

PROJECT INFORMATION, CLIMATE AND SOIL DATA  
DEQUEEN LAKE OFFICE

Project Information: DeQueen Lake Office is located off U.S. Highway 71, approximately five miles from DeQueen, Arkansas. Its primary purposes are to provide administrative and operational support to DeQueen Dam, Spillway, recreational parks and facilities.

Climate: DeQueen Lake Office is located in Sevier County, Arkansas. Sevier County is characterized by hot summers and mild winters. Precipitation generally is ample and is well distributed. On at least six days in the summer, temperatures of 100 degrees F or higher can be expected. In winter, only about half the winter nights have temperatures below freezing and daytime temperatures range in the 50 to 60 degree F range.

Rainfall: Rainfall averages for the general area are as follows:

|                   |                   |
|-------------------|-------------------|
| Jan - 3.81 inches | Jul - 3.87 inches |
| Feb - 4.18 inches | Aug - 3.73 inches |
| Mar - 5.00 inches | Sep - 4.16 inches |
| Apr - 6.36 inches | Oct - 3.72 inches |
| May - 6.69 inches | Nov - 4.09 inches |
| Jun - 4.45 inches | Dec - 3.97 inches |

The total annual precipitation is approximately 54 inches. Spring is the wettest season, about one-third of the annual precipitation falls in the three month period March through May. Snowfall is negligible. The annual snowfall averages less than 3 inches and usually either melts within a few hours or as it falls.

Soils: Soil information is not yet available for this county from the Natural Resource Conservation Service.

Groundwater: Depth to groundwater is unknown.

Source: At this time the Natural Resource Conservation Service has not completed the Soil Survey for Sevier County, Arkansas. Climate information was taken from the Soil Survey for the adjoining county (Howard County) issued 1975. This appendix will be revised when the Soil Survey is completed for Sevier County.

PROJECT INFORMATION, CLIMATE AND SOIL DATA  
DEQUEEN DAM AND SPILLWAY

Project Information: DeQueen Dam and Spillway are located on the Rolling Fork River, about four miles from DeQueen, Arkansas. Its primary purposes are to provide flood control and water supply.

Climate: DeQueen Dam and Spillway are located in Sevier County, Arkansas. Sevier County is characterized by hot summers and mild winters. Precipitation generally is ample and is well distributed. On at least six days in the summer, temperatures of 100 degrees F. or higher can be expected. In winter, only about half the winter nights have temperatures below freezing and daytime temperatures range in the 50 to 60 degree F. range.

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25 Sep 97

SPILL HISTORY - DEQUEEN LAKE OFFICE, DAM AND SPILLWAY

CESWL-CO-MW

08 November 1995

MEMORANDUM THRU Chief, Construction-Operations Division  
FOR Emergency Management Branch  
ATTN Jane Smith

SUBJECT: Spill History

1. Reference memorandum dated 16 October 1995, SAB, the following information is submitted from the Millwood-Tri Lakes projects.
2. This resident office reports one spill and the requested information is as follows:
  - a. De Queen Project Office
  - b. October 1992
  - c. Gasoline
  - d. Unknown
  - e. Underground tank failure
  - f. Tank was removed by a qualified team from the Memphis District Corps of Engineers and a above ground system put into place.
  - g. All contaminated soil was collected at the site, removed to a suitable location on project owned land, placed on plastic sheeting in windrows and allowed to air dry over a prescribed time period. Contaminated soil was turned at intervals to promote the decontamination process.
3. The Millwood, Dierks and Gillham Projects report a negative response.

  
MOBIE L. PRICE  
Resident Manager

PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX  
MILLWOOD-TRI LAKES

| Facility                          | Petroleum and Hazardous Substances      | Approx. Quantity | Location                | On/Off Shore | Spill Prevention Measures                          |
|-----------------------------------|---|------------------|-------------------------|--------------|--|
| Dierks Lake Office,<br>Dierks, AR | Gasoline<br>Aboveground<br>Storage Tank | 1016 Gal         | Compound Area           | On           | Secondary<br>Containment                           |
| Dierks Control Tower              | Hydraulic Oil                           | 175 Gal          | Control Tower<br>System | Off          | Sorbents   |
|                                   | Hydraulic Oil                           | 75 Gal           | Control Tower           |              |  |
|                                   | Diesel<br>Aboveground<br>Storage Tank   | 150 Gal          | Control Tower           | On           | Double wall tank<br>with secondary<br>containment. |

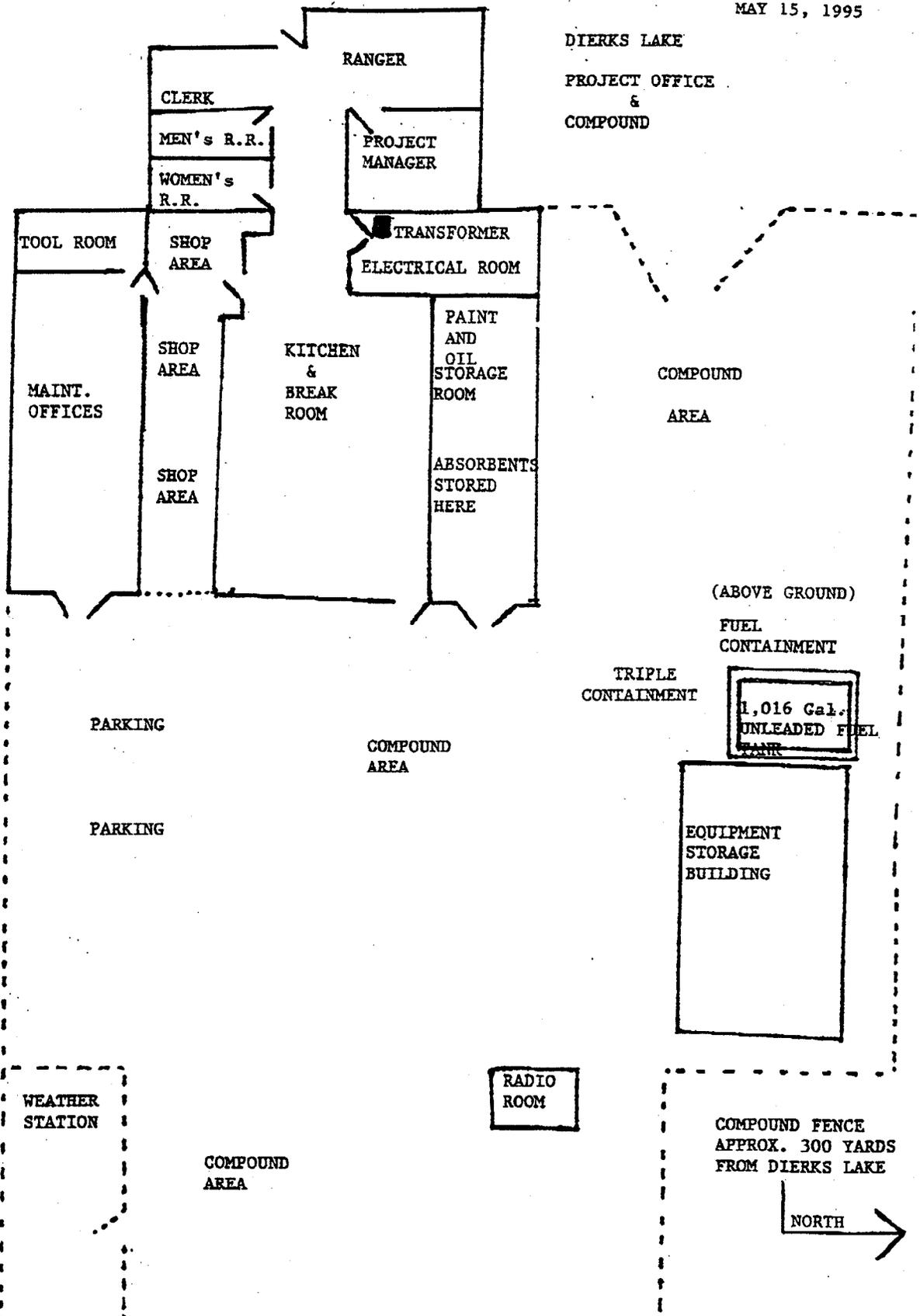
**SITE DESCRIPTION AND MAPS**

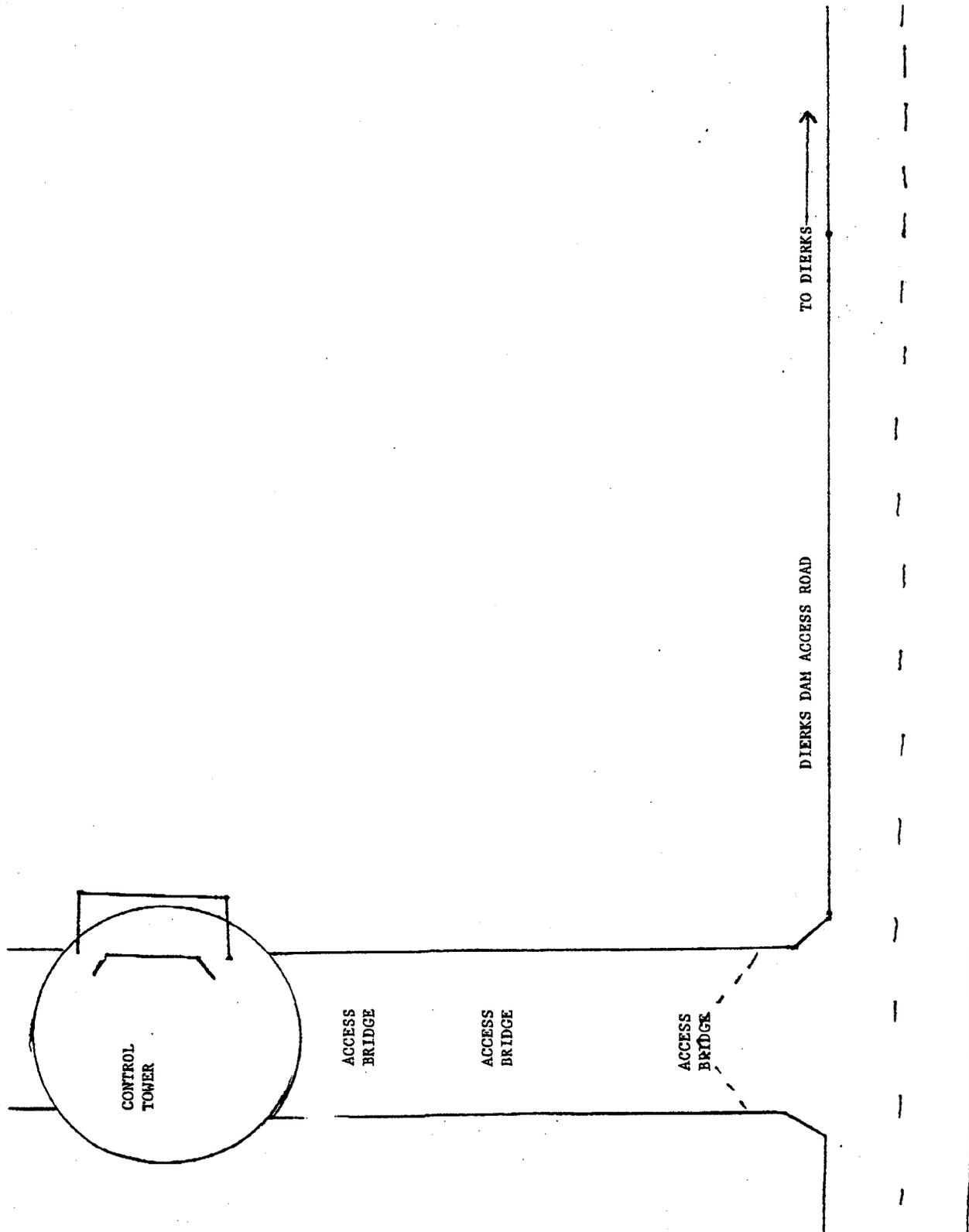
**POTENTIAL SPILL SITES AND SITE MAPS  
DIERKS LAKE**

1. CONTROL TOWER DIESEL TANK (150 GALLONS) (double containment)
2. CONTROL TOWER HYDRAULIC SYSTEM (135 GALLONS)
3. CONTROL TOWER HYDRAULIC DRUMS (@ 75 GALLONS)
  - a. Data is the same for these three items:
  - b. Located in control tower - mid lake.
  - c. Sumps located @ 65 feet below, operated by automatic start up system initiate from sump tank by liquid elevation in sump tank.
  - d. Flow direction is downstream below the dam and rate of flow depends on cfs release rate.
  - e. Spill containment kit on site.
  
