	0.0	0.0	0.0	0.0	0.0	3.9
W-NW	3.2	1.6	0.0	0.0	0.0	0.0	0.0	4.8
NW	2.9	2.9	0.0	0.0	0.0	0.0	0.0	5.8
N-NW	3.4	3.8	0.2	0.0	0.0	0.0	0.0	7.4
Total	57.1	38.9	3.9	0.1	0.0	0.0	0.0	100.0

NOTES:

1. Data From Site Meteorological Tower, 1996 – 2001 (Reference 2)

GGNS
EARLY SITE PERMIT APPLICATION
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TABLE 2.7-84

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (MPH)
DURING OCTOBER, GGNS SITE

Direction From	Wind Speed (mph)							Avg. Speed
	0-3	4-7	8-12	13-17	18-22	23-27	≥ 28	
	Frequency of Occurrence (%)							Total (%)
N	4.8	5.6	1.7	0.0	0.0	0.0	0.0	12.2
N-NE	6.1	4.7	0.6	0.0	0.0	0.0	0.0	11.4
NE	12.0	3.1	0.1	0.0	0.0	0.0	0.0	15.2
E-NE	7.1	0.9	0.0	0.0	0.0	0.0	0.0	8.0
E	3.0	0.4	0.0	0.0	0.0	0.0	0.0	3.4
E-SE	2.3	0.7	0.0	0.0	0.0	0.0	0.0	3.0
SE	1.9	1.8	0.0	0.0	0.0	0.0	0.0	3.8
S-SE	1.5	3.6	0.8	0.0	0.0	0.0	0.0	5.8
S	1.8	4.1	0.2	0.0	0.0	0.0	0.0	6.2
S-SW	1.8	2.3	0.4	0.0	0.0	0.0	0.0	4.4
SW	2.2	1.3	0.2	0.0	0.0	0.0	0.0	3.6
W-SW	2.3	1.5	0.0	0.0	0.0	0.0	0.0	3.8
W	2.8	1.0	0.0	0.0	0.0	0.0	0.0	3.8
W-NW	2.5	1.1	0.0	0.0	0.0	0.0	0.0	3.7
NW	2.5	2.4	0.0	0.0	0.0	0.0	0.0	5.0
N-NW	3.1	3.1	0.7	0.0	0.0	0.0	0.0	6.9
Total	57.9	37.4	4.7	0.0	0.0	0.0	0.0	100.0

NOTES:

1. Data From Site Meteorological Tower, 1996 – 2001 (Reference 2)

GGNS
EARLY SITE PERMIT APPLICATION
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TABLE 2.7-85

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (MPH)
DURING NOVEMBER, GGNS SITE

Direction From	Wind Speed (mph)							Total (%)	Avg. Speed
	0-3	4-7	8-12	13-17	18-22	23-27	≥ 28		
	Frequency of Occurrence (%)								
N	5.1	5.2	0.3	0.0	0.0	0.0	0.0	10.6	4.0
N-NE	5.9	4.1	0.3	0.0	0.0	0.0	0.0	10.4	3.5
NE	8.0	1.9	0.1	0.0	0.0	0.0	0.0	10.0	2.7
E-NE	5.8	0.8	0.0	0.0	0.0	0.0	0.0	6.6	2.2
E	2.7	0.4	0.0	0.0	0.0	0.0	0.0	3.1	2.2
E-SE	2.0	0.6	0.0	0.0	0.0	0.0	0.0	2.6	2.0
SE	1.5	1.3	0.1	0.0	0.0	0.0	0.0	3.0	3.5
S-SE	1.5	3.8	1.2	0.1	0.0	0.0	0.0	6.6	5.4
S	2.1	2.4	1.0	0.0	0.0	0.0	0.0	5.5	4.7
S-SW	1.3	1.4	0.4	0.0	0.0	0.0	0.0	3.1	4.1
SW	2.6	2.6	0.7	0.0	0.0	0.0	0.0	5.9	4.3
W-SW	3.0	2.0	0.4	0.0	0.0	0.0	0.0	5.4	3.7
W	3.1	2.0	0.0	0.0	0.0	0.0	0.0	5.1	3.3
W-NW	3.0	1.2	0.0	0.0	0.0	0.0	0.0	4.2	3.1
NW	4.1	3.6	0.1	0.0	0.0	0.0	0.0	7.7	3.5
N-NW	4.3	5.5	0.5	0.0	0.0	0.0	0.0	10.3	4.2
Total	55.9	38.8	5.2	0.2	0.0	0.0	0.0	100.0	3.5

NOTES:

1. Data From Site Meteorological Tower, 1996 – 2001 (Reference 2)

GGNS
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TABLE 2.7-86

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (MPH)
DURING DECEMBER, GGNS SITE

Direction From	Wind Speed (mph)							Avg. Speed
	0-3	4-7	8-12	13-17	18-22	23-27	≥ 28	
	Frequency of Occurrence (%)							Total (%)
N	3.7	4.3	1.6	0.0	0.0	0.0	0.0	9.6
N-NE	2.8	4.0	0.2	0.0	0.0	0.0	0.0	6.9
NE	3.8	2.1	0.1	0.0	0.0	0.0	0.0	6.0
E-NE	3.6	0.8	0.0	0.0	0.0	0.0	0.0	4.3
E	3.3	0.9	0.0	0.0	0.0	0.0	0.0	4.2
E-SE	1.9	0.7	0.0	0.0	0.0	0.0	0.0	2.7
SE	1.6	2.2	0.4	0.0	0.0	0.0	0.0	4.2
S-SE	1.6	4.8	3.3	0.1	0.0	0.0	0.0	9.8
S	1.6	2.5	2.0	0.0	0.0	0.0	0.0	6.1
S-SW	1.1	1.4	0.9	0.3	0.0	0.0	0.0	3.7
SW	1.7	2.7	0.9	0.1	0.1	0.0	0.0	5.5
W-SW	2.6	3.3	0.4	0.0	0.0	0.0	0.0	6.2
W	2.7	3.2	0.6	0.0	0.0	0.0	0.0	6.4
W-NW	2.6	2.9	0.2	0.0	0.0	0.0	0.0	5.7
NW	2.7	5.1	0.3	0.0	0.0	0.0	0.0	8.1
N-NW	3.1	6.2	1.4	0.0	0.0	0.0	0.0	10.6
Total	40.3	47.0	12.2	0.5	0.1	0.0	0.0	100.0

NOTES:

1. Data From Site Meteorological Tower, 1996 – 2001 (Reference 2)

GGNS
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TABLE 2.7-87

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED (MPH)
DURING ALL YEARS, GGNS SITE

Direction From	Wind Speed (mph)							Total (%)	Avg. Speed
	0-3	4-7	8-12	13-17	18-22	23-27	≥ 28		
	Frequency of Occurrence (%)								
N	3.4	4.1	0.7	0.0	0.0	0.0	0.0	8.2	4.4
N-NE	4.1	3.5	0.3	0.0	0.0	0.0	0.0	7.9	3.8
NE	6.3	2.1	0.2	0.0	0.0	0.0	0.0	8.6	3.0
E-NE	4.2	0.8	0.0	0.0	0.0	0.0	0.0	5.1	2.4
E	2.5	0.6	0.0	0.0	0.0	0.0	0.0	3.1	2.6
E-SE	2.0	0.5	0.0	0.0	0.0	0.0	0.0	2.5	2.6
SE	2.1	1.6	0.3	0.0	0.0	0.0	0.0	4.0	4.1
S-SE	2.2	4.7	1.9	0.2	0.0	0.0	0.0	8.9	5.6
S	2.7	4.5	1.6	0.1	0.0	0.0	0.0	8.9	5.2
S-SW	2.4	3.8	1.0	0.1	0.0	0.0	0.0	7.3	4.9
SW	2.6	3.7	0.9	0.1	0.0	0.0	0.0	7.3	4.8
W-SW	2.8	2.2	0.2	0.0	0.0	0.0	0.0	5.2	3.7
W	2.8	2.0	0.2	0.0	0.0	0.0	0.0	5.0	3.6
W-NW	2.6	1.9	0.1	0.0	0.0	0.0	0.0	4.6	3.6
NW	2.5	3.3	0.4	0.0	0.0	0.0	0.0	6.2	4.1
N-NW	2.7	3.7	0.9	0.0	0.0	0.0	0.0	7.4	4.7
Total	47.8	43.1	8.7	0.4	0.0	0.0	0.0	100.0	3.9

NOTES:

1. Data From Site Meteorological Tower, 1996 – 2001 (Reference 2)

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TABLE 2.7-88

MAXIMUM NUMBER OF CONSECUTIVE HOURS WITH WIND FROM A SINGLE
SECTOR, VICKSBURG, MS

Sector	1997	1998	1999	2000	2001	Max. of All Years	Avg.
N	7	28	22	9	22	28	17.6
N-NE	15	6	10	11	10	15	10.4
NE	10	17	6	4	11	17	9.6
E-NE	7	8	4	5	5	8	5.8
E	15	8	5	6	5	15	7.8
E-SE	13	16	10	6	10	16	11.0
SE	7	7	8	7	12	12	8.2
S-SE	11	13	16	15	16	16	14.2
S	18	13	13	16	27	27	17.4
S-SW	11	15	11	13	11	15	12.2
SW	8	11	10	8	7	11	8.8
W-SW	7	7	5	6	5	7	6.0
W	12	12	5	10	8	12	9.4
W-NW	6	8	7	8	8	8	7.4
NW	11	8	7	6	5	11	7.4
N-NW	9	4	7	9	11	11	8.0

NOTES:

