

**PROJECT INFORMATION, CLIMATE AND SOIL DATA
DARDANELLE POWERHOUSE**

Project Information: Dardanelle Powerhouse is located at navigation mile 205.5 of the McClellan-Kerr Arkansas River Navigation System. Its primary purpose is to generate hydroelectric power.

Climate: Dardanelle Powerhouse is located in Yell County, Arkansas. The climate in Yell County is characterized by warm summers, mild winters, and fairly abundant rainfall. In winter the average temperature is 42 degrees F, and the average daily minimum temperature is 31 degrees. In summer the average temperature is 80 degrees, and the average daily maximum temperature is 91 degrees.

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

Jan - 2.88 inches	Jul - 3.33 inches
Feb - 3.15 inches	Aug - 3.34 inches
Mar - 5.24 inches	Sep - 3.62 inches
Apr - 4.36 inches	Oct - 3.31 inches
May - 5.12 inches	Nov - 4.49 inches
Jun - 4.24 inches	Dec - 3.81 inches

Total annual rainfall is about 48 inches. Of this, 24 inches, or 50 percent, usually falls in April through September. The average seasonal snowfall is 5 inches. On an average of 3 days, at least 1 inch of snow in on the ground. The number of such days varies greatly from year to year.

Soils: Mountainburg stony fine sandy loam, 12 to 40 percent slopes. This soil is shallow and well drained. It is on moderately steep and steep side slopes and tops of hills, mountains, and ridges. Typically, the surface layer is dark brown stony fine sandy loam about 5 inches thick. The subsurface layer is yellowish brown stony fine sandy loam to a depth of about 9 inches. The subsoil is strong brown very gravelly loam to a depth of about 17 inches. Ther underlying bedrock is level-bedded, acid sandstone. Permeability is moderately rapid.

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

Source: Soil Survey of Yell County, Arkansas, U.S. Department of Agriculture Soil Conservation Service, Issued 1988.

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SPILL HISTORY - DARDANELLE POWERHOUSE

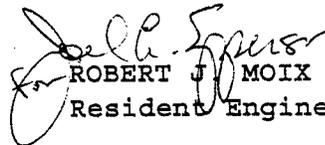
CESWL-CO-RV

21 August 1997
Mr. James/jjs/329-2986

MEMORANDUM FOR Ch, Con-Ops Division

SUBJECT: Spill History, Dardanelle Powerhouse

1. Reference Memorandum CESWL-CO-E dated 16 October 1995, Subject: Spill History.
2. No significant spills have been reported at the Dardanelle Powerhouse. Please contact Mr. Ken Storm at 968-5008 if you have questions or need additional information.


ROBERT J MOIX
Resident Engineer

Copy furnished:
Toad Suck Ferry Field Ofc, Mr. James
Dardanelle Powerhouse, Mr. Storm

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**PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX
RUSSELLVILLE**

Facility	Petroleum and Hazardous Substances	Approx. Quantity	Location	On/Off Shore	Spill Prevention Measures
Murray Lock and Dam (Lock and Dam No. 7) Little Rock, AR	Diesel Aboveground Storage Tank	330 Gal	Lock No. 7 Compound	On	Secondary Containment
	Oil (30W and 10W30)	12 Gal	Paint Building	On	Sorbents
	Hydraulic Oil	55 Gal	Paint Building	On	Sorbents
	Lubrication Engineer Grease	30 Gal	Paint Building	On	Sorbents
	EPO & EP1 Grease	50 Gal	Paint Building	On	Sorbents
	Keystone Grease	30 Gal	Paint Building	On	Sorbents
	Dixson 271 Grease	5 Gal	Paint Building	On	Sorbents
	Used Oil	30 Gal	Paint Building	On	Sorbents
	Antifreeze	4 Gal	Paint Building	On	Sorbents
	Paint	60 Gal	Paint Building	On	Sorbents
	Solvent	50 Gal	Paint Building	On	Sorbents
	Hydraulic Fluid	3,600 Gal	Lock System	Off	System Inspected Daily
	Diesel	55 Gal	Paint Building	Off	Sorbents

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SITE DESCRIPTION AND MAP

Murray Lock & Dam
Info for Spill Plan
Building Inventory and Description

A. Lock Control House

1. Area Description: The Lock Control House is a 2-story brick veneer building located adjacent to the landside lock wall, with approximate size of 27' X 56".
2. Substances Stored:
 - a. Diesel Fuel; 20 gal (max in generator day-tank) - in equipment room upstairs
3. Floor Drains: Floor drains are located throughout the building and will either be plugged with a plumber's ball or encircled with absorbent "pigs" to prevent accidental discharge of hazardous substances.
4. Largest Container: 20 gallon tank
5. Flow Direction in Event of Failure: SSW across parking lot to ditch, , then ENE (upstream) along the ditch to Arkansas River.
6. Estimate Flow Rate: Estimate 2 FPS for diesel fuel.
7. Distance to Nearest Waterway: Approximately 1200' to Arkansas River.
8. Containment Method: Absorbent materials located at the facility.
9. Depth to groundwater: Unknown. Estimate 10'.

B. Oil Storage Building.

1. Area Description: The Oil Storage Building is a 1-story, brick veneer building located SE of the Lock Control House, with an approximate size of 12' X 18'.
2. Substances Stored:
 - a. Oil, 30W and 10W30; 12 gal
 - b. Hydraulic Oil; 110 gal (max) - varies with season 0 in winter to 110 gal in winter.
 - c. Grease, Lubrication Engineers; 30 gal
 - d. Grease, Keystone; 30 gal
 - e. Grease, EP0 and EP1; 50 gal
 - f. Grease, Dixson 271; 5 gal
 - g. Used Oil; 30 gal
 - h. Antifreeze; 4 gal
 - i. Paint; 60 gal
 - j. Solvent; 50 gal
 - k. Diesel; 55 gal
3. Floor Drains: No floor drains in the building.
4. Largest Container: 55 gallon drum.
5. Flow Direction in Event of Failure: SSW across parking lot to ditch, then ENE (upstream) along ditch to the Arkansas River.

Murray Lock & Dam
Info for Spill Plan (Cont'd)

6. Estimate Flow Rate: Estimate 0.5 for paint, 1 FPS for oil, 2 FPS for antifreeze and solvent, and 0.5 FPS for paint. Grease will not flow.
7. Distance to Nearest Waterway: Approximately 1100' to Arkansas River.
8. Containment Method: Absorbent materials located at the facility.
9. Depth to groundwater: Unknown. Estimate 10'.

C. Lock Hydraulic System

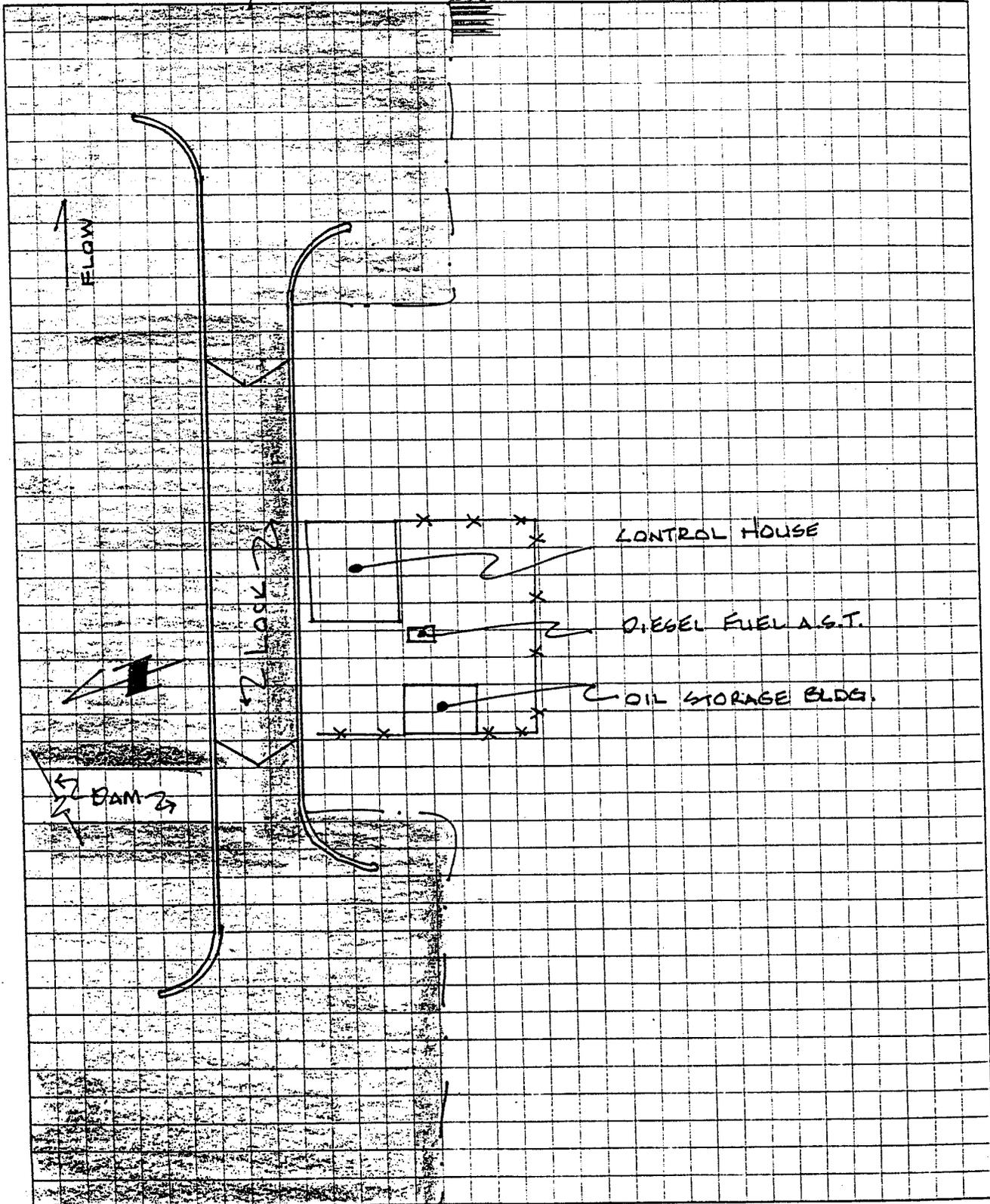
1. Area Description: The Lock Hydraulic system consists of piping and pumps in the Lock Control House and Lock Galleries.
2. Substances Stored: Hydraulic fluid; about 3600 gal total.
3. Floor Drains: Floor drains are located throughout the building and will either be plugged with a plumber's ball or encircled with absorbent "pigs" to prevent accidental discharge of hazardous substances.
4. Largest Container: Hydraulic pump reservoir in control house has a capacity of approximately 250 gallons.
5. Flow Direction in Event of Failure: Failure of pump or reservoir - SSW across parking lot to ditch, then ENE (upstream) along the ditch to Arkansas River. Failure of piping in gallery - along gallery drain to sump pump pit which would be pumped into river.
6. Estimate Flow Rate: Estimate 1 FPS for Hydraulic fluid..
7. Distance to Nearest Waterway: Failure in the pump or reservoir - 300' to Arkansas River. Failure in gallery - 10' to 250'.
8. Containment Method: Absorbent materials located at the facility.
9. Depth to groundwater: Unknown. Estimate 10'.

D. Diesel Fuel Above-ground Storage Tank

1. Area Description: The Diesel Fuel storage tank is located West and about 10' from the Lock Control House.
2. Substances Stored: Diesel Fuel; 300 gal (max)
3. Floor Drains: N/A
4. Largest Container: 300 gallon
5. Flow Direction in Event of Failure: SSW across parking lot to ditch, then ENE (upstream) along ditch to the Arkansas River.
6. Estimate Flow Rate: Estimate 2 FPS for diesel fuel
7. Distance to Nearest Waterway: Approximately 1000' to Arkansas River.
8. Containment Method: Secondary Containment
9. Depth to groundwater: Unknown. Estimate 10'.

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SUBJECT SPILL PLAN INFO FOR MURRAY LOCK & DAM
COMPUTATION SITE PLAN (N.T.S.) FILE NO. _____
COMPUTED BY BALGANY DATE 9 DEC 96 CHECKED BY _____ DATE _____



PROJECT INFORMATION, CLIMATE AND SOIL DATA
MURRAY LOCK AND DAM (NO. 7)

Project Information: Murray Lock and Dam is located at navigation mile 125.4 of the McClellan-Kerr Arkansas River Navigation System. Its primary purpose is to provide a means of navigation for commercial and recreational vessels.

Climate: Murray Lock and Dam is located in Pulaski County, Arkansas. Pulaski County has hot summers with high humidity. Winters are generally mild. Although polar and arctic-type outbreaks are common, they generally are short. Precipitation is fairly heavy throughout the year. The average winter temperature is 41 degrees F, so outdoor work can be done during most of the winter. Snowfall averages 5.7 inches per year, almost half of which falls in January. In summer the average temperature is 82 degrees. July and August are the hottest months. A high temperature of 100 degrees is frequently exceeded.