4. PROJECT OFFICE COMPOUND UNLEADED GASOLINE TANK (1016 GALLONS)
  - a. Exterior above ground containment with triple containment, the tank, a metal containment tank and a concrete containment tank.
  - b. Exterior drains are valved.
  - c. Flow direction is north to Dierks Lake approx 300 yards downhill. Rate of flow is indeterminate.
  - d. Depth to groundwater is unknown, site is rock hilltop. Water table varies with rainfall.

MAY 15, 1995

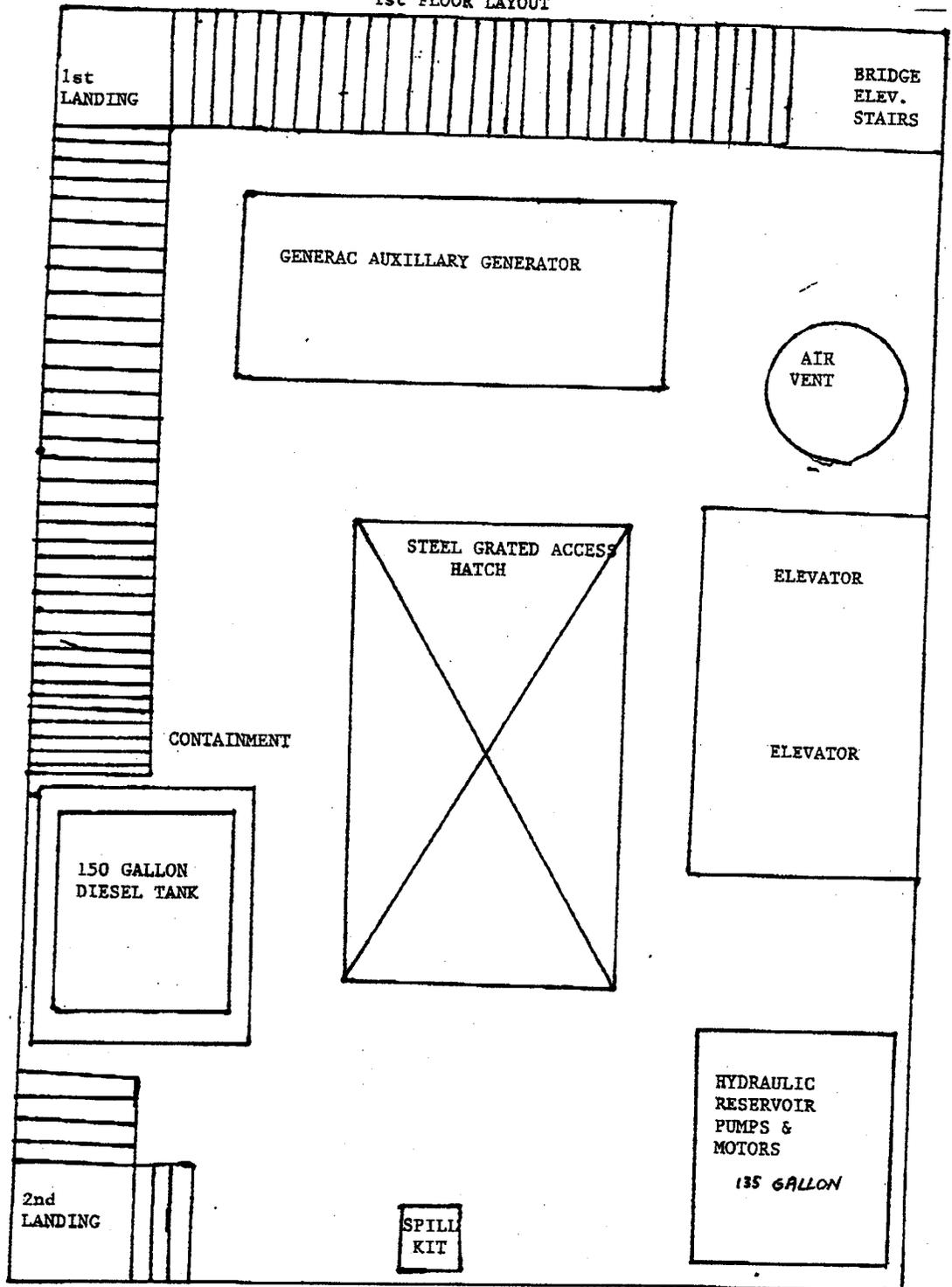
DIERKS LAKE  
PROJECT OFFICE  
&  
COMPOUND

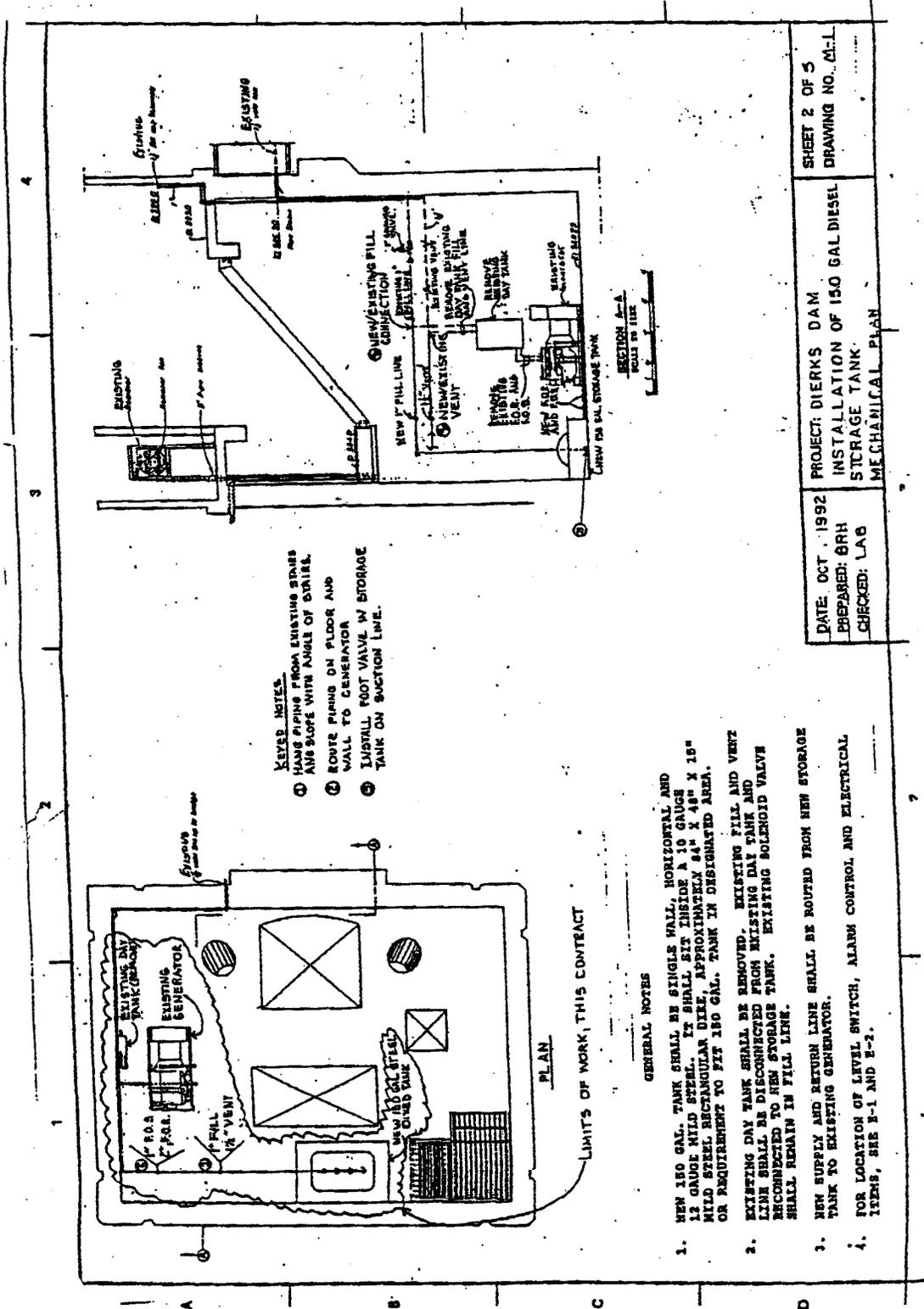




DIERKS LAKE  
CONTROL TOWER  
1st FLOOR LAYOUT

MAY 15, 1995





- KEYED NOTES.**
- 1 HANG PIPING FROM EXISTING STRIPS AND SLOPE WITH ANGLE OF STRIPS.
  - 2 ROUTE PIPING ON FLOOR AND WALL TO GENERATOR TANK ON SUNCTION LINE.
  - 3 INSTALL FOOT VALVE W/ STORAGE TANK ON SUNCTION LINE.

LIMITS OF WORK, THIS CONTRACT

**GENERAL NOTES**

1. NEW 150 GAL. TANK SHALL BE SINGLE WALL, HORIZONTAL, AND 12 GAUGE MILD STEEL. IT SHALL SIT INSIDE A 10 GAUGE MILD STEEL RECTANGULAR DIKE, APPROXIMATELY 84" X 48" X 18" OR EQUIVALENT TO FIT 150 GAL. TANK IN DESIGNATED AREA.
2. EXISTING DAY TANK SHALL BE REMOVED. EXISTING FILL AND VERT LINE SHALL BE DISCONNECTED FROM EXISTING DAY TANK AND RECONNECTED TO NEW STORAGE TANK. EXISTING ROLENOID VALVE SHALL REMAIN IN FILL LINE.
3. NEW SUPPLY AND RETURN LINE SHALL BE ROUTED FROM NEW STORAGE TANK TO EXISTING GENERATOR.
4. FOR LOCATION OF LEVEL SWITCH, ALARM CONTROL AND ELECTRICAL ITEMS, SEE E-1 AND E-2.

|                |   |                  |
|----------------|---|------------------|
| DATE: OCT 1992 | PROJECT: DIERKS DAM                         | SHEET 2 OF 5     |
| PREPARED: BRH  | INSTALLATION OF 150 GAL DIESEL STORAGE TANK | DRAWING NO. M-11 |
| CHECKED: LAB   | MECHANICAL PLAN                             |                  |

PROJECT INFORMATION, CLIMATE AND SOIL DATA  
DIERKS LAKE OFFICE

Project Information: Dierks Lake Office is located five miles northwest of the town of Dierks, Arkansas, near river mile 56.5 of the Saline River. Its primary purposes are to provide administrative and operational support to Dierks Dam, Spillway, recreational parks and facilities.

Climate: Dierks Lake Office is located in Howard County, Arkansas. Howard County is characterized by long, hot, humid summers, and mild winters. Precipitation generally is ample and is well distributed. On at least six days in the summer, temperatures of 100 degrees F. or higher can be expected. In the fall, days are warm and the nights are cool. Winter temperatures are mild. About half of the winter nights have temperatures below freezing and daytime temperatures range in the 50 to 60 degree F. range.

Rainfall: Rainfall averages for the general area are as follows:

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| May - 6.69 inches | Nov - 4.09 inches |
| Jun - 4.45 inches | Dec - 3.97 inches |

The total annual precipitation is approximately 54 inches. Spring is the wettest season, about one-third of the annual precipitation falls in the three month period March through May. Snowfall is negligible. The annual snowfall averages less than 3 inches and usually either melts within a few hours or as it falls.

