Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

074177
0052106

OCT 25 1999

Mr. Patrick Sobotta
Nez Perce Tribe
P.O. Box 365
Lapwai, Idaho 83540-0365

Dear Mr. Sobotta:

REQUESTED TRITIUM DATA AND MAPS FROM MS. JUDIT GERMAN-HEINS

This letter is in response to a Nez Perce Tribe email message to me from Ms. German-Heins, Environmental Specialist with Environmental Restoration and Waste Management, requesting Hanford Site groundwater data and maps showing the distribution of tritium. The tritium analytical groundwater data from the Hanford Environmental Information System database was transmitted to Ms. German-Heins by email as an Excel file. Enclosed are the requested maps showing the distribution of tritium in the groundwater through time for the Hanford Site.

If you want to discuss this matter further or require additional information, please contact me at (509) 373-9626.

Sincerely,

R. Douglas Hildebrand, Project Manager
Groundwater/Vadose Zone

GWVZ:RDH

Enclosure

cc w/encl:
J. German-Heins
S. Sobczyk, NPT

OCT 2 5 1999

Subject Code: OU/8960
Written Response Required: NO
Closes CCN: N/A
OU: Groundwater/Vadose Zone
TSD: N/A
ERA: N/A
Project: Yes

074177

Mr. Patrick Sobotta
Nez Perce Tribe
P.O. Box 365
Lapwai, Idaho 83540-0365

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Sincerely,

RD Hildebrand

R. Douglas Hildebrand, Project Manager
Groundwater/Vadose Zone

GWVZ:RDH

Enclosure

RECEIVED
OCT 2 7 1999
DOE-RL/DIS

cc w/encl:
J. German-Heins
S. Sobczyk, NPT

bcc: OFF File
GWVZ Rdg File

RD Hildebrand, GWVZ
WW Ballard, A5-12

Record Note: None.

RECORD-COPY

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Office >	AMI RDH	OCC	OEA	AMI RDH		
Surname >	HILDEBRAND	CARPENTER	RANDOLPH	HILDEBRAND		
Date >	10-18-99	10/19/99	10/22/99	10-25-99		

(Please return to Cindy Anderson 6-6559 HQ-12/3350GWW/2D54 FAX 6-4360)