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

Jan - 3.23 inches	Jul - 3.34 inches
Feb - 3.04 inches	Aug - 3.11 inches
Mar - 5.02 inches	Sep - 3.68 inches
Apr - 4.66 inches	Oct - 2.92 inches
May - 5.24 inches	Nov - 4.00 inches
Jun - 3.80 inches	Dec - 3.78 inches

The total annual precipitation is approximately 49 inches. Spring is the wettest season, and May is normally the wettest month. During the three months of March, April and May, slightly more than 15 inches of rainfall (nearly 31 percent of the annual total) commonly occurs. August, September and October are the driest months, but about 3 inches in each month can be expected in a normal year.

Soils: Soil in the area is a combination of Keo silt loam and Carnasaw-Urban land complex, 8 to 12 percent slopes. Descriptions of each are as follows:

Keo silt loam. The Keo series consists of well-drained, level soils on young natural levees. These soils formed in loamy alluvium deposited by the Arkansas River. Slopes are less than 1 percent. In a representative profile, the surface layer is dark-brown silt loam about 10 inches thick. The subsoil is 28 inches thick. The upper 10 inches is dark-brown loam, the middle 7 inches is dark-brown silt loam, and the lower 11 inches is dark reddish-brown silt loam. Below is dark reddish-brown silt loam and reddish-brown very fine sandy loam. Permeability is moderate.

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Carnasaw-Urban land complex, 8 to 12 percent slopes. The Carnasaw series consists of well-drained, gently sloping to steep soils on the top, sides and foot slopes of mountains, on benches, and on low ridges in the valleys. The soils formed in a thin layer of loamy material and in the underlying clayey material that weathered from shale. In a representative profile, the surface layer is very dark grayish-brown gravelly silt loam about 2 inches thick. The subsurface layer is yellowish-brown gravelly silt loam about 4 inches thick. The subsoil extends to a depth of 49 inches. The upper 6 inches is yellowish-red silty clay; the next 11 inches is yellowish-red, mottled clay; the next 15 inches is light olive-brown, mottled silty clay; and the lower 11 inches is mottled silty clay loam. The underlying material is shale. Permeability is slow.

Groundwater: Keo silt loam - depth to seasonal high water table is greater than 6 feet. Carnasaw-Urban land complex, 8 to 12 percent slopes - depth to seasonal high water table is greater than 5 feet.

Source: Soil Survey of Pulaski County, Arkansas, U.S. Department of Agriculture Soil Conservation Service, Issued 1975.

SPILL HISTORY - MURRAY LOCK AND DAM

CESWL-CO-RV

21 August 1997
Mr. James/jjs/329-2986

MEMORANDUM FOR Ch, Con-Ops Division

SUBJECT: Spill History, Murray Lock & Dam

1. Reference Memorandum CESWL-CO-E dated 16 October 1995, Subject: Spill History.
2. No significant spills have been reported at the Murray Lock and Dam. Please contact Mr. Darrell Sitton at 354-8402 if you have questions or need additional information.


ROBERT J. MOIX
Resident Engineer

Copy furnished:
Toad Suck Ferry Field Ofc, Mr. James
Murray L&D, Mr. Sitton

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PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX
RUSSELLVILLE

Facility	Petroleum and Hazardous Substances	Approx. Quantity	Location	On/Off Shore	Spill Prevention Measures
Ormond Lock and Dam (Lock and Dam No. 9) Morrilton, AR	Diesel Aboveground Storage Tank	330 Gal	Compound	On	Secondary Containment
	Oil 30W	40 Gal	Non-Flammable Building	On	Sorbents
	Hydraulic Oil	40 Gal	Non-Flammable Building	On	Sorbents
	Lubrication Engineer Oil	20 Gal	Non-Flammable Building	On	Sorbents
	EGO Grease	10 Gal	Non-Flammable Building	On	Sorbents
	EP0 & EP1 Grease	35 Gal	Non-Flammable Building	On	Sorbents
	Keystone Grease	3 Gal	Non-Flammable Building	On	Sorbents
	Paint	50 Gal	Paint Building	On	Sorbents
	Gasoline	4 Gal	Non-Flammable Building	On	Sorbents
	Used Oil	40 Gal	Shed Between Non-Flammable Building & Paint Building	On	Sorbents
	Hydraulic Fluid	3,600 Gal	Lock System	Off	System Inspected Daily
	Solvent	25 Gal	Non-Flammable Building	On	Sorbents

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SITE DESCRIPTION AND MAP

**Ormond Lock & Dam
Info for Spill Plan
Building Inventory and Description**

A. Lock Control House

1. Area Description: The Lock Control House is a 2-story brick veneer building located adjacent to the landside lock wall, with approximate size of 27' X 56".
2. Substances Stored:
 - a. Diesel Fuel; 20 gal (max in generator day-tank) - in equipment room upstairs
3. Floor Drains: Floor drains are located throughout the building and will either be plugged with a plumber's ball or encircled with absorbent "pigs" to prevent accidental discharge of hazardous substances.
4. Largest Container: 20 gallon tank
5. Flow Direction in Event of Failure: SSE across parking lot to ditch, , then ENE (downstream) along the ditch to Arkansas River.
6. Estimate Flow Rate: Estimate 2 FPS for diesel fuel.
7. Distance to Nearest Waterway: Approximately 600' to Arkansas River.
8. Containment Method: Absorbent materials located at the facility.
9. Depth to groundwater: Unknown. Estimate 10'.

B. Flammable Storage Building.

1. Area Description: The Flammable Storage Building is a 1-story, brick veneer building located SSW of the Lock Control House, with an approximate size of 12' X 18'.
2. Substances Stored:
 - a. Oil, 30W; 40 gal
 - b. Hydraulic Oil; 40 gal
 - c. Oil, Lubrication Engineers; 20 gal
 - d. Grease, EGO; 10 gal
 - e. Grease, EPO and EP1; 35 gal
 - f. Grease, Keystone; 3 gal
 - g. Gasoline; 4 gal
 - h. Used Oil; 40 gal - under shed between Flammable and Paint Buildings
 - i. Solvent; 25 gal
3. Floor Drains: No floor drains in the building.
4. Largest Container: 55 gallon drum.
5. Flow Direction in Event of Failure: SSE across parking lot to ditch, then ENE (downstream) along ditch to the Arkansas River.

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Ormond Lock & Dam
Info for Spill Plan (Cont'd)

6. Estimate Flow Rate: Estimate 0.5 for paint, 1 FPS for oil and 2 FPS for solvent. Grease will not flow.
7. Distance to Nearest Waterway: Approximately 650' to Arkansas River.
8. Containment Method: Absorbent materials located at the facility.
9. Depth to groundwater: Unknown. Estimate 10'.

C. Lock Hydraulic System

1. Area Description: The Lock Hydraulic system consists of piping and pumps in the Lock Control House and Lock Galleries.
2. Substances Stored: Hydraulic fluid; about 3600 gal total.
3. Floor Drains: Floor drains are located throughout the building and will either be plugged with a plumber's ball or encircled with absorbent "pigs" to prevent accidental discharge of hazardous substances.
4. Largest Container: Hydraulic pump reservoir in control house has a capacity of approximately 250 gallons.
5. Flow Direction in Event of Failure: Failure of pump or reservoir - SSE across parking lot to ditch, then ENE (downstream) along the ditch to Arkansas River. Failure of piping in gallery - along gallery drain to sump pump pit which would be pumped into river.
6. Estimate Flow Rate: Estimate 1 FPS for Hydraulic fluid..
7. Distance to Nearest Waterway: Failure in the pump or reservoir - 600' to Arkansas River. Failure in gallery - 10' to 250'.
8. Containment Method: Absorbent materials located at the facility.
9. Depth to groundwater: Unknown. Estimate 10'.

D. Diesel Fuel Above-ground Storage Tank

1. Area Description: The Diesel Fuel storage tank is located SW and about 10' from the Lock Control House.
2. Substances Stored: Diesel Fuel; 300 gal (max)
3. Floor Drains: N/A
4. Largest Container: 300 gallon
5. Flow Direction in Event of Failure: SSE across parking lot to ditch, then ENE (downstream) along ditch to the Arkansas River.
6. Estimate Flow Rate: Estimate 2 FPS for diesel fuel
7. Distance to Nearest Waterway: Approximately 600' to Arkansas River.
8. Containment Method: Secondary Containment
9. Depth to groundwater: Unknown. Estimate 10'.

Ormond Lock & Dam
Info for Spill Plan (Cont'd)

E. Dam (Spillway Gate Control Gearboxes)

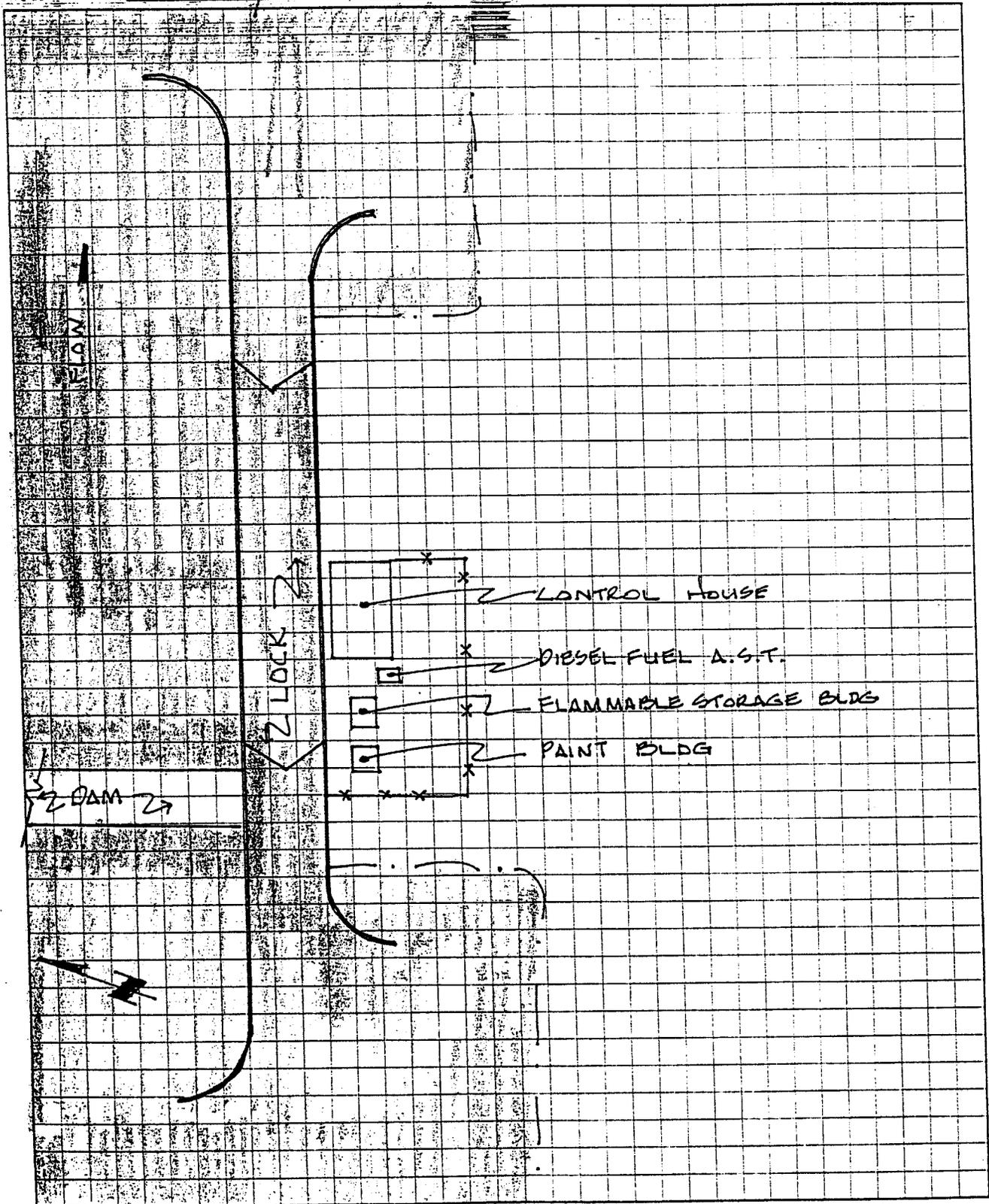
1. Area Description: The Dam is located NNW of the Lock. There are 14 tainter gates on the dam, and each gate has two gearboxes.
2. Substances Stored: Oil, Lubrication Engineers; 616 gal (28 boxes @ 22 gal each)
3. Floor Drains: N/A
4. Largest Container: 22 gallons
5. Flow Direction in Event of Failure: Across the machinery deck; down to the pier; and down the pier face into the Arkansas River.
6. Estimate Flow Rate: Estimate 1 FPS for oil.
7. Distance to Nearest Waterway: Approximately 30' to Arkansas River.
8. Containment Method: Absorbent material located onsite.
9. Depth to groundwater: N/A

25 Sep 97

SUBJECT SPILL PLAN INFO FOR ORMOND LOCK : DAM

COMPUTATION SITE PLAN (N.T.S.) FILE NO. _____

COMPUTED BY BALGAVY DATE 9DEC96 CHECKED BY _____ DATE _____



PROJECT INFORMATION, CLIMATE AND SOIL DATA
ARTHUR V. ORMOND LOCK AND DAM (#9)

Project Information: Arthur V. Ormond Lock and Dam is located at navigation mile 176.9 of the McClellan-Kerr Arkansas River Navigation System. Its primary purpose is to provide a means of navigation to commercial and recreational vessels.