Soils: Soil in the area is Pickens-Sherwood-Rock land association, hilly. This soil is found on side slopes and ridgetops in the Ouachita Mountains. Slopes range from 20 to 50 percent. The Pickens soil makes up about 35 percent of the association, the Sherwood soil 35 percent, Rock land 10 percent, and included soils 20 percent.

Pickens. The Pickens soil is mainly on the side slopes of ridges. It consists of shallow and somewhat excessively drained soils in the Ouachita Mountains. In a representative profile, the surface layer is dark grayish-brown shaly fine sand loam about 6 inches thick. The subsoil is yellowish-brown shaly fine sandy loam about 6 inches thick. The underlying material is shale bedrock, which is tilted and fractured. Permeability is moderate.

25 Sep 97

**Sherwood.** The Sherwood series consists of moderately deep, well drained, gently sloping to rolling soils in the Ouachita Mountains. In a representative profile, the surface layer is brown and yellowish-brown fine sandy loam about 9 inches thick. The subsoil is yellowish-red sandy clay loam about 28 inches thick. Beneath this is sandstone and shale bedrock that is tilted and fractured. The soil contains a range of few sandstone fragments to many throughout the profile. Permeability is moderate.

**Rock land.** Rock land consists of long, narrow outcrops of hard fine-grained sandstone and novaculite in narrow bands at the top of sharp ridges; outcrops of shale or slate and areas that have a one to four inch surface layer of brown, acid, loamy soil material overlying sandstone, shale, or slate bedrock. Most areas of this land type are less than 100 feet wide and are parallel to the axes of ridges in the Ouachita Mountains.

**Pirum.** Included with these soils are small areas of Pirum soils, narrow strips of well-drained, loamy soil material along valley drainageways, and narrow, gently sloping ridgetops. In a representative profile, the surface layer is dark grayish-brown fine sandy loam about 6 inches thick. The subsurface layer is yellowish-brown fine sandy loam about 5 inches thick. The subsoil extends to a depth of about 36 inches. It is yellowish-brown sandy clay loam. The underlying material is tilted and fractured sandstone bedrock. These soils contain a few sandstone fragments throughout.

**Groundwater:** Depth to seasonal groundwater is greater than 6 feet.

Source: United States Department of Agriculture Soil Conservation Service and Forest Service Soil Survey for Howard County, Arkansas, issued 1975.

PROJECT INFORMATION, CLIMATE AND SOIL DATA  
DIERKS DAM AND SPILLWAY

Project Information: Dierks Dam and Spillway are located five miles northwest of the town of Dierks, Arkansas, at river mile 56.5 of the Saline River. Its primary purposes are to provide flood control and water supply.

Climate: Dierks Lake Office is located in Sevier and Howard Counties, in west-central Arkansas. Sevier and Howard Counties are characterized by long, hot, humid summers, and mild winters. Precipitation generally is ample and is well distributed. On at least six days in the summer, temperatures of 100 degrees F. or higher can be expected. In the fall, days are warm and the nights are cool. Winter temperatures are mild. About half of the winter nights have temperatures below freezing and daytime temperatures range in the 50 to 60 degree F. range.

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The total annual precipitation is approximately 54 inches. Spring is the wettest season, about one-third of the annual precipitation falls in the three month period March through May. Snowfall is negligible. The annual snowfall averages less than 3 inches and usually either melts within a few hours or as it falls.

Soils: Soil in the area is Pickens-Sherwood-Rock land association, hilly. This soil is found on side slopes and ridgetops in the Ouachita Mountains. Slopes range from 20 to 50 percent. The Pickens soil makes up about 35 percent of the association, the Sherwood soil 35 percent, Rock land 10 percent, and included soils 20 percent.

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**Groundwater:** Depth to seasonal groundwater is greater than 6 feet.

**Source:** The Soil Survey for Sevier County, Arkansas, has not been completed by the Natural Resource Conservation Service. The information for Howard County, Arkansas was obtained from the Howard County Soil Survey issued by the United States Department of Agriculture Soil Conservation Service and Forest Service Soil Survey for Howard County, Arkansas, in 1975.

25 Sep 97

**SPILL HISTORY - DIERKS LAKE OFFICE, DAM AND SPILLWAY**

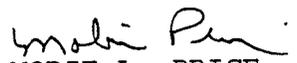
CESWL-CO-MW

08 November 1995

MEMORANDUM THRU Chief, Construction-Operations Division  
FOR Emergency Management Branch  
ATTN Jane Smith

SUBJECT: Spill History

1. Reference memorandum dated 16 October 1995, SAB, the following information is submitted from the Millwood-Tri Lakes projects.
2. This resident office reports one spill and the requested information is as follows:
  - a. De Queen Project Office
  - b. October 1992
  - c. Gasoline
  - d. Unknown
  - e. Underground tank failure
  - f. Tank was removed by a qualified team from the Memphis District Corps of Engineers and a above ground system put into place.
  - g. All contaminated soil was collected at the site, removed to a suitable location on project owned land, placed on plastic sheeting in windrows and allowed to air dry over a prescribed time period. Contaminated soil was turned at intervals to promote the decontamination process.
3. The Millwood, Dierks and Gillham Projects report a negative response.

  
MOBIE L. PRICE  
Resident Manager

PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX  
MILLWOOD-TRI LAKES

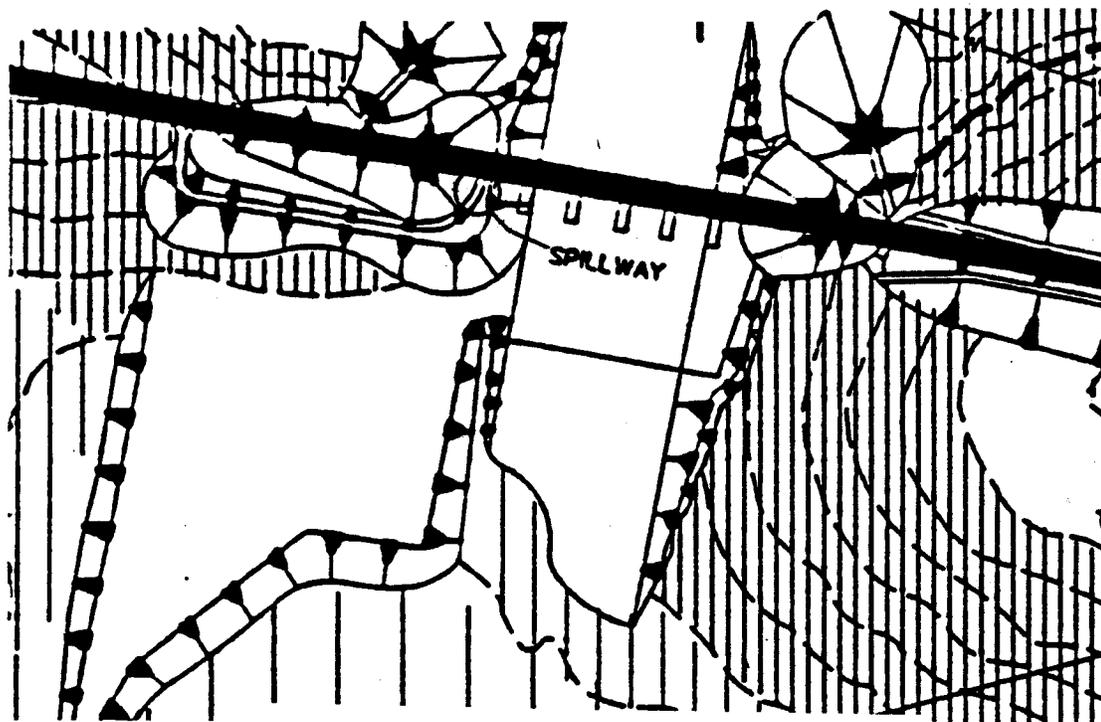
| Facility                 | Petroleum and Hazardous Substances | Approx. Quantity | Location          | On/Off Shore | Spill Prevention Measures                                      |
|--------------------------|------------------------------------|------------------|-------------------|--------------|--|
| Gillham Control Tower    | Hydraulic Oil                      | 175 Gal          | Gate Tower System | Off          | Sorbents   |
| Gillham Control Spillway | Diesel Aboveground Storage Tank    | 250 Gal          | Control Spillway  | On           | Double wall fiberglass, concrete covered, with leak detection. |
|                          | Diesel Day Use Tank for Generator  | 25 Gal           | Control Spillway  | On           | Containment  |
|                          |                                    |                  |                   |              |  |

**SITE DESCRIPTION AND MAPS  
GILLHAM LAKE CONTROL TOWER AND SPILLWAY**

1. Diesel Fuel Aboveground Storage Tank - Located outside spillway
  - a. Size and Type of Structure: 250 gallon, steel tank, concrete encased with leak detection system.
  - b. Substance Stored: Diesel fuel. Used for emergency generator and supply for project tractor operation.
  - c. Flow Direction Should Failure Occur: Flow direction is downstream below spillway.
  - d. Estimated Rate of Flow: Unknown, but small volume would not reach spillway flow system.
  - e. Distance to Nearest Waterway: 50 yards.
  - f. Depth to Groundwater: Depth to groundwater is approximately 40 feet under normal conditions.
2. Diesel Fuel Day Use Tank - Located inside spillway door
  - a. Size and Type of Structure: 25 gallon, steel tank, wall hung with pump to supply emergency generator demand.
  - b. Substance Stored: Diesel fuel. Used for emergency generator operation.
  - c. Flow Direction Should Failure Occur: Flow direction is downstream below spillway.
  - d. Estimated Rate of Flow: Unknown, but small volume would not reach spillway flow system.
  - e. Distance to Nearest Waterway: 50 yards.
  - f. Depth to Groundwater: Depth to groundwater is approximately 40 feet under normal conditions.
3. Control Tower Hydraulic System - Located inside Control Room Gate Tower System
  - a. Size and Type of Structure: 135 gallon hydraulic system, steel tank, floor mounted in control room at bridge level in Gate Tower structure.
  - b. Substance Stored: Hydraulic fluid. Used in hydraulic system that operates spillway.

25 Sep 97

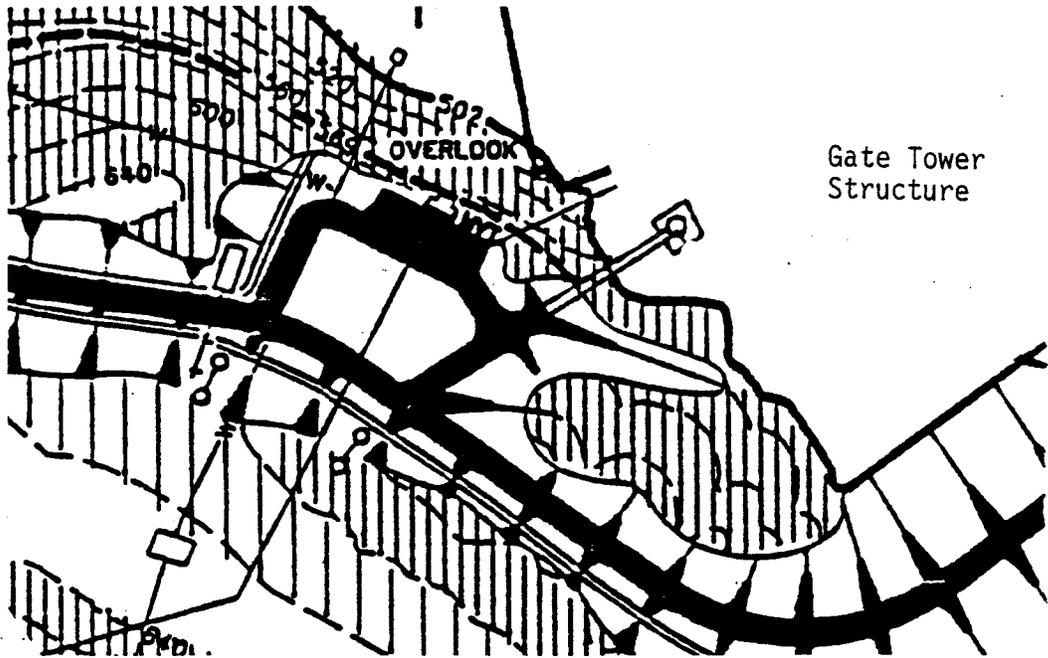
- c. **Flow Direction Should Failure Occur:** Flow direction is into the lake and/or into the structure itself and then into the sump pump pit and on into the Cossatot River.
- d. **Estimated Rate of Flow:** Estimated rate of flow is unknown.
- e. **Distance to Nearest Waterway:** Distance is negligible.
- f. **Depth to Groundwater:** Not applicable. System is located in underwater structure.