Document No. 15475

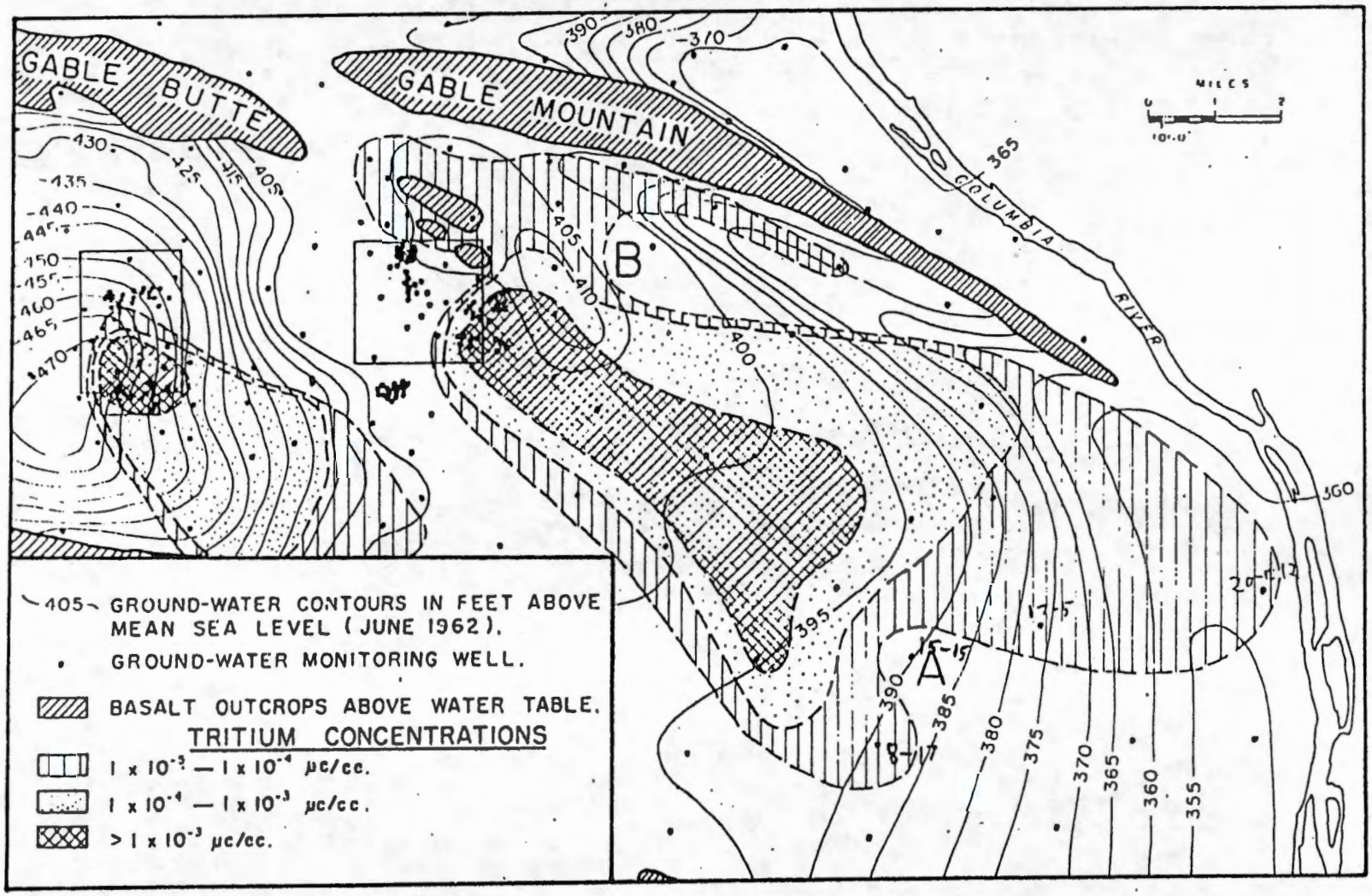


FIGURE 2.