Climate: Arthur V. Ormond Lock and Dam is located in Conway County, Arkansas. The climate of Conway County is characterized by mild winters, warm or hot summers, and generally adequate rainfall. In winter the average temperature is 43 degrees F, and the average daily minimum temperature is 33 degrees. In summer the average temperature is 80 degrees, and the average daily maximum is 92 degrees.

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

Jan - 3.29 inches	Jul - 3.22 inches
Feb - 3.26 inches	Aug - 2.70 inches
Mar - 4.86 inches	Sep - 3.89 inches
Apr - 4.76 inches	Oct - 2.83 inches
May - 5.25 inches	Nov - 4.22 inches
Jun - 3.95 inches	Dec - 3.93 inches

The total annual rainfall, about 46 inches, is well distributed throughout the year. Of the total precipitation, 24 inches, or about 50 percent, usually falls in April through September. Thunderstorms occur on about 60 days each year, and most occur in summer. Average seasonal snowfall is 4 inches. The greatest snow depth at any one time during the period of record was 8 inches. On the average, 2 days have a least 1 inch of snow on the ground, but the number of such days varies greatly from year to year.

Soils: Soil types consists of McKamie silt loam, 8 - 12 percent slopes; and Leadvale silt loam, 1 - 3 percent slopes.

McKamie silt loam, 8 - 12 percent slopes. This deep, well drained, moderately sloping soil is on stream terraces. Typically, the surface layer is dark brown silt loam about 3 inches thick. The subsurface layer is brown, mottled silt loam to a depth of 8 inches. The subsoil is a red, mottled silty clay to a depth of 19 inches and red and dark red clay to a depth of 43 inches. The underlying material is dark red silty clay to a depth of 63 inches or more. Permeability is very slow.

Leadvale silt loam, 1 - 3 percent slopes. This deep, moderately well drained, nearly level soil is on slightly concave toe slopes, benches, and terraces. Typically, the surface layer is dark grayish brown silt brown silt loam and silty clay loam to

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a depth of 22 inches; compact and brittle yellowish brown, mottled silty clay loam to a depth of 40 inches; and strong brown, mottled silty clay loam to a depth of 70 inches or more. Permeability is moderately slow above and slow in the compact and brittle layer.

Groundwater: Depth to seasonal high water table range from 2 - 3 feet (in the Leadvale soil areas) to 6 feet (in the McKamie soil areas.)

Source: Soil Survey of Conway County, Arkansas, U.S. Department of Agriculture Soil Conservation Service, Issued 1980.

SPILL HISTORY - ORMOND LOCK AND DAM

CESWL-CO-RV

21 August 1997
Mr. James/jjs/329-2986

MEMORANDUM FOR Ch, Con-Ops Division

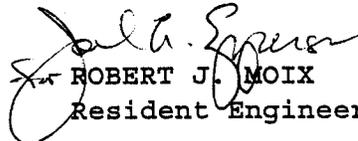
SUBJECT: Spill History, Arthur V. Ormond Lock & Dam

1. Reference Memorandum CESWL-CO-E dated 16 October 1995, Subject: Spill History.

2. The following is a list of known, past spills at the Arthur V. Ormond Lock & Dam:

- A.
- 1) Site/Building: Lock control house
 - 2) Date: Early 1970's, soon after operation began
 - 3) Substance: Hydraulic oil
 - 4) Quantity Released: Approximately 50 gallons
 - 5) Cause: Drain valve was left closed after some repairs were performed causing the filter tank to rupture during re-pressurization.
 - 6) Corrective Action Taken: Tag-out valves closed during repair and re-opened prior to re-pressurization.
 - 7) Method of Disposal: Mopped up and put into drums. Final disposition of the drums is unknown.

3. Please contact Mr. Darrell Sitton at 354-8402 if you have questions or need additional information.


ROBERT J. MOIX
Resident Engineer

Copy furnished:
Toad Suck Ferry Field Ofc, Mr. James
Arthur V. Ormond L&D, Mr. Sitton

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PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX
RUSSELLVILLE

Facility	Petroleum and Hazardous Substances	Approx. Quantity	Location	On/Off Shore	Spill Prevention Measures
Ozark-Jetta Taylor Lock and Dam Ozark, AR	Diesel Aboveground Storage Tank	300 Gal	Lock Compound	On	Secondary Containment
	Hydraulic Fluid	3600 Gal	Lock System	Off	Inspected Daily
	Hydraulic Fluid	55 Gal	Control House, Oil Storage Room	On	Sorbents
	Oil, QE HDO 30	55 Gal	Control House, Oil Storage Room	On	Sorbents
	Oil, LE	165 Gal	Flammable Storage, Lower Level	On	Sorbents
	EP0 Grease	40 Gal	Flammable Storage, Upper Level	On	Sorbents
	EP1 Grease	40 Gal	Flammable Storage, Upper Level	On	Sorbents
	Lubrication Engineers Grease	20 Gal	Flammable Storage, Upper Level	On	Sorbents
	Used Oil	55 Gal	Control House, Oil Storage Room	On	Sorbents

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**PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX
RUSSELLVILLE**

Facility	Potential Hazardous Materials	Approx. Quantity	Location	On/Off Shore	Spill Prevention Measures
Ozark-Jetta Taylor Lock and Dam Ozark, AR (Continued)	Paint	35 Gal	Flammable Storage, Lower Level	On	Sorbents
	Thinner	40 Gal	Control House, Oil Storage Room	On	Sorbents
	Solvent	55 Gal	Control House, Oil Storage Room	On	Sorbents

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SITE DESCRIPTION AND MAP

**Ozark Lock and Dam
Info for Spill Plan
Building Inventory and Description**

A. Lock Control House

1. Area Description: The Lock Control House is a 2-story brick veneer building located adjacent to the landside lock wall, with approximate size of 28' X 96'. The Oil Storage Room (OSR) is located in the east corner of the lower level of the Lock Control House. The shop is located in the center of the lower level of the Lock Control House. The Equipment Room (ER) is located in the east corner of the upper level of the Lock Control House.

2. Substances Stored:

- a. Hydraulic fluid; 55 gal (max) - OSR
- b. Used oil; 55 gal (max) - OSR
- c. Thinner; 40 gal (max, will not replace when used up) - OSR
- d. Solvent; 55 gal (max) - OSR
- e. Solvent; 25 gal in Safety Kleen parts washer - SHOP
- f. Diesel Fuel; 20 gal (max in generator day-tank) - ER

3. Floor Drains: Floor drains are located throughout the building and will either be plugged with a plumber's ball or encircled with absorbent "pigs" to prevent accidental discharge of hazardous substances.

4. Largest Container: 55 gallon drum.

5. Flow Direction in Event of Failure: NNE across esplanade to small drain, then ESE along drain to Arkansas River.

6. Estimate Flow Rate: Estimate 1 FPS for Hydraulic fluid and used oil and 2 FPS for solvent, thinner, and diesel fuel.

7. Distance to Nearest Waterway: Approximately 350' to Arkansas River.

8. Containment Method: Absorbent materials located at the facility.

9. Depth to groundwater: Unknown. Estimate 10'.

B. Flammable Storage Building.

1. Area Description: The Flammable Storage Building is a 2-story, brick veneer building located adjacent to the landside lock wall and southeast of the Lock Control House, with an approximate size of 12' X 12'.

2. Substances Stored:

- a. Oil, Lubrication Engineers; 165 gal (max)
- b. Grease, EP-0; 40 gal
- c. Grease, EP-1; 40 gal
- d. Grease, Lubrication Engineers; 20 gal
- e. Paint, 35 gal

3. Floor Drains: No floor drains in the building.

4. Largest Container: 55 gallon drum.

5. Flow Direction in Event of Failure: NNE across esplanade to small drain, then ESE

Ozark Lock & Dam
Info for Spill Plan (Cont'd)

along drain to Arkansas River.

6. Estimate Flow Rate: Estimate 1 FPS for oil and 0.5 FPS for paint. Grease will not flow.
7. Distance to Nearest Waterway: Approximately 250' to Arkansas River.
8. Containment Method: Absorbent materials located at the facility.
9. Depth to groundwater: Unknown. Estimate 10'.

C. Lock Hydraulic System

1. Area Description: The Lock Hydraulic system consists of piping and pumps in the Lock Control House and Lock Galleries.
2. Substances Stored: Hydraulic fluid; about 3600 gal total.
3. Floor Drains: Floor drains are located throughout the building and will either be plugged with a plumber's ball or encircled with absorbent "pigs" to prevent accidental discharge of hazardous substances.
4. Largest Container: Hydraulic pump reservoir in control house has a capacity of approximately 250 gallons.
5. Flow Direction in Event of Failure: Failure of pump or reservoir - NNE across esplanade to small drain, then ESE along drain to Arkansas River. Failure of piping in gallery - along gallery drain to sump pump pit which would be pumped into river.
6. Estimate Flow Rate: Estimate 1 FPS for Hydraulic fluid..
7. Distance to Nearest Waterway: Failure in the pump or reservoir - 350' to Arkansas River. Failure in gallery - 10' to 250'.
8. Containment Method: Absorbent materials located at the facility.
9. Depth to groundwater: Unknown. Estimate 10'.

D. Diesel Fuel Above-ground Storage Tank

1. Area Description: The Diesel Fuel storage tank is located ESE and about 10' from the Lock Control House.
2. Substances Stored: Diesel Fuel; 300 gal (max)
3. Floor Drains: N/A
4. Largest Container: 300 gallon
5. Flow Direction in Event of Failure: NNE across esplanade to small drain, then ESE along drain to Arkansas River.
6. Estimate Flow Rate: Estimate 2 FPS for diesel fuel
7. Distance to Nearest Waterway: Approximately 300' to Arkansas River.
8. Containment Method: Secondary Containment
9. Depth to groundwater: Unknown. Estimate 10'.

25 Sep 97

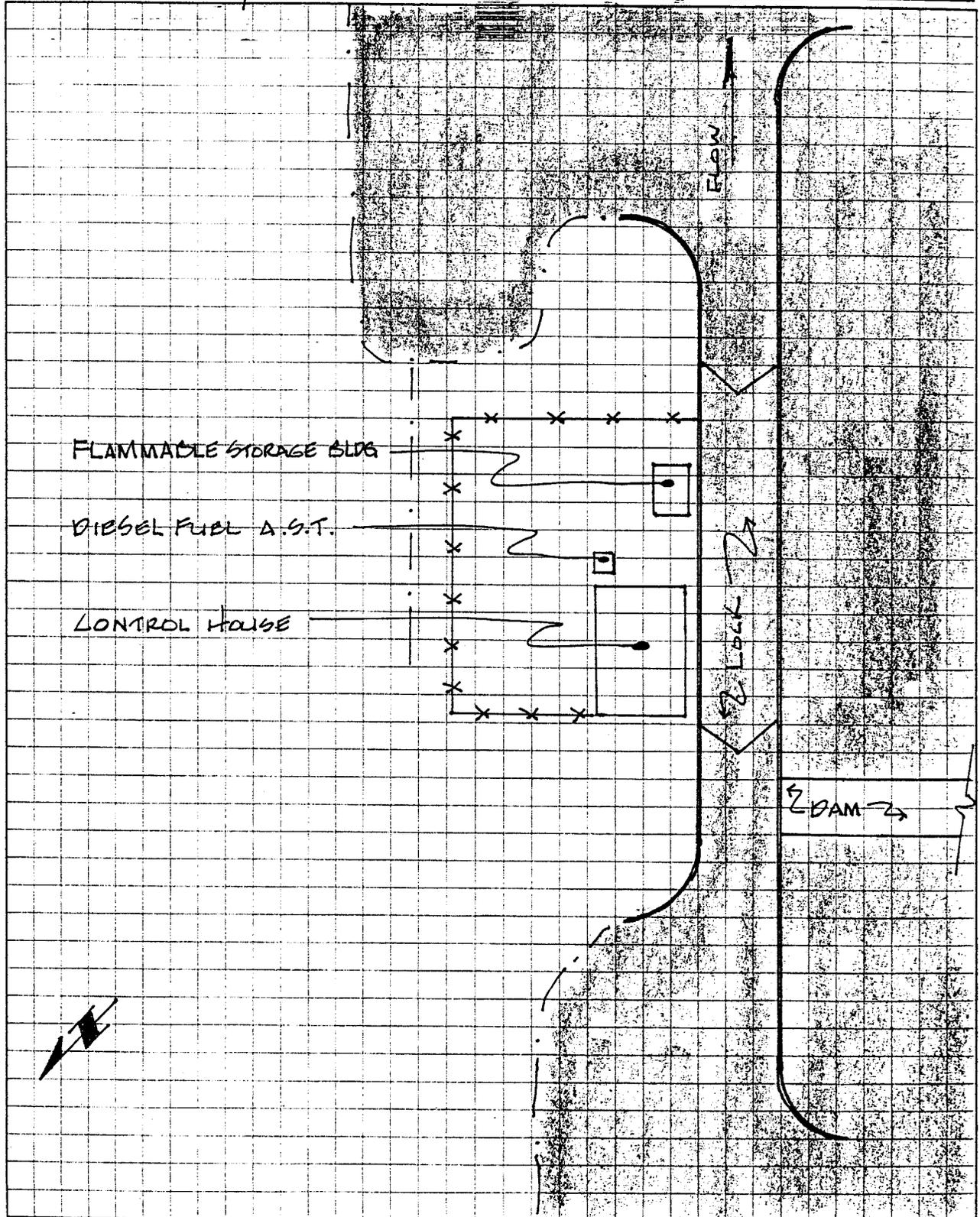
Ozark Lock & Dam

Info for Spill Plan (Cont'd)