SPILL PREVENTION AND RESPONSE PLAN  
Site Map Reference Facilities  
Gillham Lake Spillway

DIESEL FUEL (Aboveground Tank) - Outside Spillway

DIESEL FUEL (Day Use Tank) - Inside Spillway Door



SPILL PREVENTION AND RESPONSE PLAN  
Site Map Reference Facilities  
Gillham Lake Gate Tower

CONTROL TOWER HYDRAULIC SYSTEM - Inside Control Room  
Gate Tower Structure

PROJECT INFORMATION, CLIMATE AND SOIL DATA  
GILLHAM DAM AND SPILLWAY

**Project Information:** Gillham Dam and Spillway are located at mile 49.0 of the Cossatot River, about six miles northeast of Gillham, Arkansas. Its primary purposes are to provide flood control and water supply.

**Climate:** Gillham Dam and Spillway are located in Howard County, in west-central Arkansas. Howard County is characterized by long, hot, humid summers, and mild winters. Precipitation generally is ample and is well distributed. On at least six days in the summer, temperatures of 100 degrees F. or higher can be expected. In the fall, days are warm and the nights are cool. Winter temperatures are mild. About half of the winter nights have temperatures below freezing and daytime temperatures range in the 50 to 60 degree F. range.

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**Soils:** Soil in the area is Pickens-Sherwood-Rock land association, hilly. This soil is found on side slopes and ridgetops in the Ouachita Mountains. Slopes range from 20 to 50 percent. The Pickens soil makes up about 35 percent of the association, the Sherwood soil 35 percent, Rock land 10 percent, and included soils 20 percent.

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25 Sep 97

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**Groundwater:** Depth to seasonal groundwater is greater than 6 feet.

Source: Soil Survey for Howard County, Arkansas, U.S. Department of Agriculture Soil Conservation Service and Forest Service, Issued 1975.

SPILL HISTORY - GILLHAM DAM AND SPILLWAY

CESWL-CO-MW

08 November 1995

MEMORANDUM THRU Chief, Construction-Operations Division  
FOR Emergency Management Branch  
ATTN Jane Smith

SUBJECT: Spill History

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2. This resident office reports one spill, and the requested information is as follows:
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  - b. October 1992
  - c. Gasoline
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  - e. Underground tank failure
  - f. Tank was removed by a qualified team from the Memphis District Corps of Engineers and a above ground system put into place.
  - g. All contaminated soil was collected at the site, removed to a suitable location on project owned land, placed on plastic sheeting in windrows and allowed to air dry over a prescribed time period. Contaminated soil was turned at intervals to promote the decontamination process.
3. The Millwood, Dierks and Gillham Projects report a negative response.

  
MOBIE L. PRICE  
Resident Manager

PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX  
MILLWOOD-TRI LAKES

| Facility                                      | Petroleum and Hazardous Substances   | Approx. Quantity | Location                   | On/Off Shore | Spill Prevention Measures                        |
|---|--------------------------------------|------------------|----------------------------|--------------|--|
| Millwood-Tri Lake Project Office, Ashdown, AR | Gasoline Underground Storage Tank    | 1000 Gal         | Maintenance Yard           | On           | Double wall fiberglass tank with leak detection. |
|   | Butane Aboveground Storage Tank      | 2000 Gal         | Maintenance Yard           | On           | Equipped with emergency dump valve.              |
|   | Oil                                  | 55 Gal           | Flammable Storage Building | On           | Sorbents   |
|   | Paint                                | 15 Gal           | Flammable Storage Building | On           | Sorbents   |
|   | Solvent                              | 5 Gal            | Flammable Storage Building | On           | Sorbents   |
| Millwood Dam/Spillway                         | Hydraulic Oil                        | 100 Gal          | Spillway System            | Off          | Sorbents   |
|   | Diesel Fuel Underground Storage Tank | 1000 Gal         | Dam Spillway               | On           | Double wall fiberglass tank with leak detection. |

SITE DESCRIPTION AND MAPS

CESWL-CO-MW

15 May 1995

Spill Prevention and Response Plan  
Site Map Reference Facilities  
5/15/95  
Millwood Lake

#1. DIESEL FUEL (Underground Tank) - Dam/Spillway

1. 1000 gal. Double wall fiberglass tank w/leak detector
2. Diesel fuel - For emergency generator purposes only.
3. No floor drains/sumps.
4. Largest container of hazardous substance - diesel fuel.
5. Flow direction is downstream below the dam.
6. Estimated rate of flow - Depends of CFS release.
7. Distance to nearest waterway - 150 yards.
8. 12-inch thick pea gravel cushion pad between the bottom of the tank and the top of the concrete hold down pad. Spill response kit for oils stored in the spillway structure.
9. Depth to groundwater - Unknown

#2. GASOLINE (Underground Tank) - Project Office

1. 1,000 gal Double wall fiberglass tank w/leak detector
2. 1,000 gal of gasoline for project vehicles and daily operations, etc.
3. No floor drains/sumps
4. Largest substance stored - Unleaded gasoline.
5. Flow direction - Depends on amount of rainfall, flat surface.
6. Estimated rate of flow - Unknown.
7. Distance to nearest waterway - 1 mile.
8. 12-inch thick pea gravel cushion pad between the bottom of the tank and the top of the concrete hold down pad. Absorbent and sandbags are stored in a nearby storage building.
9. Depth to groundwater - Unknown

#3. OIL STORAGE BUILDING - Project Office

1. 8'x 6' Corrugated Metal Storage Building
2. Various small quarts of oil for chain saws, weed-eaters, etc.
3. No floor drains/sumps
4. Largest Substance stored - mixed gasoline, etc.
5. Flow direction would be contained within the building.
6. None
7. Distance to nearest waterway - 1 mile.
8. Absorbent are placed beneath all chainsaws, and on the floors to absorb spillage contents.
9. Depth to groundwater - Unknown.

25 Sep 97

#4. PAINT BUILDING - Project Office

1. 12' X 12' Corrugated Metal Storage Building
2. 45 gal of paint - Latex Paint for project signs, etc.  
15 gal of Solvents - Paint thinners, etc.  
75 gal oil - Hydraulic Oil and Auto - Transmission fluid
3. No floor drains/sumps.
4. Largest containers - 55 gal Hydraulic Oil
5. Flow direction would be contained within the building.
6. Estimated rate of flow - None
7. Distance to nearest waterway - 1 mile.
8. Absorbent are stored in adjacent building for containment.
9. Depth to groundwater - Unknown.

#5. BUTANE - (Above Ground Tank) 2000 gal - Project Office

1. 2000 gal steel Above Ground Tank - Project Office
2. Butane gas
3. N/A
4. Largest Container - Butane gas
5. Flow direction would be vaporized butane gas into the air.
6. Estimated rate of flow - 50 PSI
7. Distance to nearest waterway - 1 mile
8. None
9. Depth to groundwater - Unknown.

Map Page 1 Of 2

Spill Prevention and Response Plan  
Site Map Of Facilities  
Millwood Lake  
5/15/95