Probable Extent Of Ground Water Tritium Contamination

January-June 19

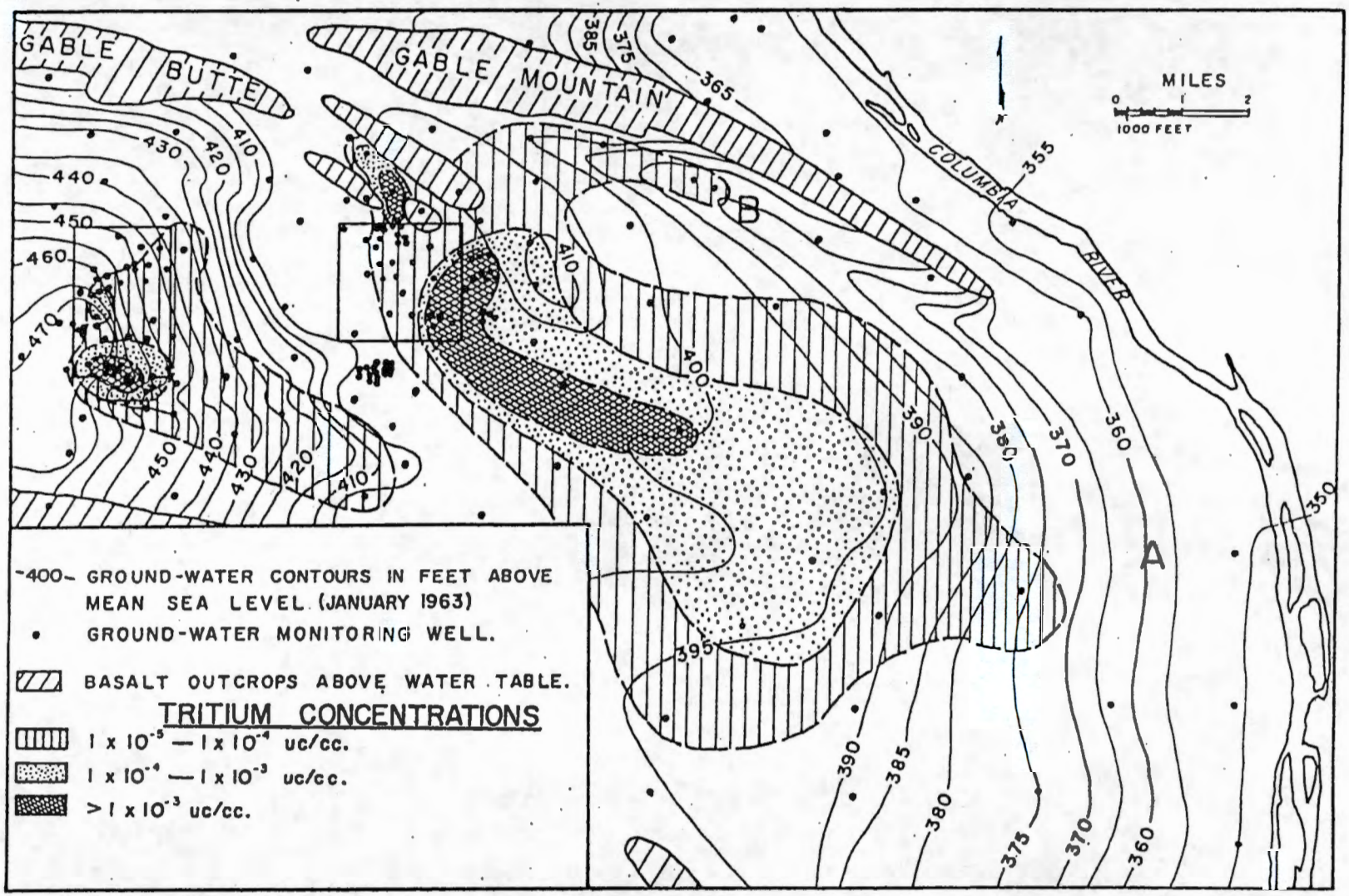


FIGURE 2.