E. Dam (Spillway Gate Gearboxes)

1. Area Description: The Dam is located SW from the Lock. The dam has 15 tainter gates, and each gate has two gearboxes.
2. Substances Stored: Oil, Lubrication Engineers; 840 gal (30 boxes @ 28 gal each)
3. Floor Drains: N/A
4. Largest Container: 28 gallons
5. Flow Direction in Event of Failure: Across machinery deck; down to top of pier; and down pier face into Arkansas River.
6. Estimate Flow Rate: Estimate 1 FPS for oil
7. Distance to Nearest Waterway: Approximately 45' to Arkansas River.
8. Containment Method: Absorbents located onsite.
9. Depth to groundwater: Unknown. Estimate 10'.

SUBJECT SPILL PLAN INFO FOR OZARK LOCK & DAM
COMPUTATION SITE PLAN N.T.S. FILE NO. _____
COMPUTED BY BALGANY DATE 13 NOV 96 CHECKED BY _____ DATE _____



PROJECT INFORMATION, CLIMATE AND SOIL DATA
OZARK-JETA TAYLOR LOCK AND DAM (NO. 12)

Project Information: Ozark-Jeta Taylor Lock and Dam is located at navigation mile 256.8 of the McClellan-Kerr Arkansas River Navigation System. Its primary purpose is to provide a means of navigation for commercial and recreational vessels.

Climate: Ozark-Jeta Taylor Lock and Dam is located in Franklin County, Arkansas. The climate of Franklin County is characterized by long warm summers, short mild winters, and occasional periods of intense cold and snow, of short duration. The average daily maximum temperature for January is 50 degrees, and that for July is 93 degrees. The total annual rainfall, about 45 inches, is distributed fairly uniformly throughout the year. Precipitation is heaviest late in spring and early in summer. Droughts are less frequent in this county than in most of the Plain States.

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

Jan - 3.41 inches	Jul - 3.34 inches
Feb - 3.94 inches	Aug - 3.10 inches
Mar - 3.84 inches	Sep - 3.29 inches
Apr - 4.76 inches	Oct - 3.31 inches
May - 5.68 inches	Nov - 3.29 inches
Jun - 4.14 inches	Dec - 3.04 inches

The average amount of snowfall is 3.7 inches per season. This amount represents less than 1 inch of precipitation.

Soils: Soil in the area is Bruno loamy fine sand. The Bruno series consists of excessively drained, rapidly permeable, sandy soils on natural levees along the Arkansas River and the larger upland streams. The slope range is 0 to 2 percent. This soil occurs as long, narrow bands near stream channels. The surface layer of the Bruno soil is light brown to dark brown. The underlying material consists of brown, light-brown, yellowish-brown, or reddish-brown loamy fine sand and thin layers of silt loam or fine sandy loam. Runoff is slow.

Groundwater: Depth to seasonal high water table is greater than 4 feet.

Source: Soil Survey of Franklin County, Arkansas, U.S. Department of Agriculture Soil Conservation Service, Issued 1971.

SPILL HISTORY - OZARK LOCK AND DAM

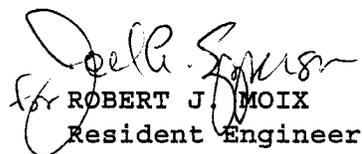
CESWL-CO-RV

21 August 1997
Mr. James/jjs/329-2986

MEMORANDUM FOR Ch, Con-Ops ~~Division~~ 88/28

SUBJECT: Spill History, Ozark-Jeta Taylor Lock & Dam

1. Reference Memorandum CESWL-CO-E dated 16 October 1995, Subject: Spill History.
2. The following is a list of known, past spills at the Ozark-Jeta Taylor Lock & Dam:
 - A. Site/Building: Lock control house
 - B. Date: Summer 1971
 - C. Substance: Hydraulic oil, Mil Symbol 2075
 - D. Quantity Released: Approximately 75 gallons
 - E. Cause: Shut-off valve vibrated open
 - F. Corrective Action Taken: Valves checked weekly
 - G. Method of Disposal: Unknown
3. Please contact Mr. Larry Johnson at 667-2120 if you have questions or need additional information.


for ROBERT J. MOIX
Resident Engineer

Copy furnished:
Toad Suck Ferry Field Ofc, Mr. James
Ozark-Jeta Taylor L&D, Mr. Johnson

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CON OPS DIVISION

**PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX
RUSSELLVILLE**

SWLR 200-1-1
25 Sep 97

Facility	Petroleum and Hazardous Substances	Approx. Quantity	Location	On/Off Shore	Spill Prevention Measures
Ozark Lake Office Ozark, AR	Diesel Aboveground Storage Tank	3,000 Gal	Compound	On	Secondary Containment
	Gasoline Aboveground Storage Tank	8,000 Gal	Compound	On	Secondary Containment
	Antifreeze	10 Gal	Oil Storage Building	On	Sorbents
	Gas, Chain Saw	5 Gal	Oil Storage Building	On	Sorbents
	Oil, Bar and Chain	1 Gal	Oil Storage Building	On	Sorbents
	Oil, 2 Cycle	3 Gal	Oil Storage Building	On	Sorbents
	Automatic Transmission Fluid	3 Gal	Oil Storage Building	On	Sorbents
	Power Steering Fluid	1 Gal	Oil Storage Building	On	Sorbents
	Motor Oil	9 Gal	Oil Storage Building	On	Sorbents
	Hydraulic Oil	1 Gal	Oil Storage Building	On	Sorbents
	Brake Fluid	2 Gal	Oil Storage Building	On	Sorbents

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**PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX
RUSSELLVILLE**

Facility	Petroleum and Hazardous Substances	Approx. Quantity	Location	On/Off Shore	Spill Prevention Measures
Ozark Lake Office Ozark, AR (Continued)	Transmission/ Hydraulic Oil	15 Gal	Paint Building	On	Sorbents
	Paint, Tree Marking	9 Gal	Paint Building	On	Sorbents
	Paint	87 Gal	Paint Building	On	Sorbents
	Paint Thinner	1 Gal	Paint Building	On	Sorbents
	Solvent	12 Gal	Maintenance Shop	On	Sorbents

I-65

SITE DESCRIPTION AND MAP

OZARK FIELD OFFICE, SPILL PLAN BUILDING INVENTORY; 14 Nov 1996

A. Oil Storage Building: (PO-14)

1. 3' x 8' metal building with elevated, vented flooring and no drain.
2. Building has oils and solvents in storage.
3. No floor drains.
4. Largest container is 5 gallons.
5. Flow direction is to the south. Distance to the nearest watercourse is approximately 1000'.
6. Rate of flow - estimated at .10 ft/sec.
7. Distance to the nearest watercourse is approximately 1000'.
8. Absorbent material near site.
9. Groundwater depth - approximately 15', but varies seasonally.

B. Paint and Solvent Building: (PO-04)

1. 9' x 9' metal building with concrete flooring, insulated walls, air vent, and no drain.
2. Building has oil, paint, solvents, insecticides, defrosting fluid, putty, multi-purpose adhesive, and traffic detector wire loop sealer.
3. No floor drains.
4. Largest container stored is 5 gallons.
5. Flow direction is to the south. Distance to the nearest watercourse is approximately 1000'.
6. Rate of flow - estimated .10 ft/sec.
7. Distance to the nearest watercourse is approximately 1000'.
8. Absorbent material in building.
9. Groundwater depth is approximately 15', but varies seasonally.

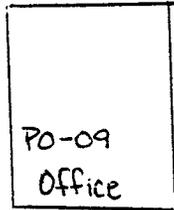
C. Diesel Fuel Storage Tank: (PO-12)

1. 3000 gallon above ground storage tank (elevated on concrete pier), inside approved containment area.
2. Diesel fuel stored in tank.
3. Containment area drain.
4. Largest quantity stored is 3000 gallons of diesel fuel.
5. Flow direction to the south (distance to the nearest watercourse is approximately 1000').
6. Rate of flow - estimated at .10 ft/sec.
7. Distance to the nearest watercourse is approximately 1000'.
8. Concrete containment with lock valve is present. Absorbent materials near site.
9. Groundwater depth is approximately 15', but varies seasonally.

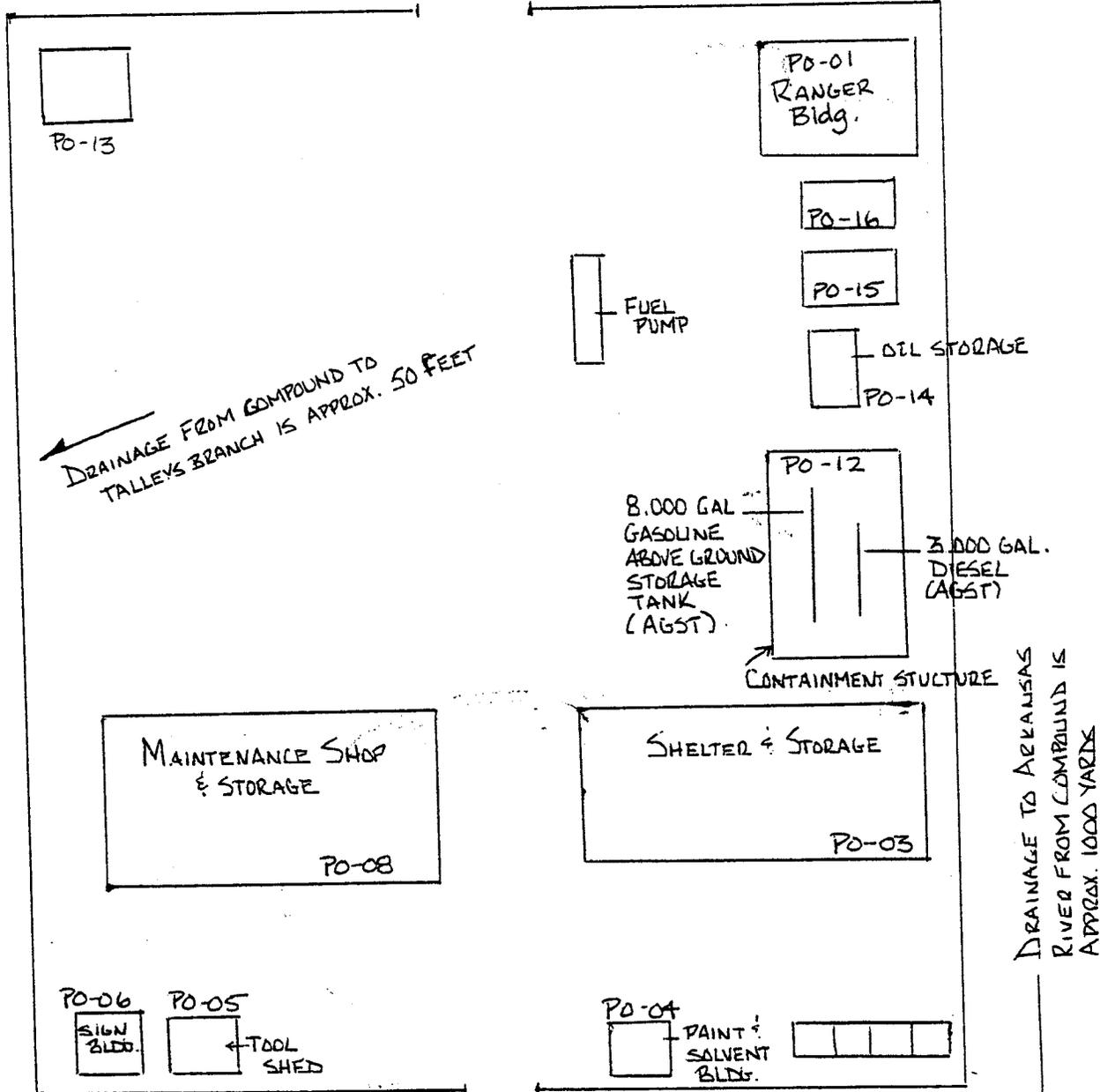
D. Gasoline Storage Tank: (PO-12)

1. 8000 gallon Above ground tank (elevated on concrete piers), inside approved containment area.
2. Unleaded gasoline stored in tank.
3. Containment area drain.
4. Largest quantity stored is 8000 gallons of unleaded gasoline.
5. Flow direction is to the south. Distance to the nearest watercourse is approximately 1000'.
6. Rate of flow - estimated at .10 ft/sec.
7. Distance to the nearest watercourse is approximately 1000'.
8. Concrete containment with locked valve is present. Absorbent material near site.
9. Groundwater depth is approximately 15', but varies seasonally.