L A K E

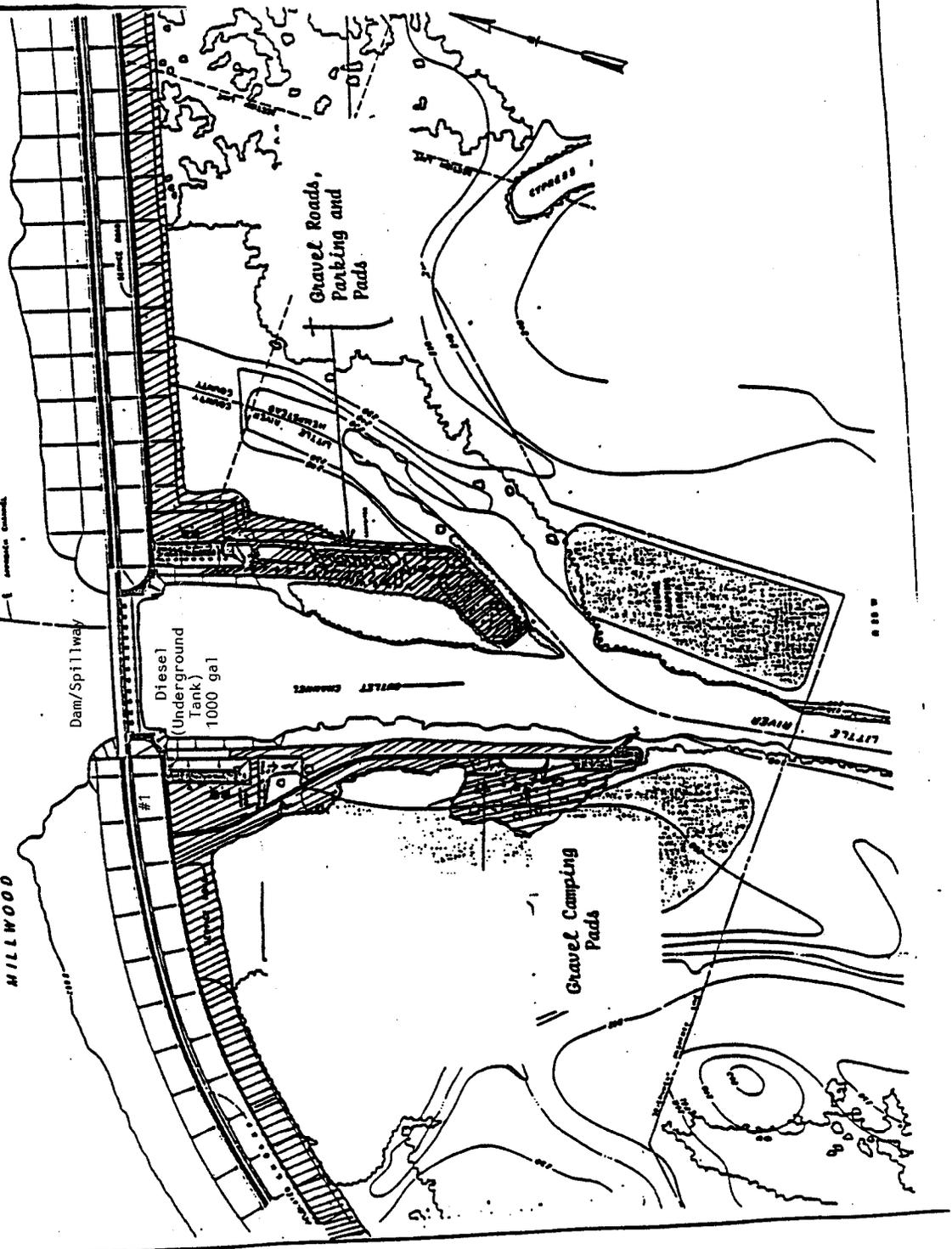
MILLWOOD

Dam/Spillway

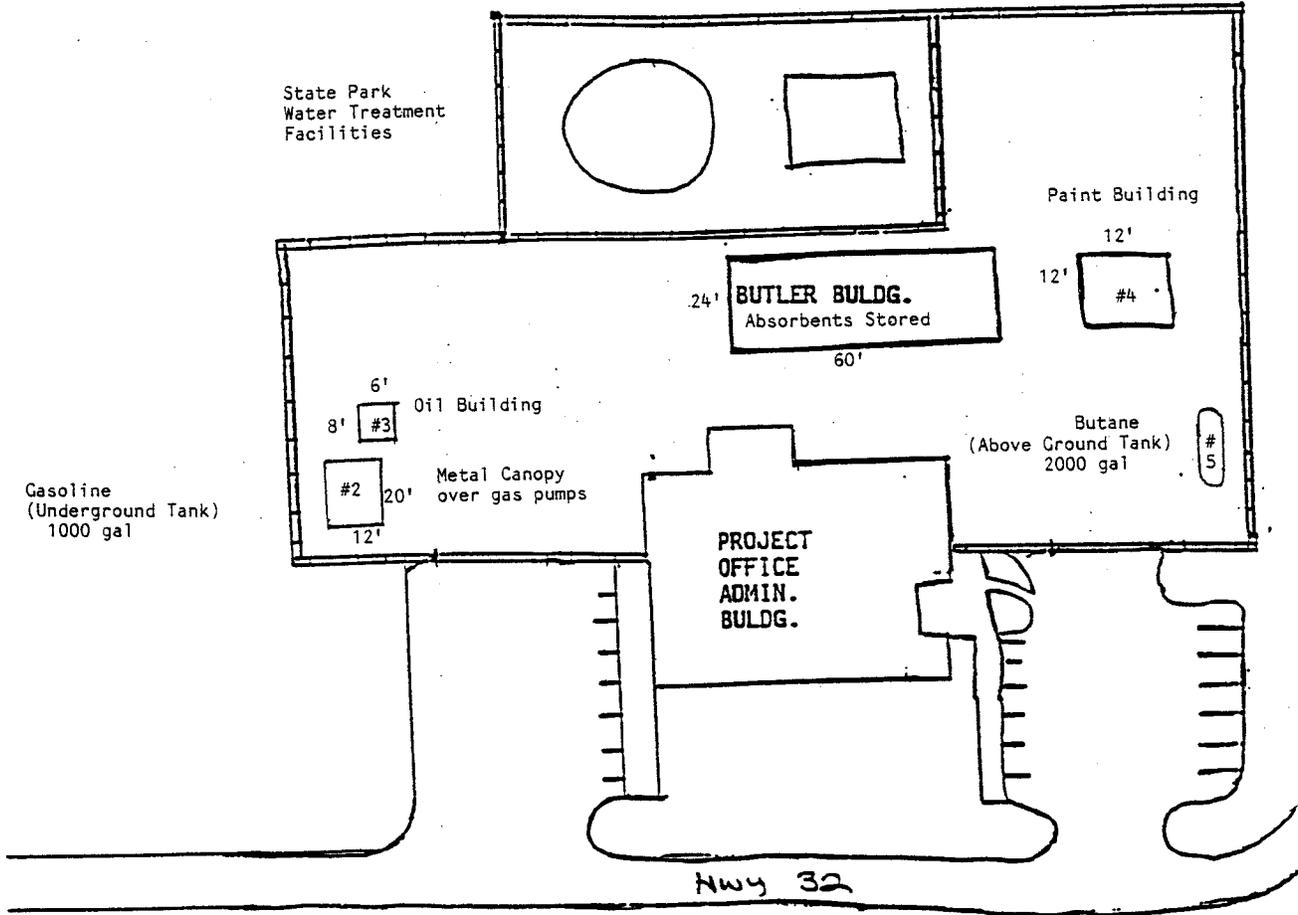
Diesel  
(Underground  
Tank)  
1000 gal

Gravel Roads,  
Parking and  
Pads

Gravel  
Camping  
Pads



Spill Prevention and Response Plan  
Site Map Of Facilities  
Millwood Lake  
5/15/95



PROJECT INFORMATION, CLIMATE AND SOIL DATA  
MILLWOOD-TRI LAKES PROJECT OFFICE

Project Information: Millwood-Tri Lakes Project Office is located off State Highway 32 near Ashdown, Arkansas. Its primary purposes are to provide administrative, operational and maintenance support to Millwood, Dequeen, Dierks and Gillham dams and spillways, recreational parks and facilities.

Climate: Millwood-Tri Lakes Project Office is located in Little River County, Arkansas. Temperatures are warm in summer and mild in winter. Winter has an average temperature of 47 degrees F, and the average daily minimum temperature is 37 degrees. In summer the average temperature is 81 degrees and the average daily maximum temperature is 91 degrees. Prevailing wind is from the south. Average windspeed is highest, 10-11 miles per hour, late in winter and early in spring.

Rainfall: Rainfall averages for the general area are as follows:

|                   |                   |
|-------------------|-------------------|
| Jan - 3.64 inches | Jul - 3.58 inches |
| Feb - 3.36 inches | Aug - 3.28 inches |
| Mar - 4.18 inches | Sep - 3.44 inches |
| Apr - 5.09 inches | Oct - 2.79 inches |
| May - 4.40 inches | Nov - 3.85 inches |
| Jun - 3.88 inches | Dec - 3.96 inches |

The total annual precipitation is approximately 48 inches. Of this, 24 inches (or 50%) usually falls in April through September. Average snowfall is 2 inches. Very few days have as much as 1 inch of snow on the ground; however, this number varies greatly from year to year.

Soils: Soils in this area are Kamie fine sandy loam, 1 to 8 percent slopes, and Guyton silt loam, frequently flooded. Descriptions of each are as follows:

Kamie fine sandy loam, 1 to 8 percent slopes. This deep, well drained, nearly level to gently sloping soil is on hilltops and hillsides in the Coastal Plains. Typically, the surface layer is brown fine sandy loam about 7 inches thick. The subsurface layer is yellowish brown fine sandy loam to a depth of about 11 inches. The upper part of the subsoil to a depth of about 57 inches is yellowish red sandy clay loam, and the lower part to a depth of 80 inches or more is yellowish red sandy clay loam that has pockets of light yellowish brown uncoated sand grains. Permeability is moderate. Runoff is medium.

Guyton silt loam, frequently flooded. This deep, poorly drained, level soil is on flood plains in the Coastal Plains.

25 Sep 97

Slopes are 0 to 1 percent. Typically, the surface layer is dark grayish brown, mottled silt loam about 4 inches thick. The subsurface layer is gray, mottled silt loam to a depth of about 19 inches. The upper part of the subsoil is gray, mottled silty clay loam to a depth of about 35 inches, and the lower part is gray, mottled silt loam to a depth of 72 inches or more. Permeability is slow. A perched water table is within 18 inches of the surface during winter and spring.

Groundwater: Kamie fine sandy loam soil - depth to seasonal high water table is greater than 6 feet. Guyton silt loam - depth to seasonal high water table is 0 - 1.5 feet.

Source: Soil Survey of Lafayette, Little River, and Miller Counties, Arkansas, U.S. Department of Agriculture Soil Conservation Service, Issued 1984.

PROJECT INFORMATION, CLIMATE AND SOIL DATA  
MILLWOOD DAM AND SPILLWAY

Project Information: Millwood Dam and Spillway are located on the Little River, 16 river miles upstream from its confluence with the Red River. It is about seven miles east of Ashdown, Arkansas. Its primary purpose is flood control.

Climate: Millwood Dam and Spillway are located in Little River County, Arkansas. Temperatures are warm in summer and mild in winter. Winter has an average temperature of 47 degrees F, and the average daily minimum temperature is 37 degrees. In summer the average temperature is 81 degrees and the average daily maximum temperature is 91 degrees. Prevailing wind is from the south. Average windspeed is highest, 10-11 miles per hour, late in winter and early in spring.

Rainfall: Rainfall averages for the general area are as follows:

|                   |                   |
|-------------------|-------------------|
| Jan - 3.64 inches | Jul - 3.58 inches |
| Feb - 3.36 inches | Aug - 3.28 inches |
| Mar - 4.18 inches | Sep - 3.44 inches |
| Apr - 5.09 inches | Oct - 2.79 inches |
| May - 4.40 inches | Nov - 3.85 inches |
| Jun - 3.88 inches | Dec - 3.96 inches |

The total annual precipitation is approximately 48 inches. Of this, 24 inches (or 50%) usually falls in April through September. Average snowfall is 2 inches. Very few days have as much as 1 inch of snow on the ground; however, this number varies greatly from year to year.

Soils: Soils in this area are Kamie fine sandy loam, 1 to 8 percent slopes, and Guyton silt loam, frequently flooded. Descriptions of each are as follows:

Kamie fine sandy loam, 1 to 8 percent slopes. This deep, well drained, nearly level to gently sloping soil is on hilltops and hillsides in the Coastal Plains. Typically, the surface layer is brown fine sandy loam about 7 inches thick. The subsurface layer is yellowish brown fine sandy loam to a depth of about 11 inches. The upper part of the subsoil to a depth of about 57 inches is yellowish red sandy clay loam, and the lower part to a depth of 80 inches or more is yellowish red sandy clay loam that has pockets of light yellowish brown uncoated sand grains. Permeability is moderate. Runoff is medium.

Guyton silt loam, frequently flooded. This deep, poorly drained, level soil is on flood plains in the Coastal Plains. Slopes are 0 to 1 percent. Typically, the surface layer is dark grayish brown, mottled silt loam about 4 inches thick. The

25 Sep 97

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Groundwater: Kamie fine sandy loam soil - depth to seasonal high water table is greater than 6 feet. Guyton silt loam - depth to seasonal high water table is 0 - 1.5 feet.

Source: Soil Survey of Lafayette, Little River, and Miller Counties, Arkansas, U.S. Department of Agriculture Soil Conservation Service, Issued 1984.

**SPILL HISTORY**  
**MILLWOOD-TRI LAKES PROJECT OFFICE, DAM AND SPILLWAY**

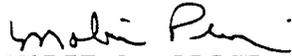
CESWL-CO-MW

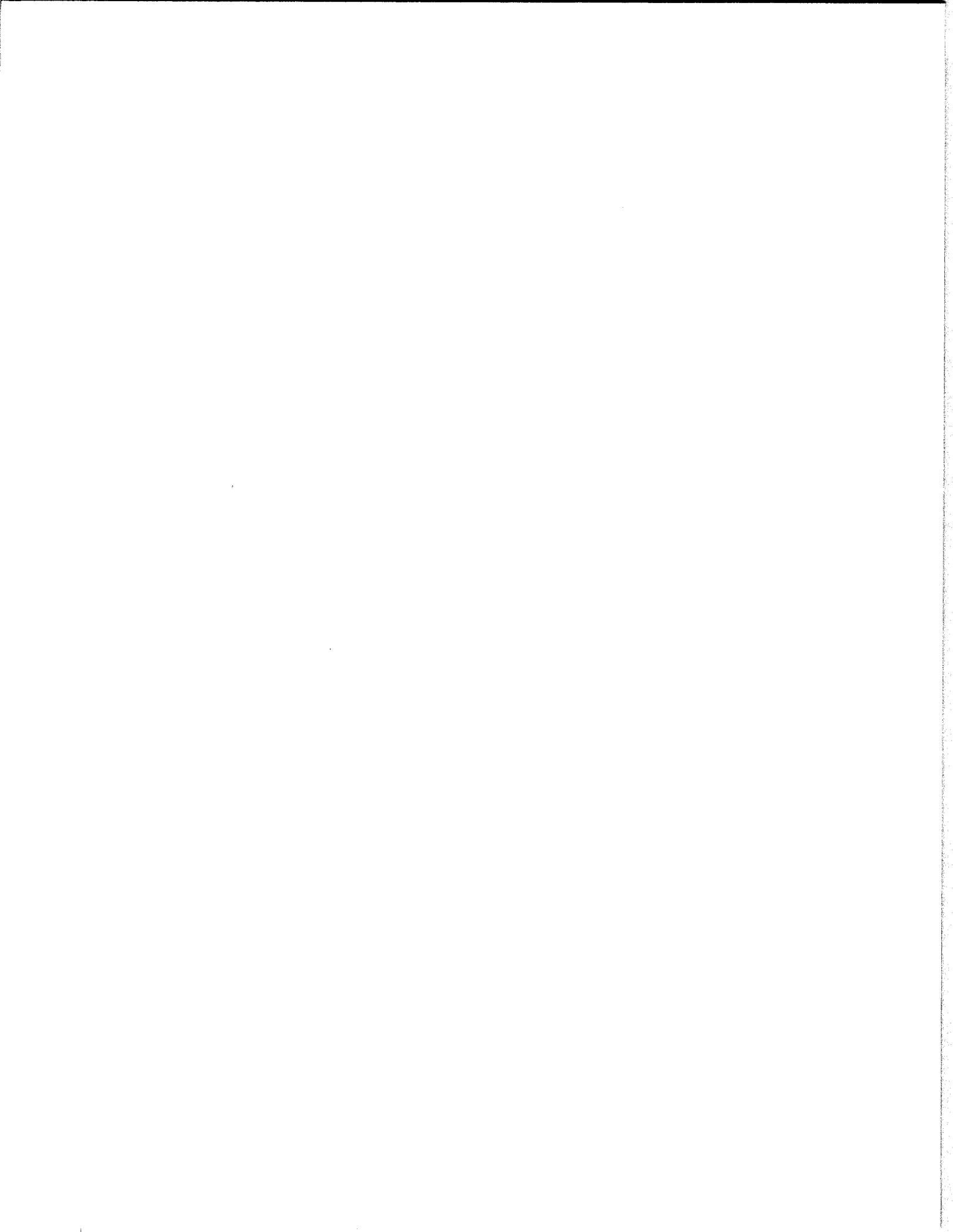
08 November 1995

MEMORANDUM THRU Chief, Construction-Operations Division  
FOR Emergency Management Branch  
ATTN Jane Smith