1. Data From NCDC, 1997-2001 (Reference 3)

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TABLE 2.7-89

MAXIMUM NUMBER OF CONSECUTIVE HOURS WITH WIND FROM 3 ADJACENT
SECTORS, VICKSBURG, MS

Sector	1997	1998	1999	2000	2001	All	Avg.
N	31	30	39	68	43	68	42.2
N-NE	63	30	62	74	64	74	58.6
NE	27	28	26	24	15	28	24.0
E-NE	35	35	17	21	18	35	25.2
E	28	43	28	24	24	43	29.4
E-SE	22	74	44	36	27	74	40.6
SE	23	42	45	19	51	51	36.0
S-SE	42	63	45	68	64	68	56.4
S	42	109	62	57	49	109	63.8
S-SW	61	52	57	59	32	61	52.2
SW	17	20	25	27	34	34	24.6
W-SW	20	31	15	18	21	31	21.0
W	26	29	34	18	17	34	24.8
W-NW	21	37	30	17	22	37	25.4
NW	37	20	19	23	33	37	26.4
N-NW	41	28	28	23	25	41	29.0

NOTES:

1. Data From NCDC, 1997-2001 (Reference 3)

GGNS
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TABLE 2.7-90

MAXIMUM NUMBER OF CONSECUTIVE HOURS WITH WIND FROM 5 ADJACENT
SECTORS, VICKSBURG, MS

Sector	1997	1998	1999	2000	2001	All	Avg.
N	71	51	70	75	76	76	57.2
N-NE	104	55	70	85	66	104	31.5
NE	77	89	62	78	65	78	25.8
E-NE	67	43	66	33	33	67	16.7
E	35	107	44	45	31	45	13.3
E-SE	56	110	45	49	67	56	17.5
SE	61	107	80	68	69	68	21.5
S-SE	49	160	91	105	98	105	25.7
S	73	120	98	101	126	101	29.0
S-SW	68	109	93	65	61	68	22.2
SW	64	86	68	59	39	64	20.5
W-SW	34	46	37	29	39	34	10.5
W	37	37	49	25	27	37	10.3
W-NW	38	42	49	28	34	38	11.0
NW	48	50	56	36	45	48	14.0
N-NW	47	42	49	68	50	68	19.2

NOTES:

1. Data From NCDC, 1997-2001 (Reference 3)

GGNS
EARLY SITE PERMIT APPLICATION
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TABLE 2.7-91

MAXIMUM NUMBER OF CONSECUTIVE HOURS WITH WIND FROM A SINGLE
SECTOR, GRAND GULF SITE

Sector	1996	1997	1998	1999	2000	2001	All	Avg.
N	21	27	17	18	26	17	27	21.0
N-NE	9	15	14	9	13	13	15	12.0
NE	8	15	10	11	15	15	15	13.2
E-NE	10	6	6	13	10	7	13	8.8
E	5	5	7	7	5	7	7	6.0
E-SE	4	2	3	5	2	9	9	5.2
SE	18	6	6	4	4	12	18	9.3
S-SE	16	16	13	13	15	18	18	16.0
S	12	15	9	15	13	23	23	16.8
S-SW	10	13	28	11	10	7	13	9.7
SW	14	13	15	7	16	9	16	11.3
W-SW	6	9	11	8	9	6	9	7.3
W	8	6	9	9	5	16	16	10.0
W-NW	8	10	9	6	6	6	10	7.0
NW	13	17	9	14	8	6	17	10.7
N-NW	11	13	13	12	10	16	16	13.0

NOTES:

1. Data From Site Meteorological Tower, 1996 – 2001 (Reference 2)

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TABLE 2.7-92

MAXIMUM NUMBER OF CONSECUTIVE HOURS WITH WIND FROM 3 ADJACENT
SECTORS, GRAND GULF SITE

Sector	1996	1997	1998	1999	2000	2001	All	Avg.
N	22	91	49	51	79	51	91	57.2
N-NE	58	40	41	27	85	48	85	49.8
NE	61	28	21	27	48	31	61	36.0
E-NE	16	15	15	15	15	45	45	20.2
E	13	14	14	14	10	23	23	14.7
E-SE	18	9	7	8	6	21	21	11.5
SE	29	27	23	30	29	40	40	29.7
S-SE	54	46	48	74	46	55	74	53.8
S	62	56	65	79	54	53	79	61.5
S-SW	44	36	38	41	48	43	48	41.7
SW	36	21	36	18	20	18	36	24.8
W-SW	20	28	43	22	22	20	43	25.8
W	27	30	32	19	21	23	32	25.3
W-NW	37	22	23	24	16	19	37	23.5
NW	27	44	26	35	44	27	44	33.8
N-NW	33	47	51	38	45	41	51	42.5

NOTES:

1. Data From Site Meteorological Tower, 1996 – 2001 (Reference 2)

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TABLE 2.7-93

MAXIMUM NUMBER OF CONSECUTIVE HOURS WITH WIND FROM 5 ADJACENT
SECTORS, GRAND GULF SITE

Sector	1996	1997	1998	1999	2000	2001	All	Avg.
N	76	137	86	80	88	85	137	92.0
N-NE	181	91	85	80	112	68	181	102.8
NE	69	45	41	29	93	67	93	57.3
E-NE	61	28	21	27	48	74	74	43.2
E	31	16	15	16	15	60	60	25.5
E-SE	29	27	23	30	29	64	64	33.7
SE	65	46	48	74	46	83	83	60.3
S-SE	64	56	65	79	59	83	83	67.7
S	83	67	152	130	94	86	152	102.0
S-SW	70	64	152	133	65	71	152	92.5
SW	69	36	47	45	48	44	69	48.2
W-SW	51	36	48	42	24	31	51	38.7
W	76	35	43	46	26	23	76	41.5
W-NW	61	49	49	45	44	32	61	46.7
NW	38	70	51	54	65	53	70	55.2
N-NW	38	110	71	54	79	62	110	69.0

NOTES:

1. Data From Site Meteorological Tower, 1996 – 2001 (Reference 2)

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TABLE 2.7-94

COMPARISON OF MAXIMUM WIND PERSISTENCE
AT GRAND GULF SITE AND JACKSON, MS

Sector	Single Sector		Three Adjacent Sectors		Five Adjacent Sectors	
	GG	Jackson	GG	Jackson	GG	Jackson
N	27	19	91	88	137	158
N-NE	15	15	85	56	181	114
NE	15	26	61	84	93	84
E-NE	13	14	45	47	74	98
E	7	12	23	56	60	87
E-SE	9	14	21	50	64	114
SE	18	27	40	79	83	90
S-SE	18	29	74	75	83	171
S	23	17	79	97	152	182
S-SW	13	16	48	71	152	112
SW	16	17	36	55	69	109
W-SW	9	18	43	42	51	72
W	16	9	32	36	76	66
W-NW	10	20	37	41	61	59
NW	17	26	44	51	70	56
N-NW	16	23	51	43	110	84

NOTES:

1. Period of record at GGNS site, Sept. 1996 – 2001 (Reference 2)
2. Period of record at Jackson, 1955 – 1964 (UFSAR, Reference 4)

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TABLE 2.7-95

COMPARISON OF MAXIMUM WIND PERSISTENCE AT THE GRAND GULF SITE AND
VICKSBURG, MS

	Single Sector		Three Adjacent Sectors		Five Adjacent Sectors	
<u>Sector</u>	GG	Vicksburg	GG	Vicksburg	GG	Vicksburg
N	27	28	91	68	137	76
N-NE	15	15	85	74	181	104
NE	15	17	61	28	93	78
E-NE	13	8	45	35	74	67
E	7	15	23	43	60	45
E-SE	9	16	21	74	64	56
SE	18	12	40	51	83	68
S-SE	18	16	74	68	83	105
S	23	27	79	109	152	101
S-SW	13	15	48	61	152	68
SW	16	11	36	34	69	64
W-SW	9	7	43	31	51	34
W	16	12	32	34	76	37
W-NW	10	8	37	37	61	38
NW	17	11	44	37	70	48
N-NW	16	11	51	41	110	68

NOTES:

1. Period of record at GG site, 1996 – 2001. Data from Site Meteorological Tower (Reference 2).
2. Period of record at Vicksburg, 1997 – 2001. Data from NCDC (Reference 3).

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TABLE 2.7-96

TEMPERATURE MEANS AND EXTREMES AT VICKSBURG, MS

	Daily Max	Daily Min	Monthly Mean	Record Max	Year Occurred	Record Min	Year Occurred
Jan	57.2	39.0	48.0	79	2000	16	2001
Feb	63.7	43.2	53.3	84	2001	23	2000
Mar	67.5	48.2	57.7	86	1998	25	1998
Apr	76.1	55.1	65.7	92	1999	37	1997
May	84.7	64.1	74.4	99	1998	49	1999
Jun	89.3	70.4	79.3	100	1998	56	2000
Jul	93.2	73.3	82.5	103	2000	60	2001
Aug	93.1	71.5	81.5	107	2000	59	1997
Sep	87.5	65.3	75.7	107	2000	43	2001
Oct	78.9	53.0	65.2	96	1998	33	1999
Nov	67.5	44.7	55.7	86	1998	24	1997
Dec	56.7	38.3	47.2	81	1998	21	2000
Annual	76.3	55.5	65.6	107	2000	16	2001

NOTES:

1. Data from NCDC, 1997-2001

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TABLE 2.7-97

TEMPERATURE MEANS AND EXTREMES AT GRAND GULF SITE

	Daily Max	Daily Min	Monthly Mean	Record Max	Year Occurred	Record Min	Year Occurred
Jan	55.2	38.6	46.7	79.1	2000	17.3	2001
Feb	65.5	44.8	54.9	81.4	2000	25.5	2000
Mar	66.6	48.6	57.4	83.1	2000	34.4	2001
Apr	75.5	56.3	66.1	86.7	2000	34.9	2000
May	82.5	65.3	73.9	91.3	2000	54.0	2001
Jun	85.2	69.2	76.5	90.6	2001	58.7	2000
Jul	90.7	73.5	81.4	100.6	2000	63.5	2001
Aug	90.1	73.8	80.9	104.2	2000	68.4	2001
Sep	84.4	66.6	74.6	103.3	2000	47.1	2001
Oct	76.2	53.9	64.6	88.2	2000	36.5	2001
Nov	68.6	47.9	57.4	87.7	2000	29.1	2000
Dec	54.7	37.8	46.2	78.1	2001	19.1	2000