Probable Extent Of Ground Water Tritium Contamination

July - Dec. 1962

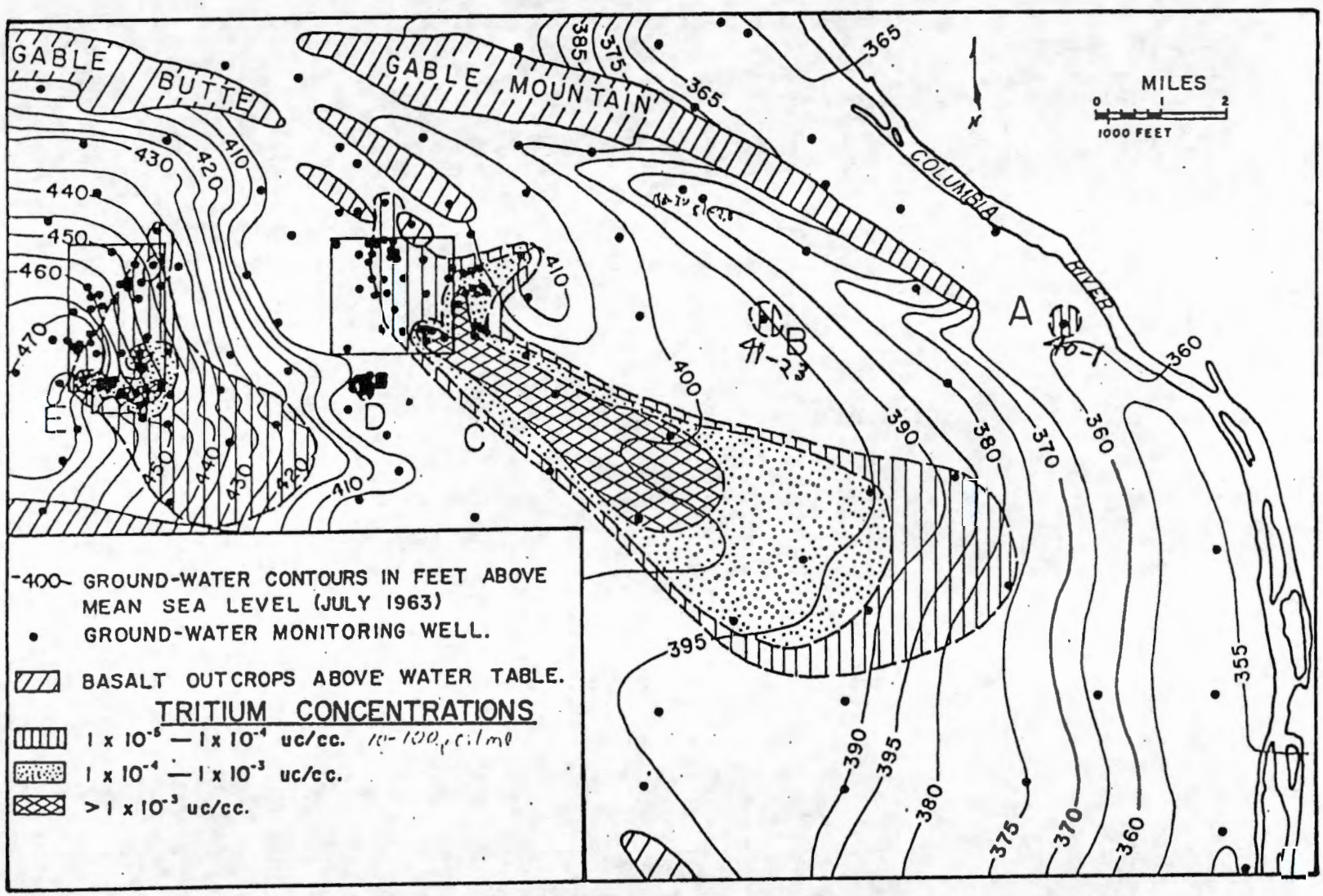


FIGURE 2.
Probable Extent Of Ground Water Tritium Contamination January - June, 1963

Disposal investigation January - June 1963

AEC-GE RICHLAND, WASH.