VISITOR PARKING



OZARK FIELD Office 1996
14 Nov 1996



PROJECT INFORMATION, CLIMATE AND SOIL DATA
OZARK LAKE OFFICE

Project Information: Ozark Lake Office is located off U.S. Highway 64, approximately two miles southeast of Ozark, Arkansas, near navigation mile 256.8 of the Arkansas River. Its primary purposes are to provide: administrative and operational support to Ozark-Jeta Taylor and James W. Trimble Locks and Dams, and Ozark Powerhouse; operations and maintenance of all recreational areas; and resource management of all lands around Ozark and John Paul Hammerschmidt Lakes.

Climate: Ozark Lake Office is located in Franklin County, Arkansas. The climate of Franklin County is characterized by long warm summers, short mild winters, and occasional periods of intense cold and snow, of short duration. The average daily maximum temperature for January is 50 degrees, and that for July is 93 degrees. The total annual rainfall, about 45 inches, is distributed fairly uniformly throughout the year. Precipitation is heaviest late in spring and early in summer. Droughts are less frequent in this county than in most of the Plain States.

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

Jan - 3.41 inches	Jul - 3.34 inches
Feb - 3.94 inches	Aug - 3.10 inches
Mar - 3.84 inches	Sep - 3.29 inches
Apr - 4.76 inches	Oct - 3.31 inches
May - 5.68 inches	Nov - 3.29 inches
Jun - 4.14 inches	Dec - 3.04 inches

The average amount of snowfall is 3.7 inches per season. This amount represents less than 1 inch of precipitation.

Soils: Soils in the area are a combination of Mountainburg-Rock land association (steep), Linker fine sandy loam (3 to 8 percent slopes), and Mountain stony fine sandy loam (12 to 40 percent slopes). Descriptions of each are as follows:

Mountainburg-Rock land association, steep. This association occurs as narrow, steep bands on the margins of ridges and mountaintops and on mountainsides. It is about 45 percent Mountainburg soils and 35 percent Rock land. Making up about 20 percent are spots of Allen and Muntevallo soils and exposed shale bedrock.

25 Sep 97

Mountainburg soils have a surface layer of dark grayish-brown, dark brown, or brown stony fine sandy loam 4 to 9 inches thick. The subsoil is reddish-brown or yellowish-red stony fine sandy loam or loam 6 to 15 inches thick. The depth to bedrock is 12 to 20 inches. Mountainburg soils are strongly acid to very strongly acid. Permeability is rapid.

Rock land association, steep. Rock land is characterized by ledges and bluffs of sandstone and scattered spots of gravelly or stony sandy loam a few inches thick on the surface.

Linker fine sandy loam, 3 to 8 percent slopes. This soil is on mountaintops, hills, and ridges. The surface layer is brown, very dark grayish brown, dark brown, or grayish brown and is 3 to 10 inches thick. The subsoil is yellowish-red or red sandy clay loam or clay loam 17 to 36 inches thick. The depth to bedrock is 20 to 44 inches. The soil is strongly acid to very strongly acid. Water penetrates easily.

Groundwater: Depth to seasonal high water table is unknown.

Source: Soil Survey of Franklin County, Arkansas, U.S.
Department of Agriculture Soil Conservation Service, Issued 1971.

SPILL HISTORY - OZARK LAKE OFFICE

CESWL-CO-RV

21 August 1997
Mr. James/jjs/329-2986

MEMORANDUM FOR Ch, Con-Ops Division R 8/28

SUBJECT: Spill History, Ozark Lake Field Office

1. Reference Memorandum CESWL-CO-E dated 16 October 1995, Subject: Spill History.

2. The following is a list of known, past spills at the Ozark Lake Field Office:

- A. 1) Site/Building: Storage yard
2) Date: Unknown
3) Substance: Roofing tar
4) Quantity Released: Less than 1/2 gallon
5) Cause: Used barrels left on site with bungs off
6) Corrective Action Taken: Store drums properly
7) Method of Disposal: None. Instructed by CESWL-CO-E personnel to leave in place, September 1995.
- B. 1) Site/Building: Storage yard
2) Date: Unknown
3) Substance: Used oil
4) Quantity Released: Less than 1/2 gallon
5) Cause: Used barrels left on site with bungs off
6) Corrective Action Taken: Store drums properly
7) Method of Disposal: None. Instructed by CESWL-CO-E personnel to leave in place, September 1995.
- C. 1) Site/Building: Fuel storage tanks
2) Date: 05 May 1995
3) Substance: Unleaded gasoline
4) Quantity Released: 30-40 gallons
5) Cause: Fuel delivery company overflowed tank during loading operations.
6) Corrective Action Taken: Require pressure-tight filling devices.
7) Method of Disposal: Evaporation inside of containment area.

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CON-OPS DIVISION

25 Sep 97

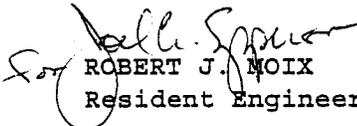
CESWL-CO-RV

21 August 1997

SUBJECT: Spill History, Ozark Lake Field Office

- D.
- 1) Site/Building: Fuel storage tanks
 - 2) Date: 05 October 1995
 - 3) Substance: Unleaded gasoline
 - 4) Quantity Released: 30-40 gallons
 - 5) Cause: Fuel delivery company overflowed tank during unloading operations.
 - 6) Corrective Action Taken: Require pressure-tight filling devices.
 - 7) Method of Disposal: Evaporation inside of containment area.

3. Please contact Mr. Paul Miller at 667-2129 if you have questions or need additional information.


ROBERT J. MOIX
Resident Engineer

Copy furnished:

Toad Suck Ferry Field Ofc, Mr. James

Ozark Lake Field Ofc, Mr. Miller

**PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX
RUSSELLVILLE**

Facility	Petroleum and Hazardous Substances	Approx. Quantity	Location	On/Off Shore	Spill Prevention Measures
Ozark Powerhouse Ozark, AR	Electric Transformers - Oil (1 at 8,000 Gals & 1 at 9,000 Gals)	17000 Gal	Transformer Yard, Elevation 377.0	On	Secondary Containment and inspected regularly.
	Circuit Breaker Oil (7 each at 5700 gal and system)	26180 Gal	Switchyard, Elevation 377.0	On	Sorbents and inspected daily.
	Circuit Breaker Oil Aboveground Storage Tanks (2 each at 5,000 gals)	10000 Gal	Insulating Oil Room, Elevation 322.0	Off	Drains to sump system where oil can be recovered.
	Speed Increaser Oil (5 each at 1500 gals)	7500 Gal	Generator Bay, Elevation 338.5	Off	Drains to sump system where oil can be recovered.
	Turbine Oil (5 each at 1500 gals)	7500 Gal	Turbins (Hubs)	Off	Inspected daily.
	Capacity Governor Oil Aboveground Storage Tanks (5 at 1200 gals)	6000 Gal	Turbins Bay, Elevation 343.5	Off	Drains to sump system where oil can be recovered.

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PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX
RUSSELLVILLE

SWLR 200-1-1
25 Sep 97

Facility	Petroleum and Hazardous Substances	Approx. Quantity	Location	On/Off Shore	Spill Prevention Measures
Ozark Powerhouse Ozark, AR (Continued)	Transformer Oil Aboveground Storage Tanks (4 at 5000 gals)	20000 Gal	Insulating Oil Room, Elevation 322.0	Off	Drains to sump system where oil can be recovered.
	EP1 Grease	220 Gal	Paint Storage Room, Elevation 343.5	Off	Sorbents and inspected daily.
	Capacity Generator Oil Aboveground Storage Tanks (5 at 300 gals)	1500 Gal	Generator Bay, Elevation 338.5	Off	Sorbents and inspected daily.
	* Lubrication Oil (2 aboveground storage tanks at 3550 gals)	7100 Gal	Lub Oil Room in Service Bay, Elevation 343.5	Off	Drains to sump system where oil can be recovered, inspected daily.
	* Lubrication Oil (2 aboveground storage tanks at 1750 gals)	3500 Gal	Lub Oil Room in Service Bay, Elevation 343.5	Off	Drains to sump system where oil can be recovered, inspected daily.
	Paint	50 Gal	Paint Room, Elevation 343.5	Off	Sorbents and inspected daily.

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**PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX
RUSSELLVILLE**

Facility	Petroleum and Hazardous Substances	Approx. Quantity	Location	On/Off Shore	Spill Prevention Measures
Ozark Powerhouse Ozark, AR (Continued)	Solvent	80 Gal	Paint Room, Elevation 343.5	Off	Sorbents and inspected daily.
	Thinner	25 Gal	Paint Room, Elevation 343.5	Off	Sorbents and inspected daily.
	Used Oil	50 Gal	Paint Room, Elevation 343.5	Off	Sorbents and inspected daily.

* Note: System allows for storage of clean and dirty oil. Used oil is continuously cleaned and recycled.

I-75

SITE DESCRIPTION AND MAPS

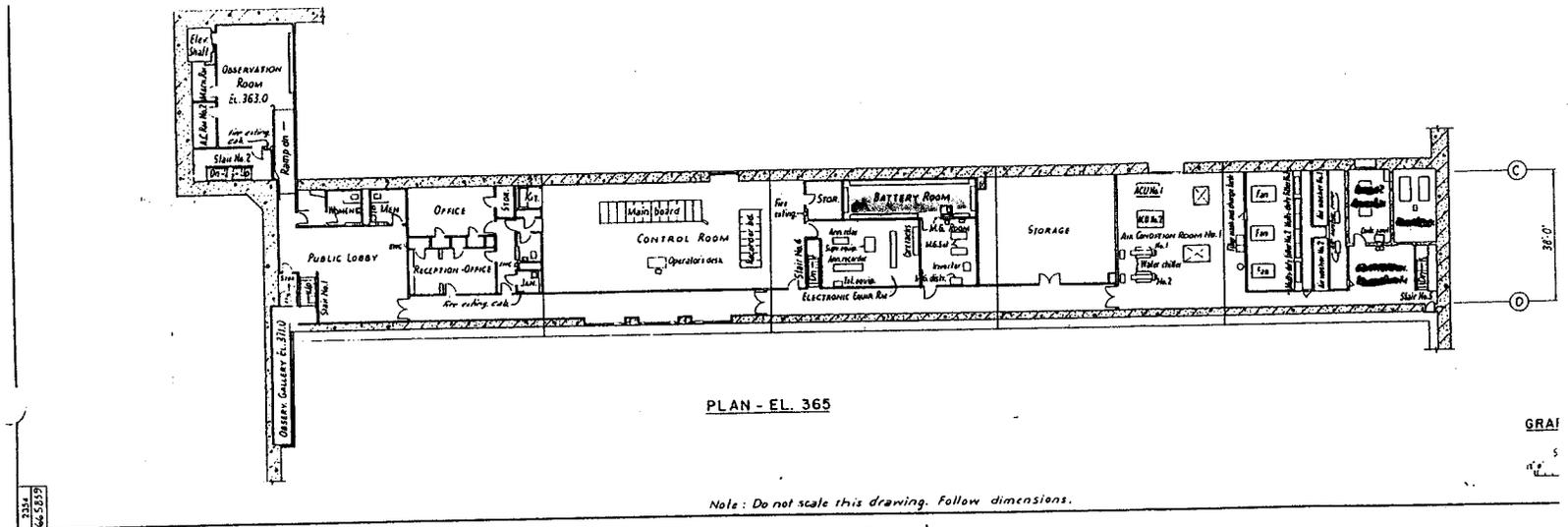
**POTENTIAL SPILL SITES FOR OZARK POWER PLANT
(As of December 1996)**