NOTES:

1. Data from Site Meteorological Tower, 2000 – 2001

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EARLY SITE PERMIT APPLICATION
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TABLE 2.7-98

RAINFALL FREQUENCY DISTRIBUTION AT GRAND GULF, 2000-2001
NUMBER OF HOURS PER MONTH, AVERAGE YEAR

inch/hr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.01 - 0.019	13.5	1	21	3.5	1	7.5	10.5	8	1	1	1	5.5
0.02 - 0.099	63.5	9	57	3.5	4.5	11	20.5	0	4.5	2.5	20.5	20
0.10 - 0.249	6	8	20	15	6	14	5.5	7.5	5	1	7.5	7.5
0.25 - 0.499	1.5	4.5	5	3	1.5	2.5	0.5	2	1.5	0.5	3.5	3
0.50 - 0.99	0	0.5	1.5	0.5	2	1	1	1	0.5	1	2	0.5
1.00 - 1.99	0	0	0.5	1	0	0	0	0.5	0	0.5	0	0.5
2.0 & over	0	0	0	0	0	0	0	0	0	0	0	0
Total	84.5	23	105	26.5	15	36	38	19	12.5	6.5	34.5	37

NOTES:

1. Data from Site Meteorological Tower, 2000 – 2001

GGNS
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TABLE 2.7-99

RAINFALL FREQUENCY DISTRIBUTION AT VICKSBURG, MS
NUMBER OF HOURS PER MONTH, AVERAGE YEAR

inch/hr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.01-0.019	19.4	13.2	15.4	11	9	7.8	5.8	6.6	8.8	11.2	15.4	14
0.02-.099	29.4	15.4	26.2	18.8	9.4	16	7	7.4	14.2	10	25.2	28.6
0.10-0.249	14.8	11	16	10	3.6	3.6	2.6	1.8	5.6	4	10.4	13.6
0.25-0.499	6	4.2	6	1.8	2	2.8	1	1	2.4	1.8	4	3.8
0.50-0.99	0.6	0.6	1.4	1.6	0.6	1.2	1.2	0.6	0.8	0.8	0.8	0.8
1.00-1.99	0.2	0.2	0	0	0	0.4	0.4	0.4	0.6	0.6	0	0
2.0 & over	0	0	0	0	0	0	0	0	0	0	0	0
Total	70.4	44.6	65	43.2	24.6	31.8	18	17.8	32.4	28.4	55.8	60.8

NOTES:

1. Data from NCDC, 1997-2001

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TABLE 2.7-100
(UFSAR TABLE 2.3-75)

MAXIMUM OBSERVED SHORT PERIOD PRECIPITATION (IN.)
VICKSBURG, MISSISSIPPI

Period	Minutes				Hours					
	5	10	15	30	1	2	3	6	12	24
Amount*	0.83	1.20	1.41	2.44	3.44	4.17	5.78	7.10	8.73	9.97
Date*	4/12	5/12	8/19	8/22	8/22	2/17	2/17	7/13	4/29	3/27
Year*	1909	1923	1918	1960	1960	1927	1927	1907	1953	1951
Amount**					1.63	2.66	2.71	3.04	3.70	4.52
Date**					8/31	8/31	8/31	6/9	6/9	1/28
Year**					1998	1998	1998	1997	1997	1998

NOTES:

* Length of record for 5 to 30 minutes was 66 years; length of record for remaining data is 69 years. (Data taken from UFSAR Table 2.3-75)

SOURCE:

Jennings, A.H., Maximum Recorded United States Point Rainfall for 5 minutes to 24 hours at 296 First Order Stations, US Weather Bureau Technical Paper 2, Washington, D.C., 1963.

** Length of record 5 years (1997 to 2001), Vicksburg Meteorology Station, NCDC

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TABLE 2.7-101

TOTAL HOURS OF SNOWFALL, VICKSBURG, MISSISSIPPI

	1997	1998	1999	2000	2001
January	19	0	0	3	5
February	2	0	0	0	0
March	0.5	0	0	0	0
November	0	0	0	0.5	0
December	8	16	2.5	5	0

NOTES:

1. Data from NCDC (Reference 3)

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TABLE 2.7-102

AVERAGE HOURS OF FOG AND HAZE AT VICKSBURG

	Fog (Average hours/month)	Haze (Average hours/month)
Jan	11.466	2.694
Feb	6.316	8.194
Mar	1.28	6.446
Apr	5.602	5.188
May	2.612	27.462
Jun	2.078	7.626
Jul	2.13	35.108
Aug	3.798	34.876
Sep	3.61	21.316
Oct	14.866	15.78
Nov	28.026	20.282
Dec	10.558	8.94
Annual (hours/yr)	92.342	193.912

NOTES:

1. Vicksburg did not report any hours of heavy fog, smoke, dust storms, or sand storms in this period.
2. Data from NCDC, 1997-2001

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TABLE 2.7-103

METEOROLOGICAL EQUIPMENT SPECIFICATION
AND PERFORMANCE CHARACTERISTICS

<u>Primary Tower</u>		
Wind Direction	Start threshold: Distance constant: Dampening ratio: Range:	0.7 mph 1.1 meter 0.4 at 10 degrees 0 to 540 degrees
Wind Speed	Start threshold: Accuracy: Distance constant: Range:	0.63 mph ±1% 5 ft 0 to 90 mph
Temperature	Accuracy: Range:	±0.2 °F -30 °F to 122 °F
ΔT	Accuracy:	±0.1 °F or 1% of ΔT
Precipitation	Accuracy: Resolution:	±1% up to 3 in./hr 0.01 to 15 in.
Dew Point	Accuracy:	±0.72 °F

<u>Backup Tower</u>		
Wind Direction	Start threshold: Dampening ratio: Distance constant:	0.7 mph 0.4 at 10 degrees 1.1 meters
Wind Speed	Start threshold: Distance constant: Range:	0.63 mph 5 ft 0 to 90 mph

NOTES:

1. This equipment was installed in March 1983

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TABLE 2.7-104
(UFSAR TABLE 2.3-170)

METEOROLOGICAL EQUIPMENT SPECIFICATION
AND PERFORMANCE CHARACTERISTICS – EXISTING EQUIPMENT

New Equipment

Wind Direction	Start threshold:	0.5 mph
	Distance constant:	1.0 meters
	Dampening ratio:	>0.4 at 10 degrees
	Range:	0 to 360 degrees
Wind Speed	Start threshold:	0.5 mph
	Accuracy:	±1%
	Distance constant:	4.9 ft
	Range:	0 to 125 mph
Temperature	Accuracy:	±0.27 F
	Range:	-22 F to 122 F
ΔT	Accuracy:	±0.1%
Precipitation	Accuracy:	±5% up to 6 in./hr
	Resolution:	0.01 in.
Relative Humidity	Accuracy:	±5% RH

Backup Tower

Wind Direction	Start threshold:	0.5 mph
	Dampening ratio:	>0.4 at 10 degrees
	Distance constant:	1.0 meters
Wind Speed	Start threshold:	0.5 mph
	Distance constant:	4.9 Ft
	Range:	0 to 125 mph
Temperature	Accuracy:	±0.27 °F
	Range:	-22 F to 122 F

NOTES:

1. This equipment was installed in December 2000 and January 2001.

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TABLE 2.7-105

MONTHLY DATA RECOVERY RATE – DATA FROM 1996 TO 2001

	1996	1997	1998	1999	2000	2001
Jan	96%	100%	94%	97%	96%	100%
Feb	84%	97%	100%	99%	89%	93%
Mar	100%	98%	96%	100%	98%	99%
Apr	100%	100%	87%	99%	94%	100%
May	100%	99%	100%	100%	99%	100%
Jun	68%	100%	73%	99%	99%	100%
Jul	96%	81%	94%	99%	100%	100%
Aug	96%	100%	95%	100%	72%	100%
Sep	100%	99%	99%	99%	99%	86%
Oct	94%	100%	81%	94%	99%	98%
Nov	94%	99%	98%	99%	95%	98%
Dec	88%	100%	83%	82%	99%	100%
Avg.	93%	98%	92%	97%	95%	98%

NOTES:

1. This is the fraction of hourly wind speed and direction at 33 ft, wind speed and direction at 166 ft, and Delta-T measurements successfully recorded (5 data points).
2. After the start of 2000, dry bulb temperature and precipitation data was also collected (7 data points).
3. After March 8, 2001, relative humidity was also collected (8 data points).