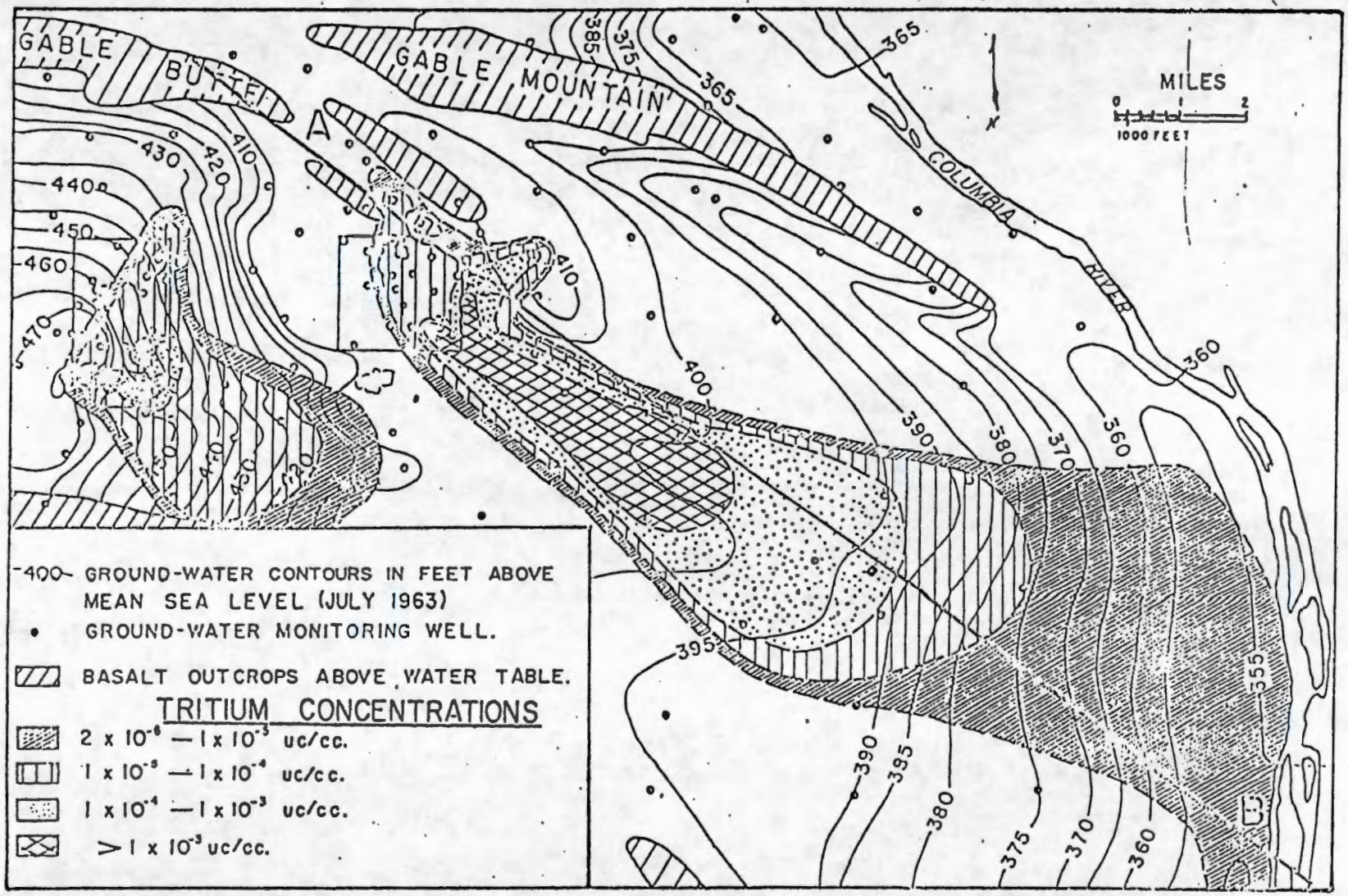


FIGURE 5

Extent of Ground Water Tritium Contamination July - December, 1963

disposal invest July - Dec 1963