- A. Battery Room, Elevation 365 (Ref. Drg "A")
1. 60 cells @ 3 gallons each, sulfuric acid
24 cells @ 1 gallon each, sulfuric acid
All contents inside a 42'X12' concrete walled room.
 2. Floor drain: Yes, to station drainage sump.
 3. Rate of flow: Approx. 5 gpm.
 4. Containment: Drain can be plugged; portable door boom can be installed to contain spills.
- B. Turbine Lube Oil Storage Room, Elevation 343.5 (Ref. Drg "B")
1. Contents: 2 - 3000 gallon tanks of lubricating oil
2 - 1500 gallon tanks of lubricating oil
 2. Floor drains: Yes, 4 - 4" drains to oil sump (ref. Item J)
 3. Rate of flow: Approx. 20 gpm.
 4. Containment: Oil sump.
- C. Paint and Grease Storage Room, Elevation 343.5 (Ref. Drg "B")
1. Contents: 11 - 55 gallon drums of gear grease
1 - 20 gallon drum of de-greaser
1 - 30 gallon drum of viscosine (air filter cleaner)
1 - 55 gallon drum of lacquer thinner
15 - 1 gallon cans of electrical varnish
50 - 1 gallon cans of paint
All contents held within a 25'X18' concrete walled room.
 2. Floor drain: No
 3. Containment: Portable door boom can be installed to contain any spills.
- D. Turbine Bay, Elevation 343.5 (Ref. Drg "B")
1. Contents: 5 Turbine Governor Systems, consisting of 2 - 1000# pressure tanks and 1 sump each.
Each system contains 900 gallons of 2190 TEP lube oil.
 2. Floor drains: Various floor drains and pipe trenches located throughout entire bay lead directly to station drainage sump.
 3. Rate of flow: Approx. 10 gpm.
 4. Containment: Oil-in-sump detectors in order that sump pumps could be turned off and oil could be contained in station drainage sump.
- E. Generator Bay, Elevation 338.5 (Ref. Drg "B")
1. Contents: 5 unit speed increasers, each with a capacity of 1800 gallons of lube oil.
 2. Floor drains: Yes, each speed increaser is constructed over a containment area which if overfilled, any escaping oil would flow into a 4" drain and would ultimately end up in the station drainage sump.
- (Continued next page)

3. Rate of flow: Approx. 5 gpm.
 4. Containment: Booms added to existing containment area to increase volume.
- F. Generator Bay, Elevation 338.5 (Ref. Drg "B")
1. Contents: 5 unit generator bearings oil sumps, each with a capacity of 200 gallons of lube oil.
 2. Floor drains: No, however an adjoining 18"X18" pipe trench would ultimately carry any spills to the station drainage sump.
 3. Rate of flow: Approx. 5 gpm.
 4. Containment: Possibly encircling each unit with portable boom material on a continuing basis. While this would be unsightly, it would contain spills long enough for recovery efforts to be made.
- G. Insulating Oil Storage Room, Elevation 322 (Ref. Drg "C")
1. Contents: 6- 5000 gallon oil tanks of insulating oil.
Located in a 25'X36' concrete walled room with a 6" recessed floor as a containment area.
 2. Floor drains: Yes, 2 - 4" drains located in a 12"X12" pipe trench carry any spills to the oil sump.
 3. Rate of flow: Approx. 10 gpm.
 4. Containment: Provided with recessed floor and oil sump. (Ref. Item J)
- H. Sewage Treatment Room, Elevation 322 (Ref. Drg "C")
1. Contents: 1 - 3600 gallon concrete sewage tank located in an 18'X18' concrete walled room.
 2. Floor drain: Yes, 1 - 3" drain to station drainage sump.
 3. Rate of flow: Approx. 5 gpm.
 4. Containment: Drain could be plugged; portable door booms could be installed. Otherwise, sump pumps would be turned off until recovery could be effected from drainage sump.
- I. Oil Transfer (Purification) Room, Elevation 322 (Ref. Drg "C")
1. Transfer facilities only, no storage. Room is a 18'X18' concrete walled area with a 6" recessed floor.
 2. Floor drain: Yes, 1 - 4" drain to oil sump
 3. Rate of flow: Approx. 5 gpm.
 4. Containment: Recessed floor and oil sump.
- J. Oil Sump, below elevation 322 (Ref Drg "C")
1. This is a containment space capable of holding some 1028.5 cu. ft. of oil waste and spill (Approx. 7700 gallons) until recovery can be made.
- K. Equipment Gallery, Elevation 296.5 (Ref. Drg "C")
1. Contents: 5 - Turbine Stub Shaft Bearing Oil Sumps (Racine) which contain 50 gallons of lube oil each.
(Continued next page)

25 Sep 97

2. Floor drains: Yes, various drains located in gallery gutters all lead to station drainage sump.
 3. Rate of flow: Approx. 5 gpm.
 4. Containment: The need to keep all gutters open to accomodate normal leakage would make use of portable booms difficult. Any spill would, of necessity, have to be recovered from the station drainage sump.
- L. Switchyard (Outside), Elevation 377 (Ref. Site Map)
1. Contents: 7 - Oil Circuit Breakers, with 3 insulating oil tanks each, for a total of 21 tanks.
 2. Each tank has a capacity of 1900 gallons and is self-contained.
 3. Any spillage would be slight. It would be absorbed into the sand base where it could be recovered.
- M. Transformer Yard (Outside), Elevation 377 (Ref. Site Map)
1. Contents: 2 - 13.8/161 kv, 3 phase power transformers.
 2. Each transformer has a capacity of 7730 gallons of insulating oil and is self-contained.
 3. Any spillage would be slight. However, it would drain into an adjoining containment field where it could be easily recovered. (Note Item N)
- N. Transformer Oil Containment Area (Outside), Elevation 371 - 377 (Ref. Site Map)
1. Fed by a 6" pipe from the Transformer Yard.
 2. Capacity: Approx. 1600 cu.ft., or 12,000 gallons.
- O. Special note on the Station Drainage Sump.
1. The station drainage sump has a capacity of approximately 3460 cu.ft., or 25,880 gallons which is adequate to contain any spills, if the sump pumps are turned off.
- P. Notes on all potential spill sites.
1. All areas are inspected at least once daily.
 2. All tanks are constructed of heavy gauge steel, except as otherwise noted.



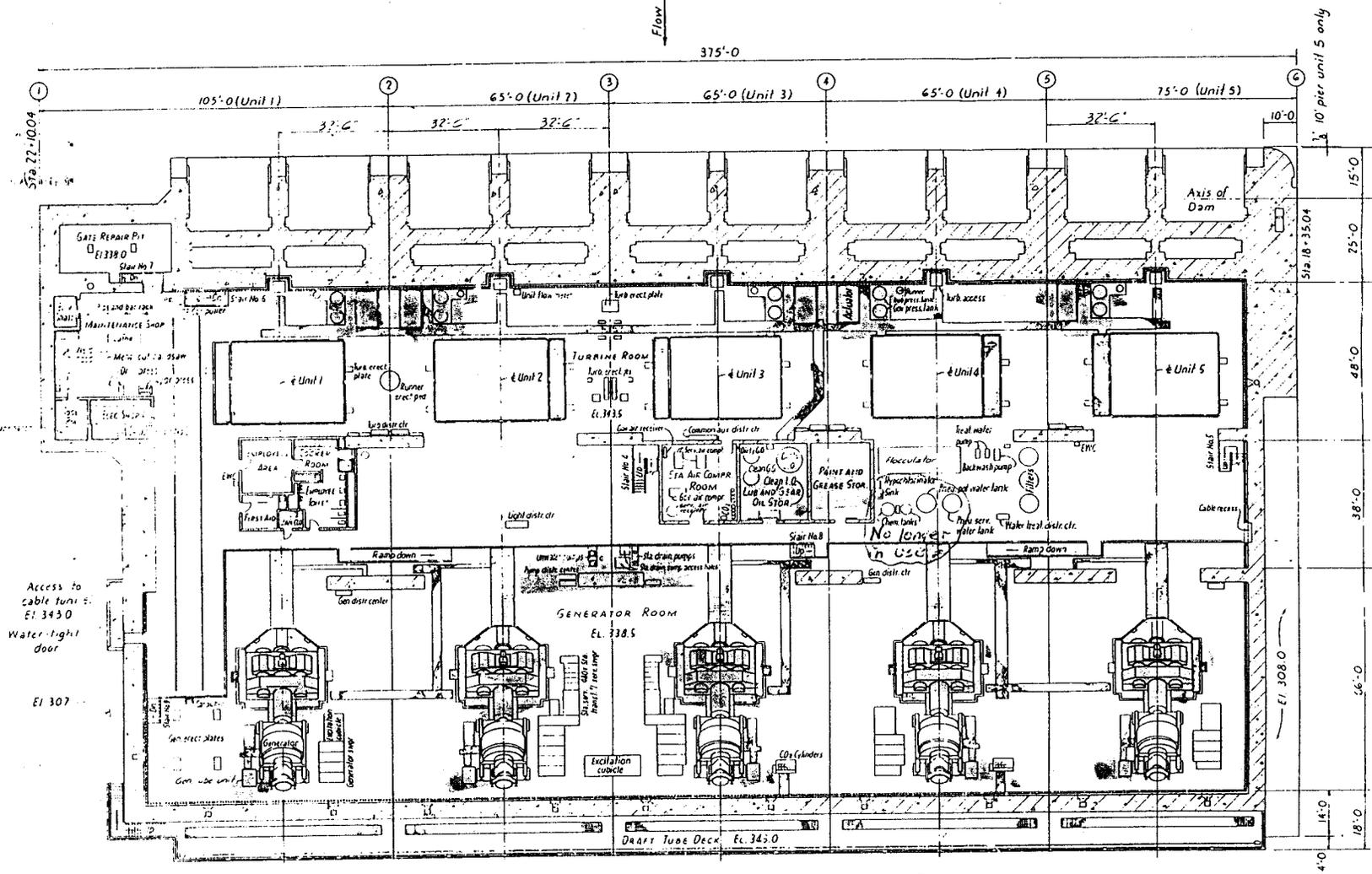
Ozark Power Plant
DRG "A"