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TABLE 2.7-106

1996 TO 2000 GRAND GULF DATA (AVERAGED IN HOURS)
EXTREMELY UNSTABLE, STABILITY CLASS A

	Wind Speed (m/sec) at 10 meter (33 feet) Level													TOTAL
	0.5	0.75	1	1.25	1.5	1.75	2	2.5	3	4	5	7	>13	
N	0	1	2	6	9	12	14	23	26	26	4	2	0	125
N-NE	0	2	2	5	6	8	9	21	14	14	2	0	0	83
NE	1	1	2	3	3	4	4	11	7	6	0	0	0	42
E-NE	0	0	0	0	0	0	0	2	1	1	0	0	0	4
E	0	0	0	0	0	1	1	0	1	1	0	0	0	4
E-SE	0	0	0	1	0	0	0	2	1	0	0	0	0	4
SE	0	0	1	2	1	2	2	2	3	1	0	1	0	15
S-SE	0	0	1	3	5	5	6	18	14	24	18	11	0	105
S	0	2	1	5	5	8	10	25	19	34	17	8	0	134
S-SW	0	2	2	4	10	15	18	46	40	33	14	7	0	191
SW	0	1	3	6	16	28	31	50	37	43	15	9	0	239
W-SW	0	1	4	14	25	30	24	24	10	5	0	0	0	137
W	0	2	5	16	25	31	21	21	10	6	1	0	0	138
W-NW	0	3	8	18	29	28	23	25	8	5	2	0	0	149
NW	0	3	5	13	16	24	30	47	34	27	6	0	0	205
N-NW	0	1	4	5	14	14	16	38	33	34	11	3	0	173
TOTAL	1	19	40	101	164	210	209	355	258	260	90	41	0	1748

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TABLE 2.7-107

1996 TO 2000 GRAND GULF DATA (AVERAGED IN HOURS)
MODERATELY UNSTABLE, STABILITY CLASS B

	Wind Speed (m/sec) at 10 meter (33 feet) Level													TOTAL
	0.5	0.75	1	1.25	1.5	1.75	2	2.5	3	4	5	7	>13	
N	0	0	1	1	2	2	2	5	5	4	0	0	0	22
N-NE	0	0	1	0	1	1	1	3	2	2	0	0	0	11
NE	0	0	0	0	0	1	2	3	1	1	0	0	0	8
E-NE	0	0	0	0	0	1	0	0	1	0	0	0	0	2
E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E-SE	0	0	0	0	1	0	0	0	0	0	0	0	0	1
SE	0	0	0	1	0	0	1	1	0	1	0	0	0	4
S-SE	0	0	1	1	0	2	2	4	3	5	5	3	0	26
S	0	0	1	1	2	2	2	4	6	8	5	2	0	33
S-SW	0	0	0	2	2	3	2	7	5	4	2	1	0	28
SW	0	0	1	1	5	3	4	7	3	1	2	1	0	28
W-SW	0	0	1	3	5	5	1	2	0	1	0	0	0	18
W	0	1	3	2	4	3	1	2	1	1	0	0	0	18
W-NW	0	0	2	3	1	3	1	2	0	1	0	0	0	13
NW	0	0	1	2	2	3	2	4	3	1	0	0	0	18
N-NW	0	0	1	1	3	2	2	6	5	3	1	0	0	24
TOTAL	0	1	13	18	28	31	23	50	35	33	15	7	0	254

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TABLE 2.7-108

1996 TO 2000 GRAND GULF DATA (AVERAGED IN HOURS)
SLIGHTLY UNSTABLE, STABILITY CLASS C

	Wind Speed (m/sec) at 10 meter (33 feet) Level													TOTAL
	0.5	0.75	1	1.25	1.5	1.75	2	2.5	3	4	5	7	>13	
N	0	0	1	2	2	3	2	7	7	3	1	0	0	28
N-NE	0	0	0	1	2	2	4	5	3	2	0	0	0	19
NE	0	1	1	1	1	1	2	3	3	0	0	0	0	13
E-NE	0	0	0	0	0	0	0	2	1	0	0	0	0	3
E	0	0	0	0	0	1	0	0	0	0	0	0	0	1
E-SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	1	1	1	1	1	1	0	0	1	0	0	7
S-SE	0	0	0	1	3	3	2	4	5	9	5	3	0	35
S	0	0	0	2	2	2	2	7	6	11	3	1	0	36
S-SW	0	0	1	2	3	3	3	8	5	7	3	2	0	37
SW	0	0	1	3	5	5	4	7	3	5	3	1	0	37
W-SW	0	1	1	5	4	3	2	3	1	1	0	0	0	21
W	0	1	1	3	5	3	0	2	1	1	0	0	0	17
W-NW	0	1	2	3	6	2	3	3	1	1	0	0	0	22
NW	0	1	1	3	3	5	2	5	2	1	0	0	0	23
N-NW	0	0	1	4	2	3	5	9	5	5	1	0	0	35
TOTAL	0	5	11	31	39	37	32	66	43	46	17	7	0	334

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TABLE 2.7-109

1996 TO 2000 GRAND GULF DATA (AVERAGED IN HOURS)
NEUTRAL, STABILITY CLASS D

	Wind Speed (m/sec) at 10 meter (33 feet) Level													TOTAL
	0.5	0.75	1	1.25	1.5	1.75	2	2.5	3	4	5	7	>13	
N	2	4	9	13	16	22	26	46	28	29	7	0	0	202
N-NE	1	4	8	14	21	23	24	39	21	15	2	0	0	172
NE	1	2	6	10	15	14	14	19	12	6	0	0	0	99
E-NE	0	1	2	3	2	4	2	6	4	2	0	0	0	26
E	0	0	1	0	1	1	1	2	1	0	0	0	0	7
E-SE	0	1	2	1	2	2	2	1	0	0	0	0	0	11
SE	0	1	3	3	5	5	3	8	6	15	6	1	0	56
S-SE	0	2	3	6	13	17	14	43	42	77	30	10	0	257
S	1	3	4	11	18	20	21	39	35	50	27	8	0	237
S-SW	0	3	6	12	16	15	14	27	21	30	14	7	0	165
SW	1	4	9	11	19	18	12	20	18	16	9	4	0	141
W-SW	0	3	10	15	18	15	10	14	8	6	2	0	0	101
W	1	4	9	19	13	15	9	14	7	4	2	0	0	97
W-NW	2	4	12	12	13	10	9	13	9	7	1	0	0	92
NW	2	4	8	12	14	15	15	22	16	18	3	0	0	129
N-NW	2	4	9	15	15	17	20	39	33	37	10	1	0	202
TOTAL	13	44	101	157	201	213	196	352	261	312	113	31	0	1994

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TABLE 2.7-110

1996 TO 2000 GRAND GULF DATA (AVERAGED IN HOURS)
SLIGHTLY STABLE, STABILITY CLASS E

	Wind Speed (m/sec) at 10 meter (33 feet) Level													
	0.5	0.75	1	1.25	1.5	1.75	2	2.5	3	4	5	7	>13	TOTAL
N	3	12	25	35	37	26	19	22	10	6	1	0	0	196
N-NE	3	13	29	31	40	30	21	18	10	3	0	0	0	198
NE	3	9	21	29	30	19	13	10	5	2	0	0	0	141
E-NE	2	4	8	7	11	8	8	4	1	1	0	0	0	54
E	2	5	5	6	3	2	3	0	1	0	0	0	0	27
E-SE	1	5	7	6	5	3	2	2	1	0	0	0	0	32
SE	1	6	11	17	14	11	6	12	8	5	2	0	0	93
S-SE	1	9	16	29	32	33	31	53	41	42	9	2	0	298
S	2	11	17	30	38	33	22	46	31	22	3	1	0	256
S-SW	1	10	23	25	28	24	18	23	15	17	5	0	0	189
SW	2	11	21	22	15	15	9	18	13	12	5	1	0	144
W-SW	3	13	20	19	21	13	8	12	5	1	0	0	0	115
W	3	13	15	18	15	11	7	8	3	2	0	0	0	95
W-NW	3	10	17	13	15	12	10	8	3	2	0	0	0	93
NW	3	13	17	16	13	12	12	16	7	5	0	0	0	114
N-NW	4	16	23	24	21	15	14	15	14	7	2	0	0	155
TOTAL	37	160	275	327	338	267	203	267	168	127	27	4	0	2200

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TABLE 2.7-111

1996 TO 2000 GRAND GULF DATA (AVERAGED IN HOURS)
MODERATELY STABLE, STABILITY CLASS F

	Wind Speed (m/sec) at 10 meter (33 feet) Level													
	0.5	0.75	1	1.25	1.5	1.75	2	2.5	3	4	5	7	>13	TOTAL
N	5	12	23	19	9	5	3	4	5	3	1	0	0	89
N-NE	6	17	33	31	28	12	7	6	3	1	0	0	0	144
NE	7	26	44	34	20	9	4	5	2	2	0	0	0	153
E-NE	6	16	20	14	10	6	3	3	2	1	0	0	0	81
E	3	9	12	7	4	5	3	1	0	1	0	0	0	45
E-SE	2	8	9	8	3	4	1	1	0	0	0	0	0	36
SE	3	8	11	10	6	2	3	1	2	1	0	0	0	47
S-SE	1	8	9	8	9	9	6	5	4	3	1	1	0	64
S	4	9	14	12	9	8	5	5	3	3	1	1	0	74
S-SW	4	12	10	7	7	4	3	2	1	3	0	0	0	53
SW	3	11	14	8	7	2	3	2	2	2	2	0	0	56
W-SW	4	12	13	8	5	3	2	3	1	0	0	0	0	51
W	3	12	11	7	5	5	3	2	1	0	0	0	0	49
W-NW	3	8	12	8	5	2	3	2	1	1	1	0	0	46
NW	4	11	14	9	5	5	2	3	3	4	1	0	0	61
N-NW	6	15	18	12	6	4	3	4	2	4	1	0	0	75
TOTAL	64	194	267	202	138	85	54	49	32	29	8	2	0	1124

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TABLE 2.7-112

1996 TO 2000 GRAND GULF DATA (AVERAGED IN HOURS)
EXTREMELY STABLE, STABILITY CLASS G

	Wind Speed (m/sec) at 10 meter (33 feet) Level													TOTAL
	0.5	0.75	1	1.25	1.5	1.75	2	2.5	3	4	5	7	>13	
N	3	9	15	9	3	2	2	3	2	1	0	0	0	49
N-NE	4	14	26	21	13	5	2	3	0	0	0	0	0	88
NE	9	47	109	81	30	5	2	2	1	2	0	0	0	288
E-NE	12	56	84	49	16	7	2	1	1	1	0	0	0	229
E	2	12	26	19	14	9	5	4	1	0	0	0	0	92
E-SE	1	7	11	7	4	2	2	1	0	0	0	0	0	35
SE	0	7	7	7	4	2	0	1	0	1	0	0	0	29
S-SE	1	3	7	4	3	3	1	2	2	2	1	0	0	29
S	1	3	6	4	3	1	1	3	2	1	1	0	0	26
S-SW	1	3	5	3	2	1	1	1	1	2	1	0	0	21
SW	1	5	8	5	2	2	2	2	1	1	1	0	0	30
W-SW	3	6	8	3	4	2	1	1	1	1	0	0	0	30
W	2	5	9	6	2	2	1	2	0	0	0	0	0	29
W-NW	2	7	9	4	3	2	1	0	1	0	0	0	0	29
NW	3	8	9	6	1	3	2	2	2	1	0	0	0	37
N-NW	3	6	8	7	4	2	1	3	2	2	0	0	0	38
TOTAL	48	198	347	235	108	50	26	31	17	15	4	0	0	1079