SUBJECT: Spill History

1. Reference memorandum dated 16 October 1995, SAB, the following information is submitted from the Millwood-Tri Lakes projects.
2. This resident office reports one spill and the requested information is as follows:
  - a. De Queen Project Office
  - b. October 1992
  - c. Gasoline
  - d. Unknown
  - e. Underground tank failure
  - f. Tank was removed by a qualified team from the Memphis District Corps of Engineers and a above ground system put into place.
  - g. All contaminated soil was collected at the site, removed to a suitable location on project owned land, placed on plastic sheeting in windrows and allowed to air dry over a prescribed time period. Contaminated soil was turned at intervals to promote the decontamination process.
3. The Millwood, Dierks and Gillham Projects report a negative response.

  
MOBIE L. PRICE  
Resident Manager



APPENDIX F

PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX  
MOUNTAIN HOME

| Facility                                    | Petroleum and Hazardous Substances  | Approx. Quantity | Location                                     | On/Off Shore | Spill Prevention Measures                                    |
|---|---|------------------|--|--------------|--|
| Bull Shoals Powerhouse<br>Mountain Home, AR | Diesel Aboveground Storage Tank   | 200 Gal          | Dam, Tower, Generator Room, Elevation 684.42 | Off          | Drains to sump where diesel can be recovered.                |
|   | Insulation Oil for Transformers - 2 each Aboveground Storage Tanks at 8000 gals | 16000 Gal        | Oil Storage Room, Elevation 458.0            | Off          | Drains to sump where oil can be recovered.                   |
|   | Lube Oil for Turbines - 2 Aboveground Storage Tanks at 1500 gals                | 3000 Gal         | Oil Purification Room, Elevation 458.0       | Off          | Drains to sump where oil can be recovered.                   |
|   | Lube Oil - 8 each Bearing Lube Reservoirs at 1300 gals                          | 10400 Gal        | Main Units, Thrust Pots, Elevation 475.0     | Off          | System inspected. Drains to sump where oil can be recovered. |
|   | Insulating Oil Aboveground Storage Tank   | 1000 Gal         | Oil Storage Room, Elevation 458.0            | Off          | Drains to sump where oil can be recovered.                   |

PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX  
MOUNTAIN HOME

| Facility   | Petroleum and Hazardous Substances                     | Approx. Quantity | Location                                       | On/Off Shore | Spill Prevention Measures |
|--|--|------------------|--|--------------|---------------------------|
| Bull Shoals Powerhouse<br>Mountain Home, AR<br>(Continued) | Insulating Oil<br>- 11<br>Transformers at<br>3000 gals | 33000 Gal        | Transformer<br>Deck, Elevation<br>492.0        | Off          | Inspected                 |
|  | Lube Oil - 32<br>Hydraulic<br>Cylinders at<br>200 gals | 6400 Gal         | Dam, Operating<br>Gallery,<br>Elevation 490.88 | Off          | Inspected                 |
|  | Oil  | 200 Gal          | Erection Bay,<br>Elevation 492.0               | Off          | Inspected                 |
|  | Paint  | 50 Gal           | Paint Room,<br>Elevation 458.0                 | On           | Sorbents                  |
|  | Solvent  | 20 Gal           | Paint Room,<br>Elevation 458.0                 | On           | Sorbents                  |
|  |  |                  |  |              |                           |

**SITE DESCRIPTION AND MAP**

Data re: Potential Spill Sites and Site Map - BullShoals Dam and Powerhouse

- A. Diesel fuel above ground tank 200 gal
  1. Location; fuel storage room Elev 684.42 Dam tower.
  2. Floor drain; yes, size 2", can be sealed.
  3. Drain flows to the dam sump, can be recovered from sump.
  4. Rate of flow approx. 3 gpm.
  5. The sump capacity is sufficient to hold the spill without being pump to the river.
  
- B. Insulating oil for transformers 2-8000 gal above ground tanks
  1. Location oil storage room Elev 458.0 in the powerhouse.
  2. Floor drain
  3. Floor drains to unwatering sump, can be recovered from sump.
  4. Rate of flow approx 5 gpm.
  5. Containment; seal floor drain, sump capacity enough to capture the spill.
  
- C. Lube oil for turbines 2-1500 gal above ground tanks
  1. Location; oil purification room elev 458.0
  2. Floor drain
  3. Floor drains to the unwatering sump, can be recovered from sump.
  4. Rate of flow approx 5 gpm
  5. Containment; seal floor drain, sump capacity enough to capture the spill.
  
- D. Lub oil bearing reservoirs 8-1300 gal
  1. Location; main unit thrust bearing oil reservoirs elev 475.0
  2. Reservoir drain lines
  3. Drain lines to oil storage room, turbine pit to unwatering sump, can be recovered from sump.
  4. Rate of flow approx 10 gpm
  5. Containment; sump capacity enough to capture spill.
  
- E. Insulating oil above ground tanks 1000 gal
  1. Location; oil storage room elev 458.0
  2. Floor drains
  3. Floor drains to unwatering sump, can be recovered from sump.
  4. Rate of flow approx 5 gpm
  5. Containment; sump capacity enough to capture spill.
  
- F. Insulating oil 11 transformers @ 3000 gal
  1. Location; Transformer deck elev 492.0
  2. Deck drains
  3. Deck drains to unwatering sump, can be recovered from sump.
  4. Rate of flow approx 15 gpm
  5. Containment; sump capacity enough to capture spill

- G. Lube oil 32 hydraulic cylinders @ 200 gal
  1. Location; Dam, operating gallery elev 490.88
  2. Gallery drains
  3. Gallery drains to dam sump
  4. Rate of flow approx 5 gpm
  5. Containment; sump capacity enough to capture spill
  
- H. Lube oil in barrels ( new)
  1. Location; Storage area elev 458.0
  2. Floor drains
  3. Floor drains to unwatering sump
  4. Rate of flow approx 1 gph
  5. Containment; sump capacity enough to capture spill
  
- I. Solvent & Paint
  1. Location; paint and oil storage room elev 458.0
  2. Floor drains with CO2 protection
  3. Floor drains to unwatering sump
  4. Rate of flow 1 gph
  5. Containment; sump capacity enough to capture spill

CESWL-CO-MH

KUETER/lk/425-2700/28 Jun 95

MEMORANDUM FOR Chief, Con Ops Div

SUBJECT: Description of Potential Spill Sites and Site Maps

1. Please refer to memo CESWL-CO-E dated 3 May 1995, subject as above.
2. Norfolk and Bull Shoals Recreation Resource Management Branches each have a mobile service truck that has a gasoline and a diesel transfer tank. Each tank has an approximate capacity of 130 gallons. These vehicles are based at the Mountain Home Project Office and are taken to various job sites where construction activities are occurring. Absorbent pads will be purchased to be carried in the vehicles as a countermeasure in the event of a spill.
3. Enclosed are ~~color~~ coded prints showing storage areas in both powerhouses where lube oil, insulating oil, paint, and solvents are kept. The areas where the paint and solvent are stored have CO<sub>2</sub> fire protection. The floor drains in the powerhouses all run into the powerhouse unwatering sumps. At Bull Shoals, the transformer deck drains also drain into the powerhouse sumps. The powerhouse sumps are equipped with oil detectors and oil skimmers to remove the oil from the sumps. Total capacity for one sump at Bull Shoals is approximately 15,000 gallons. At Norfolk, the transformers have an oil containment system that was installed in 1994.

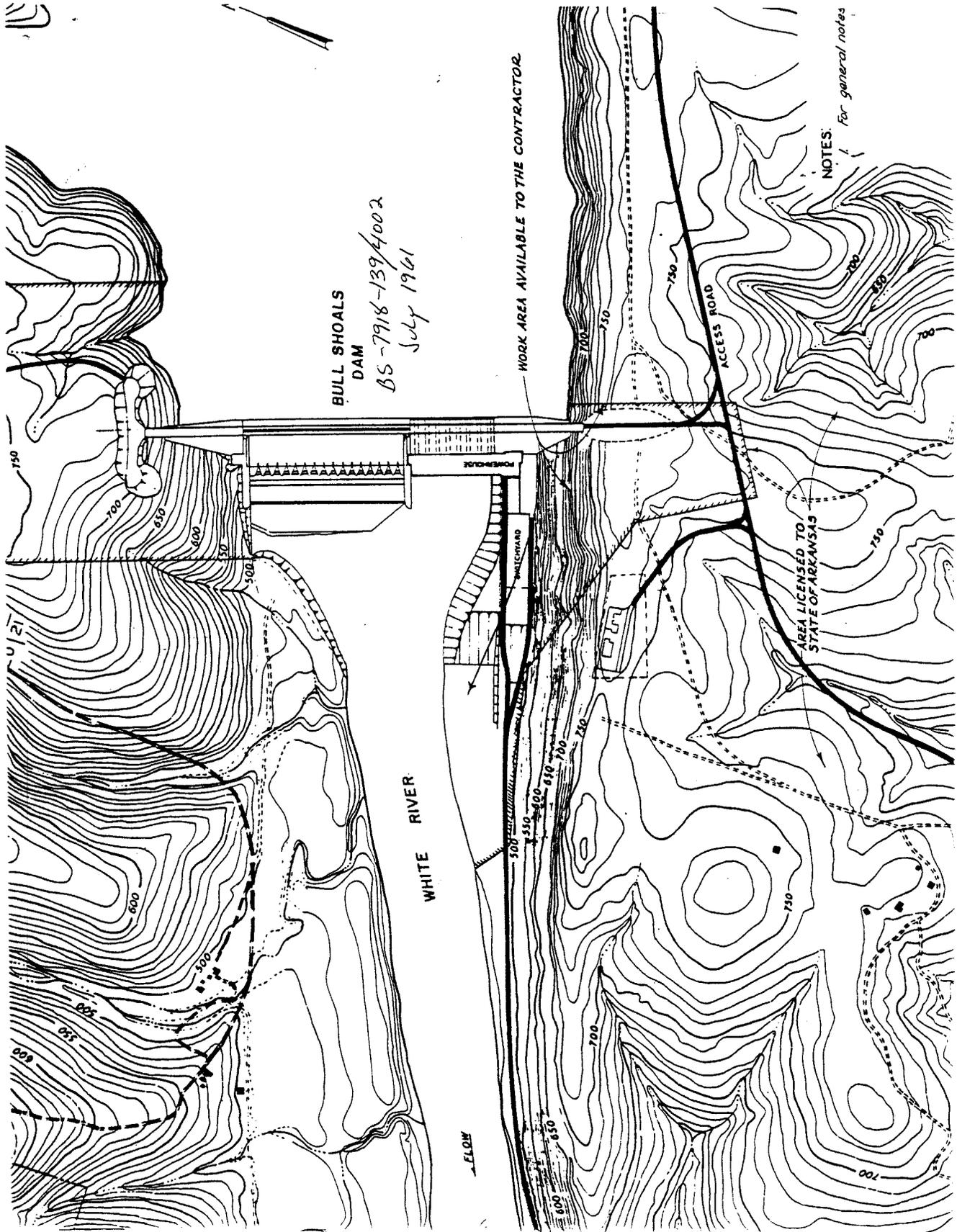
Encls  
as

  
JACK RINTOUL  
Project Manager

RECEIVED

JUN 3 0 1995

CON-OPS DIVISION



PROJECT INFORMATION, CLIMATE AND SOIL DATA  
BULL SHOALS POWERHOUSE AND DAM

Project Information: Bull Shoals Powerhouse and Dam are on the White River seven miles north of Cotter, Arkansas. There are 6,036 square miles of drainage area above the dam. The primary purposes of these facilities are hydroelectric power generation and flood control. Hydroelectric power generated at this project is sold to municipalities, rural electric co-operatives, and public and private utilities in Arkansas, Missouri, Oklahoma, Louisiana and East Texas.