I-80

Ozark Power Plant

CORPS OF ENGINEERS

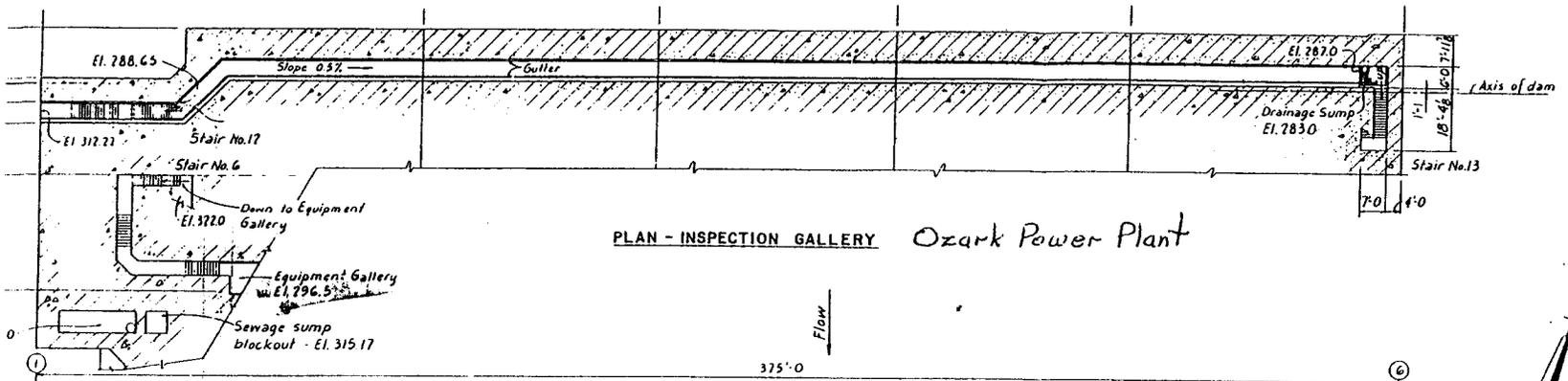
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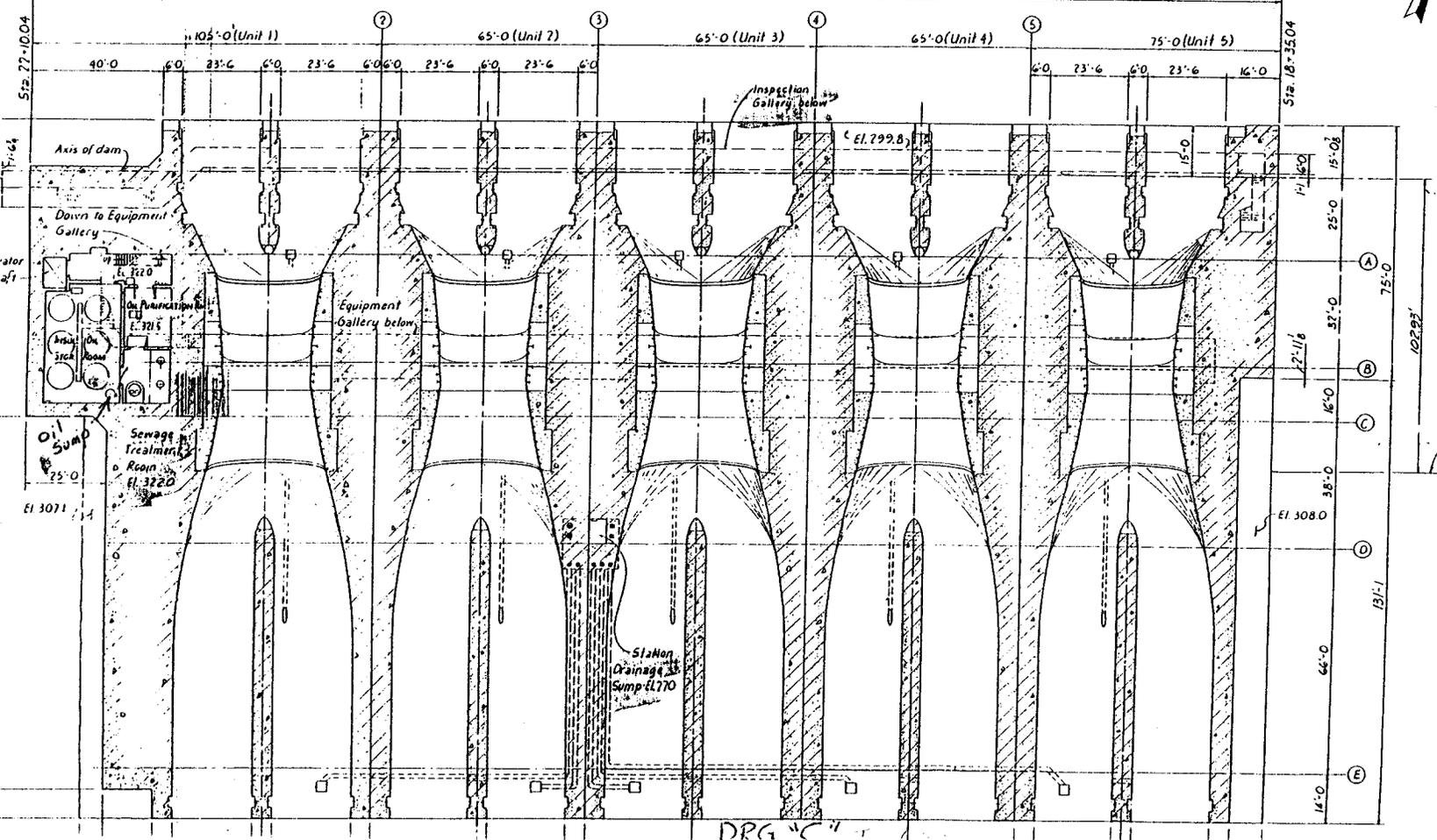
PLAN - EL. 338.5 AND EL. 343.5

DRG "B"

SWLR 200-1-1
25 Sep 97



PLAN - INSPECTION GALLERY Ozark Power Plant



I-82



PROJECT INFORMATION, CLIMATE AND SOIL DATA
OZARK POWERHOUSE

Project Information: Ozark Powerhouse is located near navigation mile 256.8 of the McClellan-Kerr Arkansas River Navigation System. Its primary purpose is to generate hydroelectric power.

Climate: Ozark Powerhouse is located in Franklin County, Arkansas. The climate of Franklin County is characterized by long warm summers, short mild winters, and occasional periods of intense cold and snow, of short duration. The average daily maximum temperature for January is 50 degrees, and that for July is 93 degrees. The total annual rainfall, about 45 inches, is distributed fairly uniformly throughout the year. Precipitation is heaviest late in spring and early in summer. Droughts are less frequent in this county than in most of the Plain States.

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

Jan - 3.41 inches	Jul - 3.34 inches
Feb - 3.94 inches	Aug - 3.10 inches
Mar - 3.84 inches	Sep - 3.29 inches
Apr - 4.76 inches	Oct - 3.31 inches
May - 5.68 inches	Nov - 3.29 inches
Jun - 4.14 inches	Dec - 3.04 inches

The average amount of snowfall is 3.7 inches per season. This amount represents less than 1 inch of precipitation.

Soils: Soil in the area is Bruno loamy fine sand. The Bruno series consists of excessively drained, rapidly permeable, sandy soils on natural levees along the Arkansas River and the larger upland streams. The slope range is 0 to 2 percent. This soil occurs as long, narrow bands near stream channels. The surface layer of the Bruno soil is light brown to dark brown, The underlying material consists of brown, light-brown, yellowish-brown, or reddish-brown loamy fine sand and thin layers of silt loam or fine sandy loam. Runoff is slow.

Groundwater: Depth to seasonal high water table is greater than 4 feet.

Source: Soil Survey of Franklin County, Arkansas, U.S. Department of Agriculture Soil Conservation Service, Issued 1971.

SWLR 200-1-1
25 Sep 97

SPILL HISTORY - OZARK POWERHOUSE

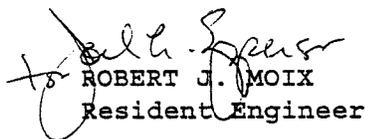
CESWL-CO-RV

21 August 1997
Mr. James/jjs/329-2986

MEMORANDUM FOR Ch, Con-Ops Division

SUBJECT: Spill History, Ozark Powerhouse

1. Reference Memorandum CESWL-CO-E dated 16 October 1995, Subject: Spill History.
2. No significant spills have been reported at the Ozark Powerhouse. Please contact Mr. Ken Storm at 968-5008 if you have questions or need additional information.


ROBERT J. MOIX
Resident Engineer

Copy furnished:
Toad Suck Ferry Field Ofc, Mr. James
Ozark Powerhouse, Mr. Storm

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CON-OPS DIVISION

**PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX
RUSSELLVILLE**

Facility	Petroleum and Hazardous Substances	Approx. Quantity	Location	On/Off Shore	Spill Prevention Measures
Russellville Project Office Russellville, AR	Antifreeze	6 Gal	Maintenance Shop	On	Sorbents
	Oil	20 Gal	Maintenance Shop	On	Sorbents
	Solvents	10 Gal	Maintenance Shop	On	Sorbents
	Paint Thinner	6 Gal	Maintenance Shop	On	Sorbents
	Paint	8 Gal	Maintenance Shop	On	Sorbents

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SITE DESCRIPTION AND MAP

RUSSELLVILLE PROJECT OFFICE AREA

A. Oil Storage Building

1. 8' X 8' metal building on a concrete slab and no drain.
2. Building has oils and anti-freeze in storage.
3. No floor drains.
4. The largest container of oil is a 55 gal drum.
5. Flow direction is to the South. .
6. Rate of flow - estimated .10 ft/sec.
7. Distance to the Arkansas River is approximately 600'.
8. Absorbant materials near site.
9. Depth to groundwater - approximately 40'.

B. Paint Storage Building

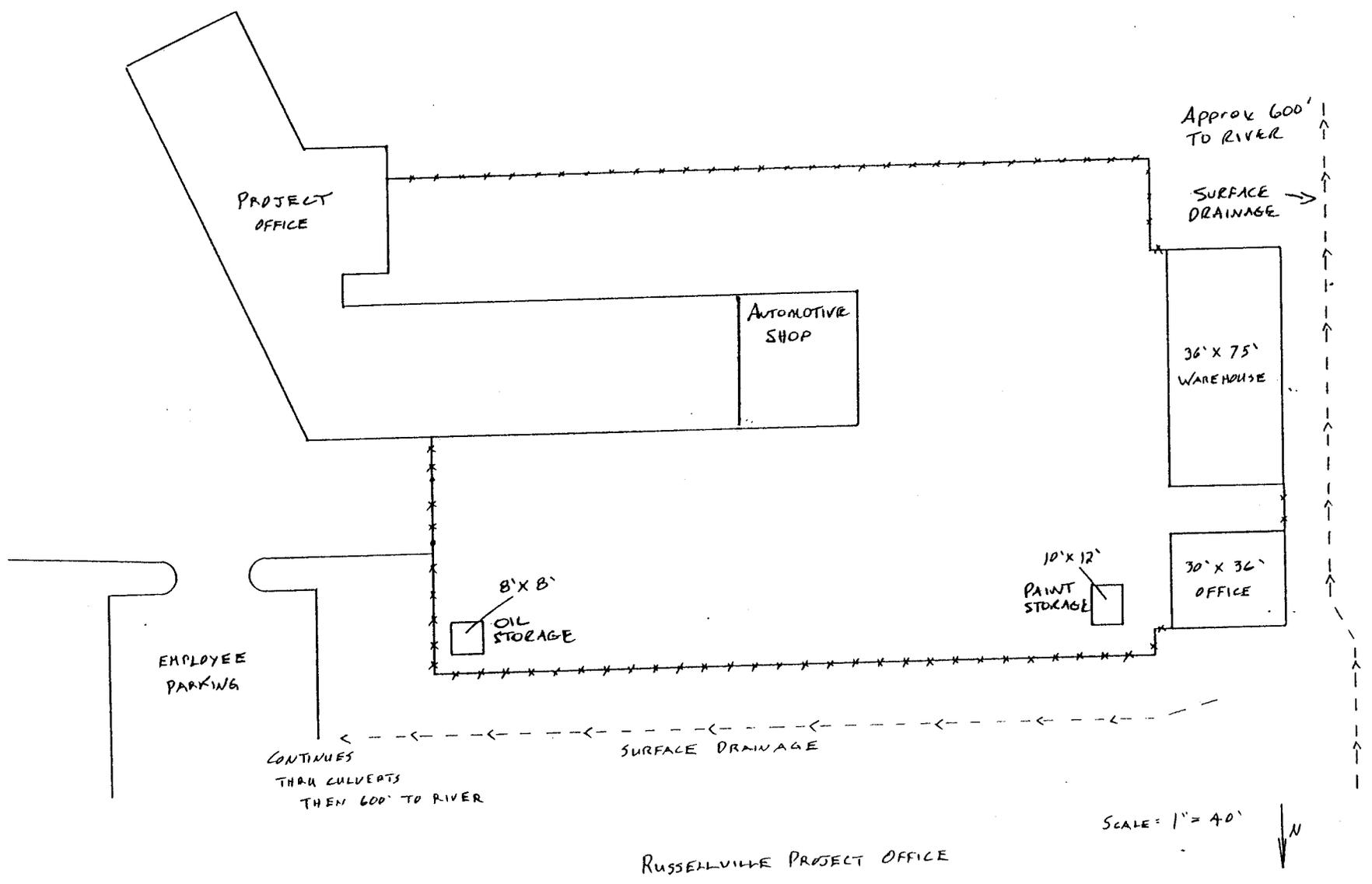
1. 10' X 12' brick building on a slab floor and no drain.
2. Building stores paints in small containers.
3. No floor drains.
4. Largest containers are 1 gallon cans of paint.
5. Spill would be contained inside the building.
6. Rate of flow - estimated .10 ft/sec.
7. Distance to the Arkansas River is approximately 600'.
8. Absorbant materials near the site.
9. Depth to groundwater is approximately 40'.

C. Automotive Shop

1. Two approved OSHA storage cabinets, and 1 parts cleaner.
2. Miscellaneous solvents, paints, and flammables.

3. No floor drains.
4. The largest container is the parts washer with approximately 5 gallons of nonvolatil solvent.
5. Spill would be contained inside the building.
6. Rate of flow - estimated .10 ft/sec.
7. Distance to Arkansas River is approximately 600'.
8. Absorbant materials adjacent to hazardous materials.
9. Depth to groundwater approximately 40'.

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SCALE = 1" = 40'

RUSSELLVILLE PROJECT OFFICE

PROJECT INFORMATION, CLIMATE AND SOIL DATA
RUSSELLVILLE PROJECT OFFICE

Project Information: Russellville Project Office is located upstream near Dardanelle Lock and Dam, at navigation mile 205.5 of the McClellan-Kerr Arkansas River Navigation System. Its primary purposes are to provide administrative and operational/maintenance support to: Ozark and Dardanelle Powerhouses; locks and dams along the Arkansas River from Little Rock, Arkansas to Oklahoma; Dardanelle Marine Terminal; and numerous parks and recreational facilities.