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TABLE 2.7-113

EXCLUSION AREA BOUNDARY CUMULATIVE FREQUENCY OF RELATIVE
CONCENTRATION (X/Q) OF EFFLUENT AT THE MINIMUM SITE BOUNDARY DISTANCE
(841 M), 0-2 HOURS

Cumulative. Frequency	X/Q
1 %	6.365E-04
3 %	4.608E-04
5 %	3.849E-04
10 %	2.884E-04
15 %	2.347E-04
20 %	1.908E-04
25 %	1.522E-04
30 %	1.215E-04
35 %	1.013E-04
40 %	8.776E-05
45 %	7.647E-05
50 %	6.679E-05
55 %	6.156E-05

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TABLE 2.7-114

CUMULATIVE FREQUENCY OF RELATIVE CONCENTRATION (X/Q) OF EFFLUENT AT THE
LOW POPULATION ZONE (3219 M), 0-2 HOURS

Cumulative Frequency.	X/Q
1 %	1.922E-04
3 %	1.382E-04
5 %	1.161E-04
10 %	8.601E-05
15 %	6.562E-05
20 %	4.942E-05
25 %	3.707E-05
30 %	2.869E-05
35 %	2.275E-05
40 %	1.883E-05
45 %	1.576E-05
50 %	1.332E-05
55 %	1.101E-05
60 %	8.977E-06
65 %	7.188E-06
70 %	5.634E-06
75 %	4.260E-06
80 %	3.119E-06
85 %	2.170E-06
90 %	1.374E-06

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TABLE 2.7-115

EXCLUSION AREA BOUNDARY
DIRECTION DEPENDENT SECTOR RELATIVE CONCENTRATION (X/Q)
OF EFFLUENT AT THE MINIMUM SITE BOUNDARY (841 m)

Downwind Sector	0-2 Hours
S	2.93E-04
S-SW	3.51E-04
SW	5.13E-04
W-SW	5.05E-04
W	3.22E-04
W-NW	2.33E-04
NW	2.27E-04
N-NW	2.07E-04
N	2.25E-04
N-NE	2.17E-04
NE	2.36E-04
E-NE	2.50E-04
E	2.43E-04
E-SE	2.34E-04
SE	2.57E-04
S-SE	2.75E-04

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TABLE 2.7-116

LOW POPULATION ZONE
DIRECTION DEPENDENT SECTOR RELATIVE CONCENTRATION (X/Q)
OF EFFLUENT AT THE LPZ (3219 m)

Sector	0-2 Hours	0-8 Hours	8-24 Hours	1-4 Days	4-30 Days
S	8.52E-05	3.98E-05	2.72E-05	1.19E-05	3.64E-06
S-SW	1.05E-04	4.98E-05	3.43E-05	1.53E-05	4.80E-06
SW	1.57E-04	7.65E-05	5.35E-05	2.46E-05	8.04E-06
W-SW	1.52E-04	7.06E-05	4.82E-05	2.10E-05	6.38E-06
W	9.86E-05	4.20E-05	2.74E-05	1.09E-05	2.87E-06
W-NW	6.54E-05	2.73E-05	1.76E-05	6.81E-06	1.74E-06
NW	6.23E-05	2.71E-05	1.79E-05	7.26E-06	1.99E-06
N-NW	5.40E-05	2.60E-05	1.81E-05	8.17E-06	2.62E-06
N	5.94E-05	2.84E-05	1.97E-05	8.84E-06	2.80E-06
N-NE	5.57E-05	2.60E-05	1.78E-05	7.80E-06	2.39E-06
NE	6.44E-05	2.94E-05	1.99E-05	8.51E-06	2.51E-06
E-NE	6.80E-05	3.08E-05	2.07E-05	8.75E-06	2.54E-06
E	6.78E-05	3.03E-05	2.02E-05	8.44E-06	2.40E-06
E-SE	6.44E-05	2.88E-05	1.93E-05	8.07E-06	2.31E-06
SE	7.31E-05	3.30E-05	2.22E-05	9.39E-06	2.72E-06
S-SE	7.71E-05	3.57E-05	2.43E-05	1.05E-05	3.17E-06

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TABLE 2.7-117

ANNUAL AVERAGE X/Q AND D/Q
(DATA PERIOD 1996 - 2000)

Combined vent – Ground Level Releases Only

Location	Direction	Distance (miles)	Distance (meters)	χ/Q (sec/m ³) No Decay Undepleted	χ/Q (sec/m ³) No Decay Depleted	D/Q (per m ²)
SITE BOUNDARY	S	0.72	1155.	4.4E-06	4.0E-06	8.8E-09
SITE BOUNDARY	S-SW	0.73	1169.	5.8E-06	5.2E-06	8.7E-09
SITE BOUNDARY	SW	0.85	1364.	7.7E-06	6.8E-06	7.0E-09
SITE BOUNDARY	W-SW	0.85	1364.	5.6E-06	5.0E-06	3.8E-09
SITE BOUNDARY	W	0.98	1575.	1.7E-06	1.5E-06	1.3E-09
SITE BOUNDARY	W-NW	0.98	1575.	9.8E-07	8.6E-07	8.7E-10
SITE BOUNDARY	NW	0.98	1575.	1.2E-06	1.1E-06	1.8E-09
SITE BOUNDARY	N-NW	0.67	1076.	3.8E-06	3.4E-06	1.1E-08
SITE BOUNDARY	N	0.58	934.	5.2E-06	4.7E-06	1.4E-08
SITE BOUNDARY	N-NE	0.52	841.	5.1E-06	4.7E-06	1.4E-08
SITE BOUNDARY	NE	0.52	841.	5.2E-06	4.7E-06	1.4E-08
SITE BOUNDARY	E-NE	0.52	841.	5.2E-06	4.7E-06	9.9E-09
SITE BOUNDARY	E	0.56	904.	4.2E-06	3.8E-06	8.2E-09
SITE BOUNDARY	E-SE	0.67	1086.	2.9E-06	2.6E-06	6.1E-09
SITE BOUNDARY	SE	0.60	963.	4.4E-06	4.0E-06	9.8E-09
SITE BOUNDARY	S-SE	0.60	963.	5.4E-06	4.8E-06	1.2E-08
NEAREST HOME	S	3.45	5548.	3.8E-07	3.0E-07	5.8E-10
NEAREST HOME	S-SW	1.05	1686.	3.1E-06	2.7E-06	4.7E-09
NEAREST HOME	N	0.81	1310.	2.9E-06	2.6E-06	8.0E-09
NEAREST HOME	N-NE	0.64	1029.	3.6E-06	3.2E-06	1.0E-08
NEAREST HOME	E-NE	0.63	1021.	3.7E-06	3.3E-06	7.2E-09
NEAREST HOME	E-SE	1.06	1708.	1.4E-06	1.2E-06	2.8E-09

GGNS
EARLY SITE PERMIT APPLICATION
PART 3 – ENVIRONMENTAL REPORT

TABLE 2.7-117 (Continued)

Location	Direction	Distance (miles)	Distance (meters)	χ/Q (sec/m ³) No Decay Undepleted	χ/Q (sec/m ³) No Decay Depleted	D/Q (per m ²)
NEAREST HOME	SE	2.39	3843.	4.7E-07	3.8E-07	9.2E-10
NEAREST HOME	S-SE	1.42	2283.	1.3E-06	1.1E-06	2.7E-09
NEAREST GARDEN	S	3.45	5548.	3.8E-07	3.0E-07	5.8E-10
NEAREST GARDEN	S-SW	1.05	1686.	3.1E-06	2.7E-06	4.7E-09
NEAREST GARDEN	N	1.49	2404.	1.1E-06	9.2E-07	2.8E-09
NEAREST GARDEN	E-NE	0.63	1021.	3.7E-06	3.3E-06	7.2E-09
NEAREST GARDEN	E-SE	1.06	1701.	1.4E-06	1.2E-06	2.9E-09
NEAREST GARDEN	SE	4.17	6704.	2.1E-07	1.6E-07	3.4E-10
NEAREST GARDEN	S-SE	4.70	7561.	2.1E-07	1.6E-07	3.3E-10
RV AREA	E-NE	0.39	620.	620.	9.0E-06	0.0E-01
ESC	N-NW	0.20	314.	3.4E-05	3.2E-05	7.8E-08
GIN LAKE	W-NW	0.46	747.	3.6E-06	3.3E-06	3.0E-09
HAMILTON LAKE	W	0.55	884.	4.6E-06	4.2E-06	3.4E-09
SITE GARDEN	S-SE	0.69	1107.	4.2E-06	3.7E-06	9.4E-09