Climate: Bull Shoals Powerhouse and Dam are located in Marion County, Arkansas. Temperatures are hot in summer and moderately cool winter. In winter the average temperature is 37 degrees F, and the average daily minimum temperature is 25 degrees. In summer the average temperature is 77 degrees and the average daily maximum temperature is 89 degrees. Prevailing wind is from the south. Average windspeed is highest, 12 miles per hour, in spring.

Rainfall: Rainfall averages for the general area are as follows:

|                   |                   |
|-------------------|-------------------|
| Jan - 2.30 inches | Jul - 3.20 inches |
| Feb - 2.74 inches | Aug - 2.93 inches |
| Mar - 3.80 inches | Sep - 4.17 inches |
| Apr - 4.47 inches | Oct - 3.12 inches |
| May - 5.07 inches | Nov - 3.73 inches |
| Jun - 4.26 inches | Dec - 3.31 inches |

Rainfall is fairly heavy and well distributed throughout the year. Snow falls nearly every winter, but snow cover lasts but a few days. The total annual precipitation is 43 inches. Of this, 24 inches (or 55 %) usually falls in April through September. Average snowfall is 9 inches. On an average of 4 days, at least 1 inch of snow is on the ground.

Soils: Soil types in this area are a combination of: Doniphan very cherty silt loam, 3 to 8 percent slopes; and Moko-Rock outcrop complex, 15 to 40 percent.

Doniphan very cherty silt loam, 3 to 8 percent slopes. This is a deep, well drained, gently sloping soil on uplands. Slopes are smooth and convex. Typically, the surface layer is dark brown very cherty silt loam about 1 inch thick. The subsurface layer is light yellowish brown very cherty silt loam to a depth of about 9 inches. The subsoil is strong brown very cherty silt loam to a depth of about 17 inches; yellowish red, mottled cherty silty clay to a depth of about 29 inches; dark red, mottled clay to a depth of about 56 inches; and mottled, dark red, strong brown, and light gray clay to a depth of 72 inches or more.

SWLR 200-1-1

25 Sep 97

Permeability is moderate.

Moko-rock outcrop complex, 15 to 40 percent. This complex consists of Moko very stony silt loam and Rock outcrop. The areas of this complex are on steep hillsides. They are very intermingled. In a typical area of this soil, very dark brown and very dark grayish brown very stony silt loam about 6 inches thick overlies hard dolomite bedrock. Permeability is moderate. Rock outcrop is typically hard, level-bedded dolomite or limestone.

Groundwater: Depth to seasonal high water table is greater than 6 feet.

Source: Soil Survey of Baxter and Marion Counties, Arkansas, U.S. Department of Agriculture Soil Conservation Service, Issued 1983.

**SPILL HISTORY - BULL SHOALS POWERHOUSE**

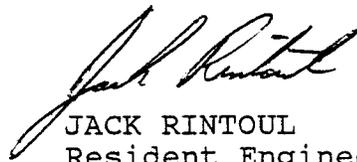
CESWL-CO-MH

KUETER/425-2700/2 Nov 95

MEMORANDUM FOR Chief, Con-Ops Div

SUBJECT: Spill History

1. Please refer to memo CESWL-CO-E dated 16 October 1995, subject as above.
2. A negative spill history is furnished for Mountain Home Project Office and its activities.

  
JACK RINTOUL  
Resident Engineer

RECEIVED  
NOV 1 1995  
CON-OPS DIVISION 1

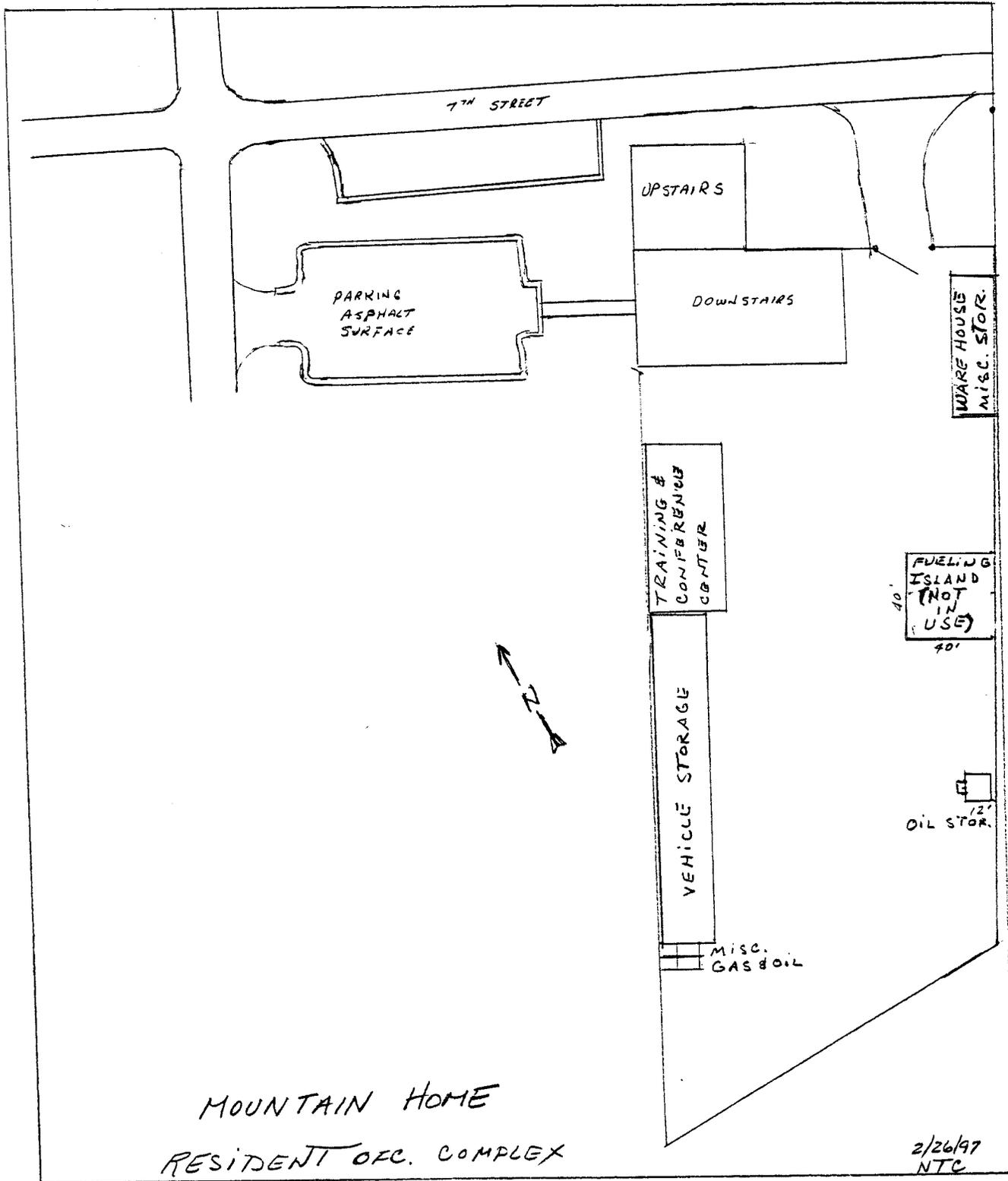
PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX  
MOUNTAIN HOME

| Facility  | Petroleum and Hazardous Substances | Approx. Quantity | Location                            | On/Off Shore | Spill Prevention Measures |
|---|------------------------------------|------------------|-------------------------------------|--------------|---------------------------|
| Mountain Home Project Office, Mountain Home, AR | Power Steering Fluid               | 1 Gal            | Vehicle Station Cabinet             | On           | Sorbents                  |
|   | Motor Oil                          | 2 Gal            | Vehicle Station Cabinet             | On           | Sorbents                  |
|   | Transmission Fluid                 | 1 Gal            | Vehicle Station Cabinet             | On           | Sorbents                  |
|   | Paint Thinner                      | 4 Gal            | Paint Storage Building              | On           | Sorbents                  |
|   | Motor Oil                          | 2 Gal            | Paint Storage Building              | On           | Sorbents                  |
|   | Tree Marking Paste                 | 12 Gal           | Paint Storage Building              | On           | Sorbents                  |
|   | Block Filler                       | 12 Gal           | Paint Storage Building              | On           | Sorbents                  |
|   | Tree Coder Paint                   | 8 Gal            | Paint Storage Building              | On           | Sorbents                  |
|   | Outboard Motor Oil                 | 50 Gal           | Oil Storage Building                | On           | Sorbents                  |
|   | Mixed Gas                          | 125 Gal          | Storage Building by Weather Station | On           | Sorbents                  |

PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX  
MOUNTAIN HOME

| Facility  | Petroleum and Hazardous Substances | Approx. Quantity | Location                            | On/Off Shore | Spill Prevention Measures |
|---|------------------------------------|------------------|-------------------------------------|--------------|---------------------------|
| Mountain Home Project Office, Mountain Home, AR | Brake Fluid                        | 1 Gal            | Storage Building by Weather Station | On           | Sorbents                  |
|   | Motor Oil                          | 1 Gal            | Storage Building by Weather Station | On           | Sorbents                  |
|   | Transmission Oil                   | 5 Gal            | Storage Building by Weather Station | On           | Sorbents                  |

SITE DESCRIPTION AND MAP



PROJECT INFORMATION, CLIMATE AND SOIL DATA  
MOUNTAIN HOME PROJECT OFFICE

Project Information: Mountain Home Project Office is located off U.S. Highway 62 in Mountain Home, Arkansas. Its primary purposes are to provide administrative and operational/maintenance support to Norfork and Bull Shoals Powerhouses and dams, and recreational parks and facilities.

Climate: Mountain Home Project Office is located in Baxter County, Arkansas. Temperatures are hot in summer and moderately cool in winter. Winter has an average temperature of 37 degrees F, and the average daily minimum temperature is 25 degrees. In summer the average temperature is 77 degrees and the average daily maximum temperature is 89 degrees. Prevailing wind is from the south. Average windspeed is highest, 12 miles per hour, in spring.

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Rainfall is fairly heavy and well distributed throughout the year. Snow falls nearly every winter, but snow cover lasts but a few days. The total annual precipitation is 43 inches. Of this, 24 inches (or 55 %) usually falls in April through September. Average snowfall is 9 inches. On an average of 4 days, at least 1 inch of snow is on the ground.

Soils: Soils in this area are Doniphan very cherty silt loam, 3 to 8 percent slopes and Doniphan very cherty silt loam, 8 to 20 percent slopes.

Doniphan very cherty silt loam, 3 to 8 percent slopes, is a deep, well drained, gently sloping soil on uplands. Slopes are smooth and convex. Typically, the surface layer is dark brown very cherty silt loam about 1 inch thick. The subsurface layer is light yellowish brown very cherty silt loam to a depth of about 9 inches. The subsoil is strong brown very cherty silt loam to a depth of about 17 inches; yellowish red, mottled cherty silty clay to a depth of about 29 inches; dark red, mottled clay to a depth of about 56 inches; and mottled, dark red, strong brown, and light gray clay to a depth of 72 inches or more. Permeability is moderate.