Climate: Russellville Project Office is located in Pope County, Arkansas. Pope County is hot in summer and moderately cool in winter. In winter the average temperature is 42 degrees F, and the average daily minimum temperature is 30 degrees. In summer the average temperature is 80 degrees, and the average daily maximum temperature is 92 degrees.

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

Jan - 2.98 inches	Jul - 3.53 inches
Feb - 3.43 inches	Aug - 3.55 inches
Mar - 4.97 inches	Sep - 4.06 inches
Apr - 4.82 inches	Oct - 3.47 inches
May - 5.12 inches	Nov - 4.26 inches
Jun - 4.42 inches	Dec - 3.64 inches

Total annual rainfall is about 48 inches and is fairly heavy and well distributed throughout the year. Snow falls nearly every winter, but snow cover lasts but a few days. Of the total annual precipitation, 26 inches, or 54 percent, usually falls in April through September. Average seasonal snowfall is 3 inches. The greatest snow depth at any one time during the period of record was 8 inches. On the average, seldom is there a day with at least 1 inch of snow on the ground, but the number of such days varies greatly from year to year.

Soils: Soil types consists of Mountainburg stony fine sandy loam, 1 to 40 percent slopes; Mountainburg gravelly fine sandy loam, 3 to 8 percent slopes; Bruno loamy fine sand, 0 to 3 percent slopes; Dardanelle silt loam, gently undulating, 0 - 3 percent slopes; Muskogee silt loam, 3 to 8 percent slopes; Taft silt loam, 0 to 2 percent slopes; and McKamie very fine sandy loam, 3 to 8 percent slopes.

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Mountainburg stony fine sandy loam. This shallow, well drained, nearly level to moderately steep soil is on side slopes and tops of hills, mountains, and ridges. Typically the surface layer is very dark grayish brown stony fine sandy loam about 2 inches thick. The subsurface layer is brown stony fine sandy loam to a depth of about 6 inches. The subsoil is strong brown very gravelly loam to about 15 inches. Below this is level-bedded acid sandstone bedrock. Permeability is moderately rapid.

Mountainburg gravelly fine sandy loam. This shallow, well drained, gently sloping soil is on hilltops, mountaintops, and ridges. Typically, the surface layer is very dark grayish brown gravelly fine sandy loam about 2 inches thick. The subsurface layer is brown gravelly fine sandy loam to a depth of about 6 inches. The subsoil is strong brown very gravelly loam to about 15 inches. Below this is level-bedded acid sandstone bedrock. Permeability is moderately rapid.

Bruno loamy fine sand. This deep, excessively drained, level to nearly level soil is on natural levees on the protected areas of the flood plain of the Arkansas River. Typically, the surface layer is brown loamy fine sand about 6 inches thick. The underlying layers are stratified brown and pale brown loamy fine sand and very fine sandy loam extending to a depth of 72 inches or more. Permeability is rapid.

Dardanelle silt loam, gently undulating. This deep, well drained soil is on natural levees along the Arkansas River. Typically, the surface layer is very dark grayish brown silt loam about 7 inches thick. The next layer is very dark brown silt loam to a depth of about 23 inches. The subsoil is dark reddish brown silt loam to 28 inches and reddish brown silty clay loam to 51 inches. The underlying material is brown very sandy loam and silt loam to a depth of 91 inches or more. Permeability is moderate.

Muskogee silt loam. This deep, moderately well drained, gently sloping soil is on high terraces along the Arkansas River. Typically, the surface layer is dark brown silt loam about 4 inches thick. The subsurface layer is yellowish brown silt loam about 6 inches thick. The subsoil is yellowish brown silty clay loam to a depth of about 15 inches; yellowish brown, mottled silty clay loam to 25 inches; yellowish red, mottled silty clay to 45 inches; and yellowish red clay to 72 inches or more. Permeability is slow.

Taft silt loam. This deep, somewhat poorly drained, level to nearly level soil is on oil stream terraces in broad valleys. Typically, the surface layer is dark grayish brown silt loam about 6 inches thick. The subsurface layer is brown silt loam to a depth of about 11 inches. The subsoil is yellowish brown mottled, friable silt loam to about 19 inches; light brownish gray, mottled, friable silt loam to 25 inches; a fragipan from 25 to 56 inches that is mottled gray and yellowish brown silt loam to 35 inches and mottled gray and yellowish brown silty clay loam to 56 inches; yellowish brown, mottled, firm silty clay loam to 66 inches; and mottled gray and yellowish brown firm silty clay loam to 74 inches or more. Permeability is slow.

McKamie very fine sandy loam. This deep well drained, gently sloping soil is on high terraces along the Arkansas River. Typically, the surface layer is dark brown very fine sandy loam about 2 inches thick. The next layer is brown very fine sandy loam to a depth of about 4 inches. The subsoil is red silty clay to 42 inches. Below this is mottled yellowish red and red clay loam to 56 inches and mottled strong brown and red silty clay loam to 72 inches. Permeability is very slow.

Groundwater: Depth to seasonal high water table is greater than 6 feet, except for the following soil types: Bruno loamy fine sand, 4 - 6 feet; Muskogee silt loam, 1 - 2 feet; and Taft silt loam, 1 - 2 feet.

Source: Soil Survey of Pope County, Arkansas, U.S. Department of Agriculture Soil Conservation Service, Issued 1981.

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SPILL HISTORY - RUSSELLVILLE PROJECT OFFICE

CESWL-CO-RV

7 November 1995
Balgavy/ee/5137

MEMORANDUM FOR ^{K14}Chief, Con-Ops Division

SUBJECT: Spill History ^{EM BR}

1. Reference CESWL-CO-E memorandum dated 16 October 1995, subject as above.

2. The following is a list of known, past spills at the Russellville Office:

A. Ormond Lock

- 1) Site/Building: Lock Control House
- 2) Date: Early 1970's (soon after operation began)
- 3) Substance: Hydraulic Oil
- 4) Quantity Released: About 50 gallons
- 5) Cause: Drain valve was left closed after some repairs were performed. This caused the filter tank to rupture during re-pressurization.
- 6) Corrective Action Taken: Tag out valves closed during repair and re-opened prior to re-pressurization.
- 7) Method of Disposal: Mopped up and put into drums. Final disposition of drums is unknown.

B. Ormond Lock

- 1) Site/Building: Dock Area
- 2) Date: 1995
- 3) Substance: Unknown (believed to be used motor oil)
- 4) Quantity Released: Estimated - less than 5 gallons
- 5) Cause: Contractor abandoned the jobsite and left leaking 55-gallon drum on dock.
- 6) Corrective Action Taken: Acquiring overpack to contain further spill. Making arrangements through Logistics to have this drum and other non-leaking drums removed from the site.
- 7) Method of Disposal: To be determined based on results of testing to determine contents.

C. Ozark Lock

- 1) Site/Building: Lock Control House
- 2) Date: Summer, 1971
- 3) Substance: Hydraulic Oil, Mil Symbol 2075
- 4) Quantity Released: Approximately 75 gallons
- 5) Cause: Shutoff Valve vibrated open
- 6) Corrective Action Taken: Valves checked weekly
- 7) Method of Disposal: Unknown

CESWL-CO-RV
SUBJECT: Spill History

D. Dardanelle Marine Terminal

- 1) Site/Building: Drum Storage Building
- 2) Date: Accumulation since about 1993
- 3) Substance: Hydraulic Oil, Motor Oil, Solvent
- 4) Quantity Released: Quantity Unknown
- 5) Cause: Insufficient/overflowing drip pans and excessive spillage during filling
- 6) Corrective Action Taken: Periodic check of drip pans, and cautioned employees of the importance of not having spills during filling operations
- 7) Method of Disposal: Contractor removal in August, 1995

E. Dardanelle Marine Terminal

- 1) Site/Building: Used Oil Tank
- 2) Date: Accumulation since about 1991
- 3) Substance: Used Oil
- 4) Quantity Released: Quantity Unknown
- 5) Cause: Excessive spillage during filling.
- 6) Corrective Action Taken: Employees of the importance of not having spills during filling operations
- 7) Method of Disposal: Contractor removal in August, 1995

F. Lake Dardanelle Field Office Land Maintenance Area

- 1) Site/Building: Connex Container
- 2) Date: Discovered in 1989 or 1990
- 3) Substance: Chlordane
- 4) Quantity Released: Less than 5 gallons
- 5) Cause: Rusted out container
- 6) Corrective Action Taken: Keep minimal amount of poisons on hand and contract out as much as possible. Periodically check condition of containers stored onsite.
- 7) Method of Disposal: Advice from ADPC&E was to aerate building until no odor remained

G. Ozark Lake Field Office

- 1) Site/Building: Storage Yard
- 2) Date: Unknown
- 3) Substance: Roofing Tar
- 4) Quantity Released: Less than 1/2 gallon
- 5) Cause: Used barrels left on side with bungs off
- 6) Corrective Action Taken: Store drums properly

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CESWL-CO-RV

SUBJECT: Spill History

- 7) Method of Disposal: None. Instructed by CESWL-CO-E personnel to leave in place, September 1995

H. Ozark Lake Field Office

- 1) Site/Building: Storage Yard
- 2) Date: Unknown
- 3) Substance: Used Oil
- 4) Quantity Released: Less than 1/2 gallon
- 5) Cause: Used barrels left on side with bungs off
- 6) Corrective Action Taken: Store drums properly
- 7) Method of Disposal: None. Instructed by CESWL-CO-E personnel to leave in place, September 1995

I. Ozark Lake Field Office

- 1) Site/Building: Fuel Storage Tanks, Land Maint
- 2) Date: 5 May 1995
- 3) Substance: Unleaded Gasoline
- 4) Quantity Released: 30-40 gallons
- 5) Cause: Fuel delivery company overflowed tank during unloading operations.
- 6) Corrective Action Taken: Require pressure-tight filling devices
- 7) Method of Disposal: Evaporation inside of containment area

J. Ozark Lake Field Office

- 1) Site/Building: Fuel Storage Tanks, Land Maint
- 2) Date: 5 October 1995
- 3) Substance: Unleaded Gasoline
- 4) Quantity Released: 30-40 gallons
- 5) Cause: Fuel delivery company overflowed tank during unloading operations.
- 6) Corrective Action Taken: Require pressure-tight filling devices
- 7) Method of Disposal: Evaporation inside of containment area

3. No other significant spills have been reported from these locations or from the other sites managed by this office.

CESWL-CO-RV
SUBJECT: Spill History

4. Please contact Mr. John Balgavy at 968-5008 if you have questions or need additional information.

John C. Balgavy
for C. D. LASSITER
Resident Engineer

**PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX
RUSSELLVILLE**

Facility	Petroleum and Hazardous Substances	Approx. Quantity	Location	On/Off Shore	Spill Prevention Measures
Toad Suck Lock and Dam (Lock and Dam No. 8) Conway, AR	Diesel Aboveground Storage Tank	330 Gal	Lock No. 8 Compound	On	Secondary Containment
	Oil (30W and 10W30)	55 Gal	Grease Storage Building	On	Sorbents
	Hydraulic Oil	55 Gal	Lockwall Pier #1	Off	Sorbents
	Lubrication Engineer Grease	7 Gal	Grease Storage Building	On	Sorbents
	EP0 & EP1 Grease	30 Gal	Grease Storage Building	On	Sorbents
	Keystone Grease	5 Gal	Grease Storage Building	On	Sorbents
	Used Oil	35 Gal	Lockwall Pier #1	Off	Sorbents
	Antifreeze	13 Gal	Grease Storage Building	On	Sorbents
	Paint	35 Gal	Grease Storage Building	On	Sorbents
	Solvent	5 Gal	Grease Storage Building	On	Sorbents
	Hydraulic Fluid	3,600 Gal	Lock System	Off	System Inspected Daily

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SWLR 200-1-1
25 Sep 97

**PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX
RUSSELLVILLE**

Facility	Petroleum and Hazardous Substances	Approx. Quantity	Location	On/Off Shore	Spill Prevention Measures
Toad Suck Lock and Dam (Lock and Dam No. 8) Office, Conway, AR (Continued)	Gasoline	15 Gal	Grease Storage Building	On	Secondary Containment
	Mineral Spirits	12 Gal	Grease Storage Building	On	Secondary Containment
	Oil (90 wt)	5 Gal	Shop Cabinet	On	Sorbents
	Oil (2 cycle outboard)	1 Gal	Shop Cabinet	On	Sorbents
	Transmission Oil (Dexron II)	4 Gal	Grease Storage Building	On	Sorbents
	Oil (Pump)	2 Gal	Shop Cabinet	On	Sorbents
	Oil (Lubrication Engineers Oil (Red Oil))	55 Gal	Lockwall Pier #1	Off	Sorbents
	Used Solvent	30 Gal	Lockwall Pier #1	Off	Sorbents

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