GGNS
EARLY SITE PERMIT APPLICATION
PART 3 – ENVIRONMENTAL REPORT

TABLE 2.7-118

ANNUAL AVERAGE RELATIVE CONCENTRATION, X/Q

COMBINED VENT NO DECAY, UNDEPLETED											
ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)				DISTANCE IN MILES FROM THE SITE							
SECTOR	0.250	0.500	0.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	2.913E-05	8.459E-06	4.119E-06	2.540E-06	1.332E-06	8.583E-07	6.152E-07	4.707E-07	3.765E-07	3.108E-07	2.628E-07
S-SW	3.876E-05	1.128E-05	5.481E-06	3.386E-06	1.783E-06	1.153E-06	8.292E-07	6.364E-07	5.103E-07	4.223E-07	3.579E-07
SW	6.767E-05	1.960E-05	9.437E-06	5.845E-06	3.103E-06	2.022E-06	1.465E-06	1.131E-06	9.119E-07	7.583E-07	6.454E-07
W-SW	4.985E-05	1.442E-05	6.918E-06	4.290E-06	2.284E-06	1.493E-06	1.085E-06	8.394E-07	6.782E-07	5.650E-07	4.817E-07
W	1.872E-05	5.427E-06	2.613E-06	1.619E-06	8.605E-07	5.615E-07	4.071E-07	3.147E-07	2.539E-07	2.113E-07	1.799E-07
W-NW	1.088E-05	3.168E-06	1.534E-06	9.492E-07	5.024E-07	3.265E-07	2.359E-07	1.818E-07	1.462E-07	1.214E-07	1.032E-07
NW	1.345E-05	3.929E-06	1.914E-06	1.182E-06	6.218E-07	4.018E-07	2.887E-07	2.215E-07	1.775E-07	1.468E-07	1.243E-07
N-NW	2.184E-05	6.369E-06	3.119E-06	1.921E-06	1.003E-06	6.431E-07	4.591E-07	3.501E-07	2.791E-07	2.298E-07	1.938E-07
N	2.342E-05	6.814E-06	3.332E-06	2.052E-06	1.072E-06	6.873E-07	4.908E-07	3.743E-07	2.985E-07	2.458E-07	2.073E-07
N-NE	1.929E-05	5.567E-06	2.713E-06	1.668E-06	8.721E-07	5.599E-07	4.001E-07	3.054E-07	2.437E-07	2.008E-07	1.694E-07
NE	1.959E-05	5.613E-06	2.722E-06	1.674E-06	8.765E-07	5.638E-07	4.036E-07	3.085E-07	2.465E-07	2.033E-07	1.718E-07
E-NE	1.960E-05	5.640E-06	2.736E-06	1.685E-06	8.839E-07	5.697E-07	4.085E-07	3.127E-07	2.502E-07	2.067E-07	1.748E-07
E	1.805E-05	5.179E-06	2.510E-06	1.545E-06	8.106E-07	5.223E-07	3.745E-07	2.866E-07	2.293E-07	1.894E-07	1.602E-07
E-SE	1.759E-05	5.033E-06	2.436E-06	1.499E-06	7.870E-07	5.073E-07	3.638E-07	2.786E-07	2.229E-07	1.841E-07	1.558E-07
SE	2.115E-05	6.062E-06	2.935E-06	1.807E-06	9.493E-07	6.123E-07	4.393E-07	3.365E-07	2.694E-07	2.226E-07	1.884E-07
S-SE	2.553E-05	7.382E-06	3.591E-06	2.212E-06	1.159E-06	7.459E-07	5.341E-07	4.084E-07	3.264E-07	2.693E-07	2.276E-07
ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)				DISTANCE IN MILES FROM THE SITE							
SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	2.264E-07	1.287E-07	8.683E-08	5.028E-08	3.432E-08	2.559E-08	2.017E-08	1.651E-08	1.389E-08	1.193E-08	1.042E-08
S-SW	3.089E-07	1.769E-07	1.199E-07	6.997E-08	4.799E-08	3.592E-08	2.840E-08	2.331E-08	1.965E-08	1.692E-08	1.481E-08
SW	5.594E-07	3.254E-07	2.232E-07	1.324E-07	9.189E-08	6.942E-08	5.529E-08	4.566E-08	3.872E-08	3.349E-08	2.943E-08
W-SW	4.181E-07	2.446E-07	1.685E-07	1.005E-07	7.002E-08	5.305E-08	4.236E-08	3.505E-08	2.978E-08	2.580E-08	2.270E-08
W	1.560E-07	9.096E-08	6.247E-08	3.712E-08	2.579E-08	1.950E-08	1.554E-08	1.284E-08	1.089E-08	9.424E-09	8.284E-09
W-NW	8.927E-08	5.162E-08	3.525E-08	2.076E-08	1.434E-08	1.079E-08	8.564E-09	7.053E-09	5.965E-09	5.149E-09	4.516E-09
NW	1.073E-07	6.132E-08	4.152E-08	2.417E-08	1.656E-08	1.238E-08	9.775E-09	8.015E-09	6.753E-09	5.809E-09	5.080E-09
N-NW	1.666E-07	9.382E-08	6.283E-08	3.601E-08	2.440E-08	1.809E-08	1.419E-08	1.156E-08	9.694E-09	8.303E-09	7.231E-09
N	1.782E-07	1.005E-07	6.732E-08	3.862E-08	2.618E-08	1.942E-08	1.523E-08	1.242E-08	1.042E-08	8.923E-09	7.773E-09
N-NE	1.458E-07	8.235E-08	5.529E-08	3.181E-08	2.162E-08	1.607E-08	1.263E-08	1.031E-08	8.658E-09	7.425E-09	6.475E-09
NE	1.480E-07	8.399E-08	5.659E-08	3.274E-08	2.234E-08	1.666E-08	1.313E-08	1.075E-08	9.044E-09	7.771E-09	6.788E-09
E-NE	1.507E-07	8.585E-08	5.799E-08	3.367E-08	2.303E-08	1.720E-08	1.358E-08	1.113E-08	9.371E-09	8.059E-09	7.045E-09
E	1.381E-07	7.864E-08	5.312E-08	3.083E-08	2.109E-08	1.575E-08	1.243E-08	1.019E-08	8.581E-09	7.380E-09	6.451E-09
E-SE	1.343E-07	7.653E-08	5.172E-08	3.005E-08	2.057E-08	1.538E-08	1.214E-08	9.957E-09	8.391E-09	7.220E-09	6.314E-09
SE	1.624E-07	9.263E-08	6.263E-08	3.641E-08	2.493E-08	1.864E-08	1.472E-08	1.207E-08	1.017E-08	8.754E-09	7.656E-09
S-SE	1.960E-07	1.112E-07	7.493E-08	4.332E-08	2.954E-08	2.202E-08	1.734E-08	1.419E-08	1.193E-08	1.025E-08	8.949E-09

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PART 3 – ENVIRONMENTAL REPORT

TABLE 2.7-118 (Continued)

COMBINED VENT
NO DECAY, UNDEPLETED

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT
SEGMENT BOUNDARIES IN MILES FROM THE SITE
DIRECTION .5-1 1-2 2-3 3-4 4-5 5-10 10-20 20-30 30-40 40-50
FROM SITE

S	4.382E-06	1.390E-06	6.222E-07	3.784E-07	2.636E-07	1.318E-07	5.131E-08	2.575E-08	1.655E-08	1.195E-08
S-SW	5.838E-06	1.859E-06	8.384E-07	5.128E-07	3.588E-07	1.809E-07	7.131E-08	3.613E-08	2.337E-08	1.695E-08
SW	1.010E-05	3.232E-06	1.480E-06	9.160E-07	6.470E-07	3.320E-07	1.346E-07	6.976E-08	4.577E-08	3.354E-08
W-SW	7.417E-06	2.378E-06	1.096E-06	6.811E-07	4.828E-07	2.493E-07	1.020E-07	5.330E-08	3.513E-08	2.583E-08
W	2.797E-06	8.962E-07	4.113E-07	2.550E-07	1.804E-07	9.276E-08	3.772E-08	1.959E-08	1.287E-08	9.436E-09
W-NW	1.637E-06	5.235E-07	2.384E-07	1.469E-07	1.034E-07	5.271E-08	2.113E-08	1.084E-08	7.070E-09	5.157E-09
NW	2.037E-06	6.485E-07	2.920E-07	1.784E-07	1.247E-07	6.274E-08	2.464E-08	1.245E-08	8.037E-09	5.819E-09
N-NW	3.309E-06	1.047E-06	4.646E-07	2.806E-07	1.944E-07	9.622E-08	3.681E-08	1.821E-08	1.160E-08	8.318E-09
N	3.537E-06	1.119E-06	4.966E-07	3.001E-07	2.079E-07	1.030E-07	3.947E-08	1.955E-08	1.246E-08	8.940E-09
N-NE	2.883E-06	9.103E-07	4.048E-07	2.449E-07	1.699E-07	8.442E-08	3.250E-08	1.617E-08	1.034E-08	7.439E-09
NE	2.899E-06	9.147E-07	4.083E-07	2.478E-07	1.723E-07	8.603E-08	3.342E-08	1.676E-08	1.078E-08	7.784E-09
E-NE	2.914E-06	9.222E-07	4.132E-07	2.515E-07	1.753E-07	8.788E-08	3.434E-08	1.731E-08	1.116E-08	8.072E-09
E	2.674E-06	8.457E-07	3.788E-07	2.305E-07	1.606E-07	8.050E-08	3.145E-08	1.585E-08	1.022E-08	7.392E-09
E-SE	2.597E-06	8.209E-07	3.680E-07	2.240E-07	1.562E-07	7.834E-08	3.065E-08	1.547E-08	9.985E-09	7.232E-09
SE	3.129E-06	9.902E-07	4.443E-07	2.707E-07	1.889E-07	9.481E-08	3.714E-08	1.875E-08	1.210E-08	8.768E-09
S-SE	3.821E-06	1.210E-06	5.403E-07	3.281E-07	2.282E-07	1.139E-07	4.422E-08	2.215E-08	1.423E-08	1.027E-08