Doniphan very cherty silt loam, 8 to 20 percent slopes is a deep, well drained, moderately sloping to moderately steep soil on side slopes. Slopes are smooth and convex. The surface layer is dark brown very cherty silt loam about 1 inch thick. The subsurface layer is light yellowish brown very cherty silt loam to a depth of about 9 inches. The subsoil is strong brown very cherty silt loam to a depth of about 17 inches; yellowish red, mottled cherty clay to a depth of 29 inches; dark red, mottled clay to a depth of about 56 inches; and mottled, dark red, strong brown, and light gray clay to a depth of 72 inches or more. Permeability is moderate.

Groundwater: Depth to seasonal high water table is greater than 6 feet.

Source: Soil Survey of Baxter and Marion Counties, Arkansas, U.S. Department of Agriculture Soil Conservation Service, Issued 1983.

25 Sep 97

## SPILL HISTORY - MOUNTAIN HOME PROJECT OFFICE

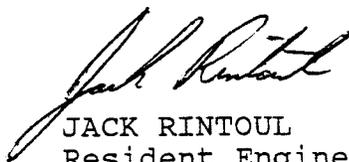
CESWL-CO-MH

KUETER/425-2700/2 Nov 95

MEMORANDUM FOR Chief, Con-Ops Div

SUBJECT: Spill History

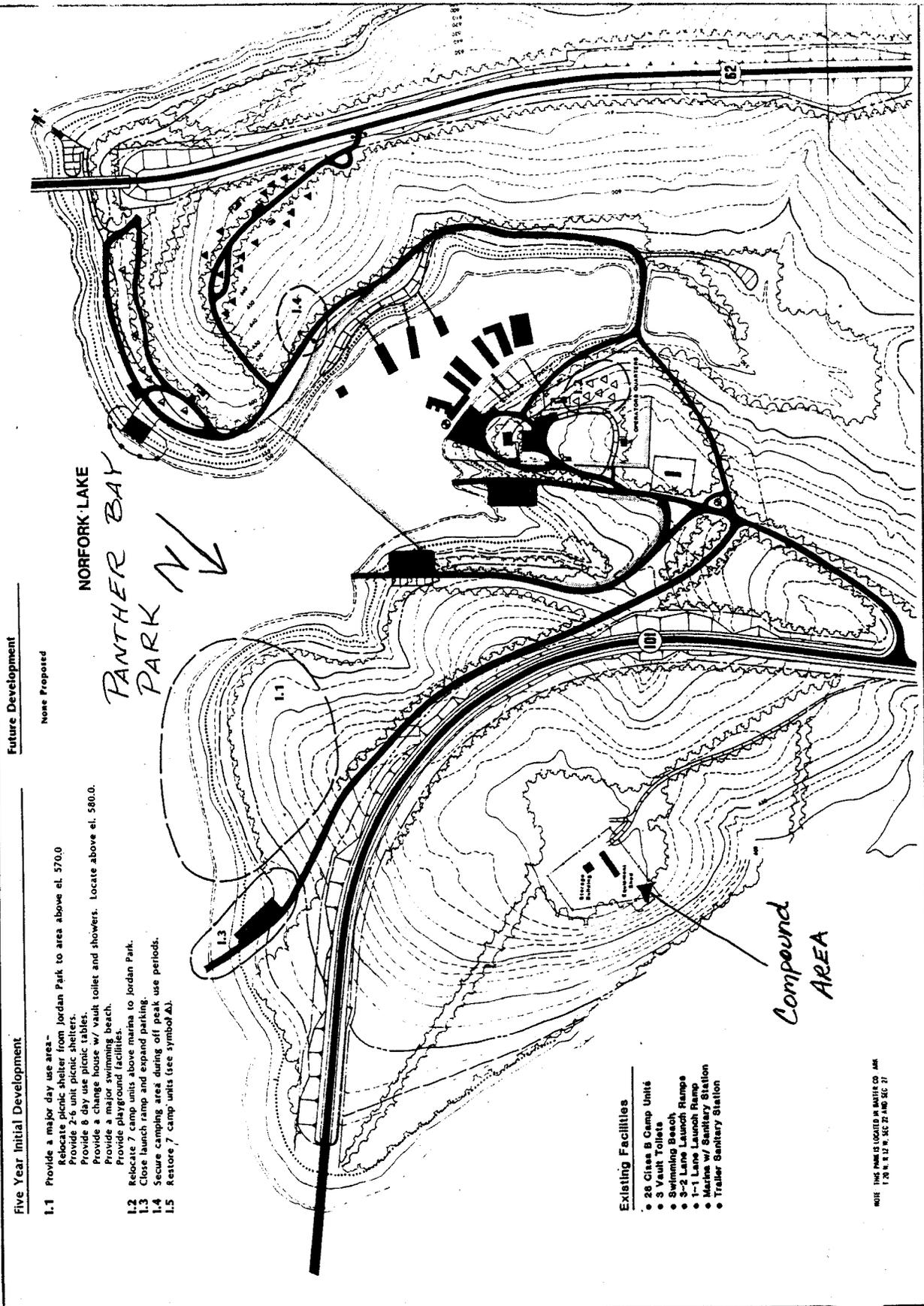
1. Please refer to memo CESWL-CO-E dated 16 October 1995, subject as above.
2. A negative spill history is furnished for Mountain Home Project Office and its activities.

JACK RINTOUL  
Resident EngineerRECEIVED  
NOV 14 1995  
CON-OPS DIVISION 1

PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX  
MOUNTAIN HOME

| Facility                                 | Petroleum and Hazardous Substances | Approx. Quantity | Location            | On/Off Shore | Spill Prevention Measures |
|--|------------------------------------|------------------|---------------------|--------------|---------------------------|
| Norfolk Lake Compound, Mountain Home, AR | Outboard Motor Oil                 | 37 Gal           | Ranger Building     | On           | Sorbents                  |
|  | Mixed Gas                          | 7 Gal            | Ranger Building     | On           | Sorbents                  |
|  | Paint Thinner                      | 1 Gal            | Ranger Building     | On           | Sorbents                  |
|  | Paint                              | 2 Gal            | Ranger Building     | On           | Sorbents                  |
|  | Paint                              | 10 Gal           | Compound Paint Room | On           | Sorbents                  |
|  |                                    |                  |                     |              |                           |

SITE DESCRIPTION AND MAPS



Future Development

None Proposed

Five Year Initial Development

- 1.1 Provide a major day use area—  
Relocate picnic shelter from Jordan Park to area above el. 570.0  
Provide 2-6 unit picnic shelters.  
Provide 8 day use picnic tables.  
Provide a change house w/ vault toilet and showers. Locate above el. 580.0.  
Provide a major swimming beach.  
Provide playground facilities.
- 1.2 Relocate 7 camp units above marina to Jordan Park.
- 1.3 Close launch ramp and expand parking.
- 1.4 Secure camping area during off peak use periods.
- 1.5 Restore 7 camp units (see symbol A).

Existing Facilities

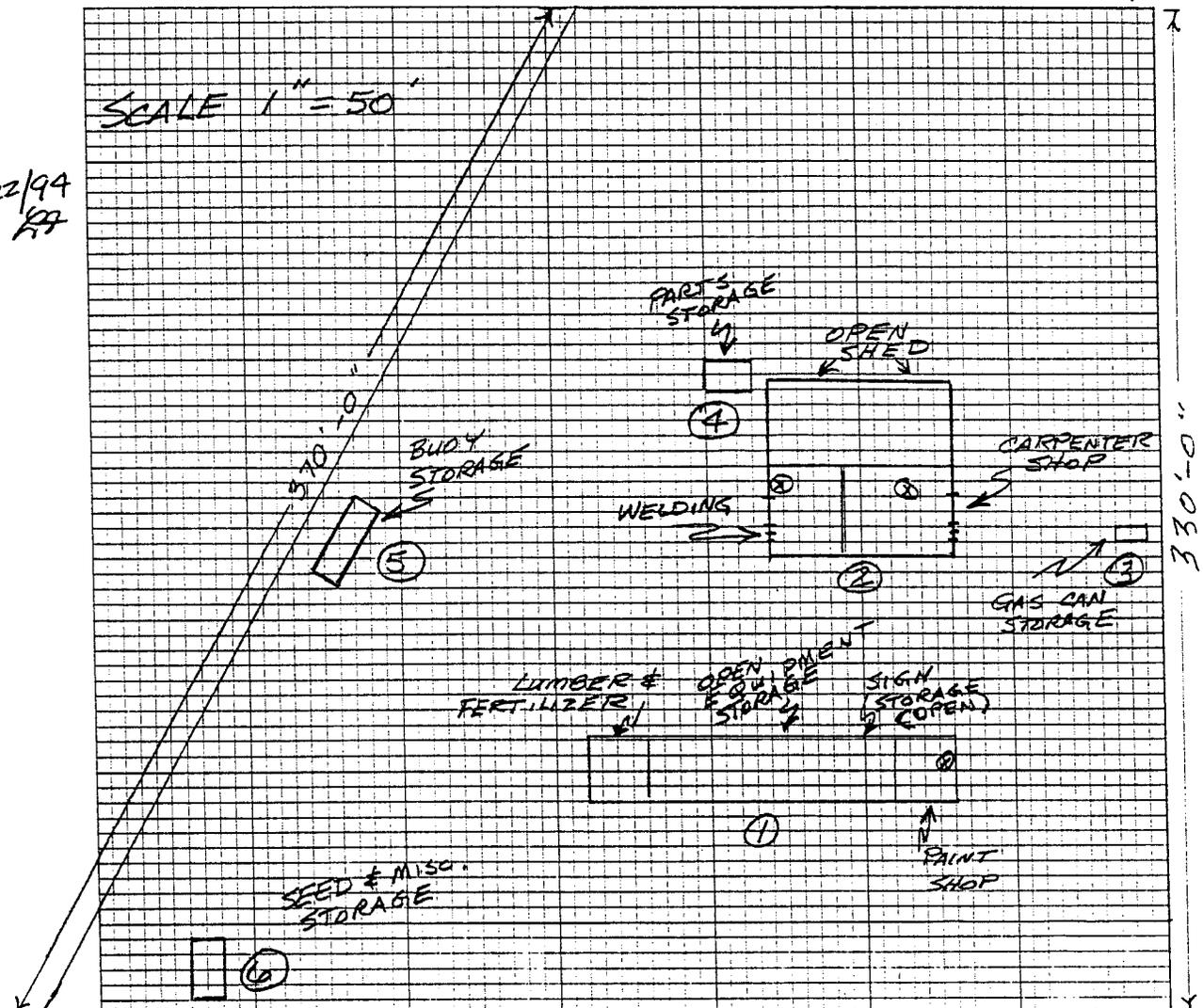
- 26 Class B Camp Units
- 3 Vault Toilets
- Swimming Beach
- 3-2 Lane Launch Ramps
- 1-1 Lane Launch Ramp
- Marine w/ Sanitary Station
- Trailer Sanitary Station

NOTE: THIS MAP IS LOCATED IN SHEET CO. 444  
1 20 N. 12 W. SEC. 21, T40 S. 21

NORFOLK COMPOUND  
190'-0"

SCALE 1" = 50'

12/22/94  
KJ



FENCE 10 X 8 AS TO 1 INCH 100 LB WIRE MESH

6' CHAIN LINK FENCE  
WITH 3 STRANDS OF  
BARE WIRE

**BUILDINGS**

- ① 120' X 22' SHEET METAL POLE BUILDING
- ② 60' X 30' SHEET METAL POLE BLDG. WITH 60' X 28' OPEN LEANTO ATTACHED
- ③ 12' X 6' METAL CONEX
- ④ 16' X 8' WOOD FRAME - WOOD SIDING
- ⑤ 28' X 8' SEMI TRAILER
- ⑥ 20' X 10' COLEBUILT BLDG.

10' HIGH 10' 11'