GGNS
EARLY SITE PERMIT APPLICATION
PART 3 – ENVIRONMENTAL REPORT

TABLE 2.7-119

ANNUAL AVERAGE RELATIVE CONCENTRATION, X/Q

COMBINED VENT NO DECAY, DEPLETED											
ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)											
SECTOR	0.250	0.500	0.750	1.000	DISTANCE IN MILES FROM THE SITE						
					1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	2.711E-05	7.694E-06	3.671E-06	2.223E-06	1.132E-06	7.107E-07	4.983E-07	3.739E-07	2.937E-07	2.386E-07	1.987E-07
S-SW	3.607E-05	1.026E-05	4.884E-06	2.964E-06	1.514E-06	9.547E-07	6.717E-07	5.055E-07	3.982E-07	3.242E-07	2.706E-07
SW	6.297E-05	1.783E-05	8.409E-06	5.116E-06	2.635E-06	1.675E-06	1.186E-06	8.984E-07	7.116E-07	5.821E-07	4.880E-07
W-SW	4.640E-05	1.311E-05	6.165E-06	3.755E-06	1.940E-06	1.237E-06	8.785E-07	6.668E-07	5.292E-07	4.337E-07	3.642E-07
W	1.742E-05	4.937E-06	2.328E-06	1.417E-06	7.308E-07	4.650E-07	3.298E-07	2.500E-07	1.981E-07	1.622E-07	1.361E-07
W-NW	1.012E-05	2.881E-06	1.367E-06	8.309E-07	4.267E-07	2.704E-07	1.911E-07	1.444E-07	1.141E-07	9.319E-08	7.799E-08
NW	1.252E-05	3.574E-06	1.706E-06	1.035E-06	5.281E-07	3.327E-07	2.339E-07	1.759E-07	1.385E-07	1.127E-07	9.401E-08
N-NW	2.032E-05	5.793E-06	2.779E-06	1.681E-06	8.517E-07	5.325E-07	3.719E-07	2.781E-07	2.178E-07	1.764E-07	1.465E-07
N	2.180E-05	6.198E-06	2.970E-06	1.796E-06	9.100E-07	5.692E-07	3.976E-07	2.973E-07	2.329E-07	1.887E-07	1.567E-07
N-NE	1.795E-05	5.064E-06	2.417E-06	1.460E-06	7.406E-07	4.636E-07	3.241E-07	2.426E-07	1.901E-07	1.541E-07	1.281E-07
NE	1.824E-05	5.105E-06	2.426E-06	1.465E-06	7.444E-07	4.668E-07	3.269E-07	2.450E-07	1.923E-07	1.561E-07	1.299E-07
E-NE	1.824E-05	5.130E-06	2.438E-06	1.475E-06	7.507E-07	4.717E-07	3.309E-07	2.484E-07	1.952E-07	1.586E-07	1.322E-07
E	1.679E-05	4.711E-06	2.237E-06	1.352E-06	6.884E-07	4.325E-07	3.033E-07	2.277E-07	1.789E-07	1.454E-07	1.211E-07
E-SE	1.637E-05	4.578E-06	2.171E-06	1.312E-06	6.683E-07	4.201E-07	2.947E-07	2.213E-07	1.739E-07	1.413E-07	1.178E-07
SE	1.968E-05	5.514E-06	2.615E-06	1.582E-06	8.062E-07	5.070E-07	3.559E-07	2.673E-07	2.102E-07	1.709E-07	1.424E-07
S-SE	2.376E-05	6.715E-06	3.200E-06	1.937E-06	9.844E-07	6.177E-07	4.327E-07	3.244E-07	2.547E-07	2.067E-07	1.721E-07
ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)											
SECTOR	5.000	7.500	10.000	15.000	DISTANCE IN MILES FROM THE SITE						
					20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	1.688E-07	9.075E-08	5.833E-08	3.126E-08	2.004E-08	1.416E-08	1.064E-08	8.334E-09	6.734E-09	5.572E-09	4.697E-09
S-SW	2.303E-07	1.247E-07	8.058E-08	4.351E-08	2.803E-08	1.988E-08	1.498E-08	1.177E-08	9.531E-09	7.902E-09	6.672E-09
SW	4.170E-07	2.294E-07	1.500E-07	8.233E-08	5.367E-08	3.841E-08	2.916E-08	2.306E-08	1.878E-08	1.564E-08	1.326E-08
W-SW	3.116E-07	1.724E-07	1.132E-07	6.248E-08	4.089E-08	2.936E-08	2.234E-08	1.770E-08	1.444E-08	1.205E-08	1.023E-08
W	1.163E-07	6.412E-08	4.197E-08	2.308E-08	1.506E-08	1.079E-08	8.195E-09	6.482E-09	5.281E-09	4.401E-09	3.733E-09
W-NW	6.654E-08	3.639E-08	2.368E-08	1.291E-08	8.374E-09	5.969E-09	4.517E-09	3.561E-09	2.893E-09	2.405E-09	2.035E-09
NW	7.997E-08	4.323E-08	2.790E-08	1.503E-08	9.669E-09	6.849E-09	5.156E-09	4.047E-09	3.275E-09	2.713E-09	2.289E-09
N-NW	1.242E-07	6.614E-08	4.221E-08	2.239E-08	1.425E-08	1.001E-08	7.482E-09	5.839E-09	4.701E-09	3.877E-09	3.259E-09
N	1.329E-07	7.082E-08	4.523E-08	2.401E-08	1.529E-08	1.074E-08	8.035E-09	6.272E-09	5.051E-09	4.167E-09	3.503E-09
N-NE	1.087E-07	5.806E-08	3.715E-08	1.978E-08	1.263E-08	8.891E-09	6.660E-09	5.206E-09	4.199E-09	3.468E-09	2.918E-09
NE	1.103E-07	5.921E-08	3.802E-08	2.036E-08	1.305E-08	9.219E-09	6.925E-09	5.427E-09	4.386E-09	3.629E-09	3.059E-09
E-NE	1.123E-07	6.052E-08	3.896E-08	2.093E-08	1.345E-08	9.519E-09	7.160E-09	5.617E-09	4.544E-09	3.763E-09	3.175E-09
E	1.029E-07	5.544E-08	3.569E-08	1.917E-08	1.232E-08	8.716E-09	6.556E-09	5.144E-09	4.161E-09	3.446E-09	2.907E-09
E-SE	1.001E-07	5.395E-08	3.475E-08	1.869E-08	1.201E-08	8.509E-09	6.405E-09	5.027E-09	4.069E-09	3.372E-09	2.846E-09
SE	1.211E-07	6.530E-08	4.208E-08	2.264E-08	1.456E-08	1.031E-08	7.764E-09	6.095E-09	4.933E-09	4.088E-09	3.450E-09
S-SE	1.461E-07	7.842E-08	5.034E-08	2.694E-08	1.725E-08	1.218E-08	9.146E-09	7.163E-09	5.786E-09	4.786E-09	4.033E-09

GGNS
EARLY SITE PERMIT APPLICATION
PART 3 – ENVIRONMENTAL REPORT

TABLE 2.7-119 (Continued)

COMBINED VENT
NO DECAY, DEPLETED

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

DIRECTION FROM SITE	SEGMENT BOUNDARIES IN MILES FROM THE SITE									
	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	3.921E-06	1.187E-06	5.052E-07	2.956E-07	1.994E-07	9.369E-08	3.229E-08	1.432E-08	8.382E-09	5.592E-09
S-SW	5.225E-06	1.588E-06	6.807E-07	4.007E-07	2.715E-07	1.286E-07	4.487E-08	2.009E-08	1.183E-08	7.929E-09
SW	9.038E-06	2.759E-06	1.201E-06	7.156E-07	4.896E-07	2.358E-07	8.462E-08	3.878E-08	2.317E-08	1.569E-08
W-SW	6.638E-06	2.031E-06	8.893E-07	5.321E-07	3.653E-07	1.770E-07	6.415E-08	2.963E-08	1.778E-08	1.208E-08
W	2.503E-06	7.652E-07	3.339E-07	1.993E-07	1.365E-07	6.588E-08	2.371E-08	1.089E-08	6.514E-09	4.414E-09
W-NW	1.465E-06	4.470E-07	1.935E-07	1.148E-07	7.826E-08	3.744E-08	1.329E-08	6.030E-09	3.580E-09	2.412E-09
NW	1.823E-06	5.539E-07	2.370E-07	1.394E-07	9.434E-08	4.458E-08	1.551E-08	6.924E-09	4.069E-09	2.723E-09
N-NW	2.961E-06	8.942E-07	3.772E-07	2.192E-07	1.471E-07	6.840E-08	2.318E-08	1.013E-08	5.875E-09	3.892E-09
N	3.165E-06	9.554E-07	4.032E-07	2.345E-07	1.574E-07	7.324E-08	2.485E-08	1.087E-08	6.311E-09	4.183E-09
N-NE	2.580E-06	7.775E-07	3.287E-07	1.914E-07	1.286E-07	6.001E-08	2.046E-08	8.995E-09	5.238E-09	3.481E-09
NE	2.594E-06	7.812E-07	3.315E-07	1.936E-07	1.304E-07	6.115E-08	2.103E-08	9.323E-09	5.458E-09	3.642E-09
E-NE	2.608E-06	7.876E-07	3.354E-07	1.965E-07	1.327E-07	6.245E-08	2.161E-08	9.624E-09	5.649E-09	3.777E-09
E	2.393E-06	7.222E-07	3.075E-07	1.801E-07	1.216E-07	5.721E-08	1.980E-08	8.812E-09	5.173E-09	3.458E-09
E-SE	2.324E-06	7.011E-07	2.988E-07	1.750E-07	1.182E-07	5.567E-08	1.929E-08	8.602E-09	5.056E-09	3.384E-09
SE	2.800E-06	8.457E-07	3.608E-07	2.115E-07	1.429E-07	6.737E-08	2.337E-08	1.043E-08	6.129E-09	4.102E-09
S-SE	3.420E-06	1.033E-06	4.387E-07	2.563E-07	1.727E-07	8.098E-08	2.784E-08	1.232E-08	7.205E-09	4.804E-09

GGNS
EARLY SITE PERMIT APPLICATION
PART 3 – ENVIRONMENTAL REPORT

TABLE 2.7-120

ANNUAL AVERAGE RELATIVE DEPOSITION, D/Q

COMBINED VENT *****											
RELATIVE DEPOSITION PER UNIT AREA (M**2) AT FIXED POINTS BY DOWNWIND SECTORS *****											
DIRECTION FROM SITE	DISTANCES IN MILES										
	0.25	0.50	0.75	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50
S	4.714E-08	1.594E-08	8.185E-09	5.026E-09	2.506E-09	1.520E-09	1.028E-09	7.446E-10	5.662E-10	4.460E-10	3.611E-10
S-SW	4.735E-08	1.601E-08	8.221E-09	5.048E-09	2.517E-09	1.526E-09	1.032E-09	7.478E-10	5.686E-10	4.480E-10	3.626E-10
SW	4.939E-08	1.670E-08	8.575E-09	5.265E-09	2.625E-09	1.592E-09	1.076E-09	7.800E-10	5.931E-10	4.673E-10	3.783E-10
W-SW	2.657E-08	8.986E-09	4.614E-09	2.833E-09	1.412E-09	8.567E-10	5.792E-10	4.197E-10	3.191E-10	2.514E-10	2.035E-10
W	1.171E-08	3.958E-09	2.032E-09	1.248E-09	6.222E-10	3.774E-10	2.551E-10	1.849E-10	1.406E-10	1.108E-10	8.966E-11
W-NW	7.907E-09	2.674E-09	1.373E-09	8.430E-10	4.203E-10	2.549E-10	1.723E-10	1.249E-10	9.496E-11	7.481E-11	6.057E-11
NW	1.663E-08	5.625E-09	2.888E-09	1.773E-09	8.841E-10	5.362E-10	3.625E-10	2.627E-10	1.998E-10	1.574E-10	1.274E-10
N-NW	5.384E-08	1.821E-08	9.348E-09	5.740E-09	2.862E-09	1.736E-09	1.173E-09	8.503E-10	6.466E-10	5.094E-10	4.124E-10
N	5.271E-08	1.782E-08	9.151E-09	5.619E-09	2.801E-09	1.699E-09	1.149E-09	8.324E-10	6.330E-10	4.987E-10	4.037E-10
N-NE	4.528E-08	1.531E-08	7.861E-09	4.827E-09	2.407E-09	1.460E-09	9.868E-10	7.151E-10	5.437E-10	4.284E-10	3.468E-10
NE	4.470E-08	1.511E-08	7.761E-09	4.765E-09	2.376E-09	1.441E-09	9.742E-10	7.059E-10	5.368E-10	4.229E-10	3.424E-10
E-NE	3.137E-08	1.061E-08	5.447E-09	3.344E-09	1.667E-09	1.011E-09	6.837E-10	4.954E-10	3.767E-10	2.968E-10	2.403E-10
E	2.938E-08	9.936E-09	5.101E-09	3.133E-09	1.562E-09	9.472E-10	6.404E-10	4.640E-10	3.529E-10	2.780E-10	2.250E-10
E-SE	2.946E-08	9.963E-09	5.116E-09	3.141E-09	1.566E-09	9.498E-10	6.422E-10	4.653E-10	3.538E-10	2.788E-10	2.257E-10
SE	3.894E-08	1.317E-08	6.760E-09	4.151E-09	2.070E-09	1.255E-09	8.486E-10	6.149E-10	4.676E-10	3.684E-10	2.982E-10
S-SE	4.657E-08	1.575E-08	8.086E-09	4.965E-09	2.475E-09	1.501E-09	1.015E-09	7.355E-10	5.593E-10	4.406E-10	3.567E-10

DIRECTION FROM SITE	DISTANCES IN MILES										
	5.00	7.50	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00
S	2.987E-10	1.464E-10	9.184E-11	4.642E-11	2.810E-11	1.884E-11	1.350E-11	1.014E-11	7.881E-12	6.295E-12	5.138E-12
S-SW	3.000E-10	1.470E-10	9.224E-11	4.662E-11	2.822E-11	1.892E-11	1.356E-11	1.018E-11	7.915E-12	6.322E-12	5.161E-12
SW	3.129E-10	1.533E-10	9.622E-11	4.863E-11	2.943E-11	1.974E-11	1.414E-11	1.062E-11	8.256E-12	6.595E-12	5.383E-12
W-SW	1.684E-10	8.251E-11	5.177E-11	2.617E-11	1.584E-11	1.062E-11	7.609E-12	5.714E-12	4.443E-12	3.549E-12	2.897E-12
W	7.417E-11	3.635E-11	2.281E-11	1.153E-11	6.977E-12	4.678E-12	3.352E-12	2.517E-12	1.957E-12	1.563E-12	1.276E-12
W-NW	5.010E-11	2.455E-11	1.540E-11	7.786E-12	4.713E-12	3.160E-12	2.264E-12	1.700E-12	1.322E-12	1.056E-12	8.619E-13
NW	1.054E-10	5.165E-11	3.241E-11	1.638E-11	9.914E-12	6.647E-12	4.763E-12	3.576E-12	2.781E-12	2.221E-12	1.813E-12
N-NW	3.411E-10	1.672E-10	1.049E-10	5.302E-11	3.209E-11	2.151E-11	1.542E-11	1.158E-11	9.000E-12	7.190E-12	5.868E-12
N	3.339E-10	1.636E-10	1.027E-10	5.190E-11	3.141E-11	2.106E-11	1.509E-11	1.133E-11	8.811E-12	7.038E-12	5.745E-12
N-NE	2.869E-10	1.406E-10	8.821E-11	4.458E-11	2.698E-11	1.809E-11	1.296E-11	9.735E-12	7.569E-12	6.046E-12	4.935E-12
NE	2.832E-10	1.388E-10	8.708E-11	4.401E-11	2.664E-11	1.786E-11	1.280E-11	9.610E-12	7.472E-12	5.969E-12	4.872E-12
E-NE	1.988E-10	9.740E-11	6.111E-11	3.089E-11	1.870E-11	1.254E-11	8.982E-12	6.745E-12	5.244E-12	4.189E-12	3.419E-12
E	1.862E-10	9.123E-11	5.724E-11	2.893E-11	1.751E-11	1.174E-11	8.413E-12	6.317E-12	4.912E-12	3.924E-12	3.203E-12
E-SE	1.867E-10	9.148E-11	5.740E-11	2.901E-11	1.756E-11	1.177E-11	8.436E-12	6.335E-12	4.925E-12	3.934E-12	3.211E-12
SE	2.467E-10	1.209E-10	7.585E-11	3.834E-11	2.321E-11	1.556E-11	1.115E-11	8.371E-12	6.509E-12	5.199E-12	4.244E-12
S-SE	2.951E-10	1.446E-10	9.072E-11	4.586E-11	2.775E-11	1.861E-11	1.333E-11	1.001E-11	7.785E-12	6.219E-12	5.076E-12

GGNS
EARLY SITE PERMIT APPLICATION
PART 3 – ENVIRONMENTAL REPORT

TABLE 2.7-120 (Continued)

COMBINED VENT *****										
RELATIVE DEPOSITION PER UNIT AREA (M**2) BY DOWNWIND SECTORS *****										
SEGMENT BOUNDARIES IN MILES										
DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	8.505E-09	2.628E-09	1.046E-09	5.714E-10	3.631E-10	1.560E-10	4.837E-11	1.917E-11	1.024E-11	6.337E-12
S-SW	8.542E-09	2.639E-09	1.050E-09	5.738E-10	3.647E-10	1.567E-10	4.858E-11	1.925E-11	1.028E-11	6.364E-12
SW	8.910E-09	2.753E-09	1.095E-09	5.986E-10	3.804E-10	1.634E-10	5.067E-11	2.008E-11	1.073E-11	6.638E-12
W-SW	4.794E-09	1.481E-09	5.894E-10	3.221E-10	2.047E-10	8.793E-11	2.727E-11	1.081E-11	5.771E-12	3.572E-12
W	2.112E-09	6.525E-10	2.596E-10	1.419E-10	9.017E-11	3.873E-11	1.201E-11	4.760E-12	2.542E-12	1.573E-12
W-NW	1.427E-09	4.407E-10	1.754E-10	9.584E-11	6.091E-11	2.616E-11	8.113E-12	3.216E-12	1.717E-12	1.063E-12
NW	3.001E-09	9.271E-10	3.689E-10	2.016E-10	1.281E-10	5.504E-11	1.707E-11	6.764E-12	3.612E-12	2.236E-12
N-NW	9.713E-09	3.001E-09	1.194E-09	6.525E-10	4.147E-10	1.781E-10	5.524E-11	2.189E-11	1.169E-11	7.237E-12
N	9.509E-09	2.938E-09	1.169E-09	6.388E-10	4.060E-10	1.744E-10	5.408E-11	2.143E-11	1.145E-11	7.084E-12
N-NE	8.168E-09	2.524E-09	1.004E-09	5.488E-10	3.488E-10	1.498E-10	4.646E-11	1.841E-11	9.832E-12	6.086E-12
NE	8.064E-09	2.491E-09	9.913E-10	5.417E-10	3.443E-10	1.479E-10	4.586E-11	1.818E-11	9.707E-12	6.008E-12
E-NE	5.659E-09	1.748E-09	6.957E-10	3.802E-10	2.416E-10	1.038E-10	3.219E-11	1.276E-11	6.812E-12	4.217E-12
E	5.301E-09	1.638E-09	6.517E-10	3.561E-10	2.263E-10	9.722E-11	3.015E-11	1.195E-11	6.381E-12	3.949E-12
E-SE	5.315E-09	1.642E-09	6.535E-10	3.571E-10	2.270E-10	9.749E-11	3.023E-11	1.198E-11	6.398E-12	3.960E-12
SE	7.024E-09	2.170E-09	8.636E-10	4.719E-10	2.999E-10	1.288E-10	3.995E-11	1.583E-11	8.455E-12	5.234E-12
S-SE	8.401E-09	2.596E-09	1.033E-09	5.644E-10	3.587E-10	1.541E-10	4.778E-11	1.894E-11	1.011E-11	6.260E-12