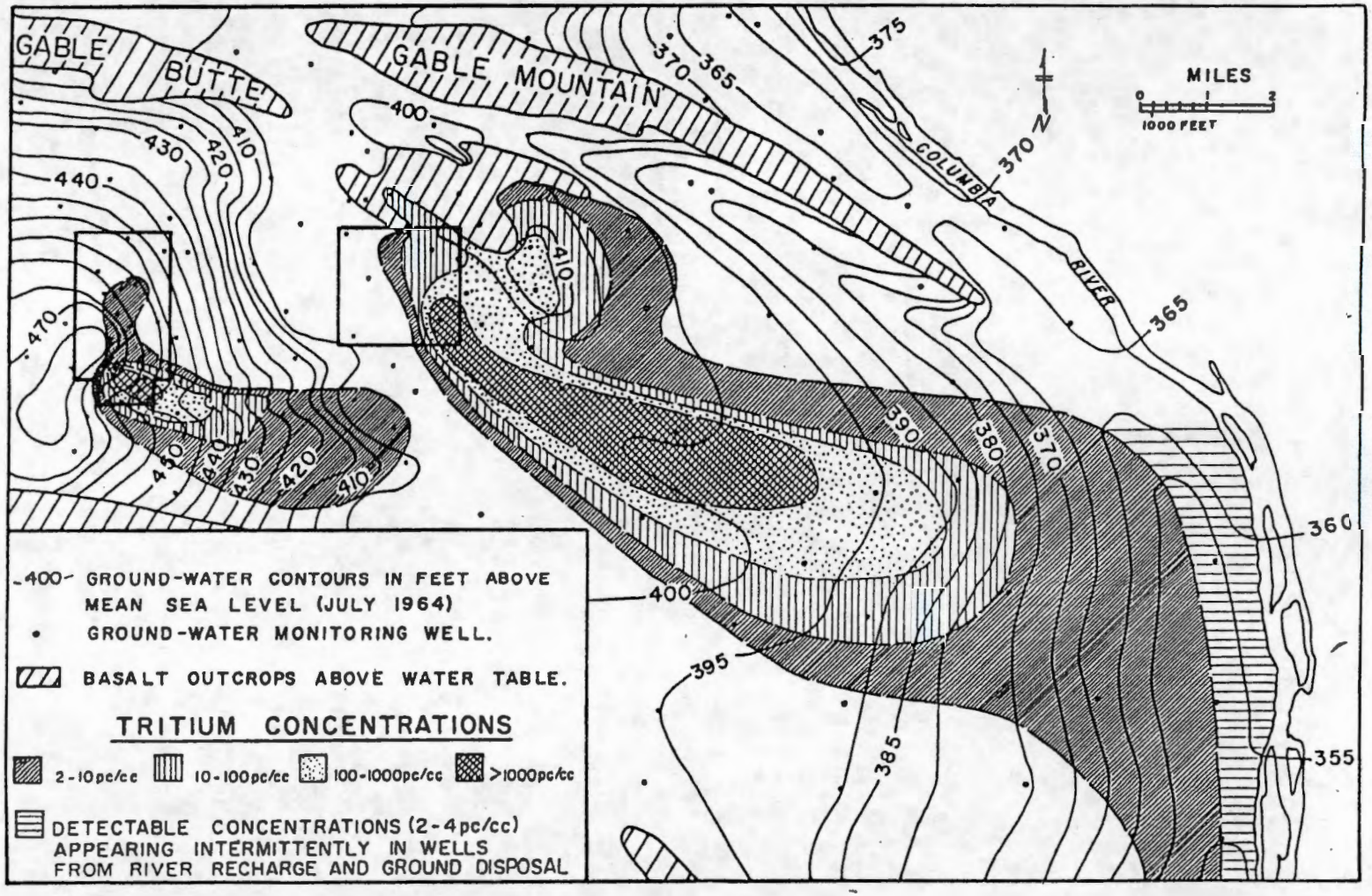


FIGURE 2

Extent of Ground Water Tritium Contamination January - December, 1964

Proposal unused
Jan-Dec 1964

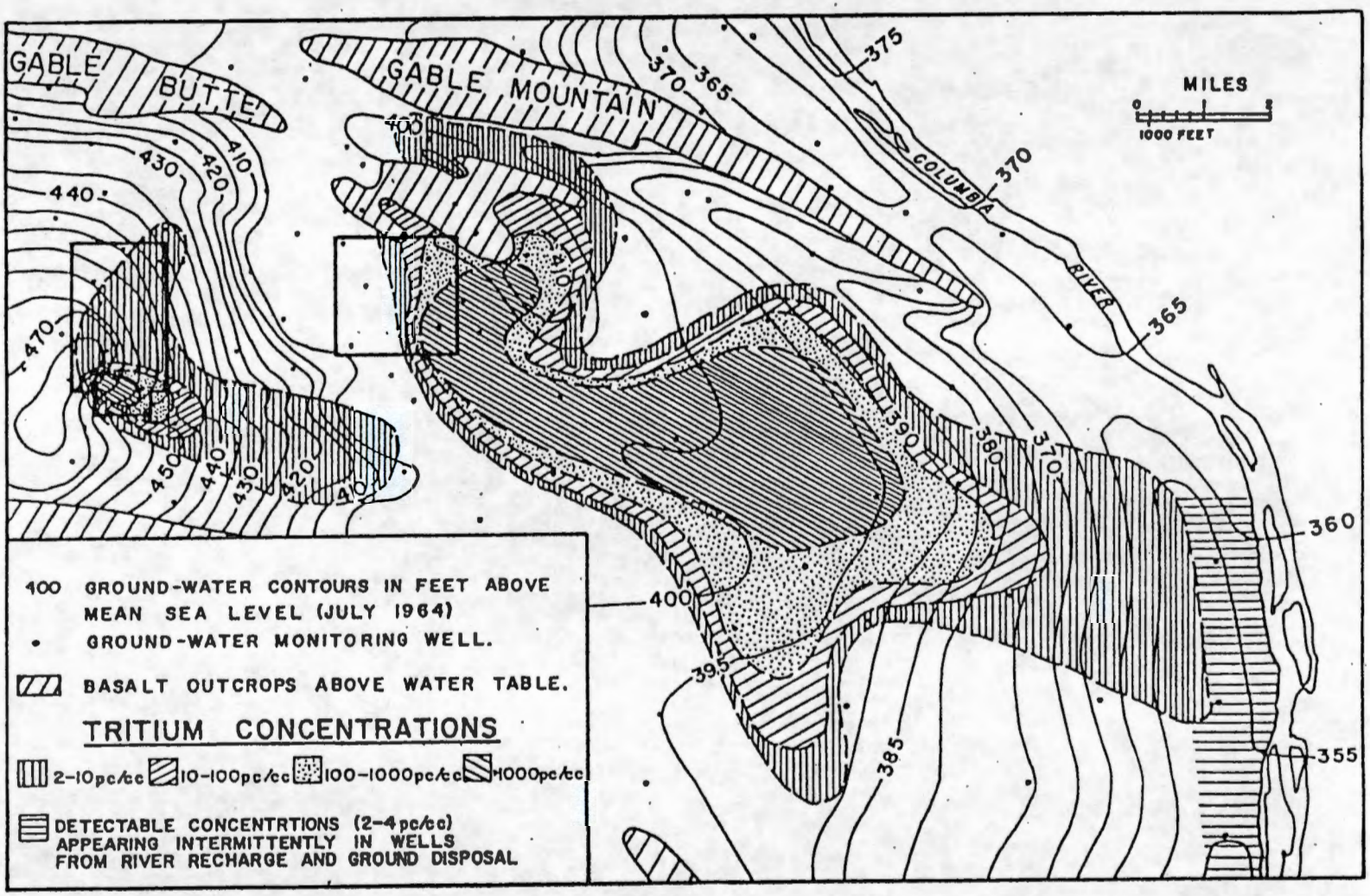
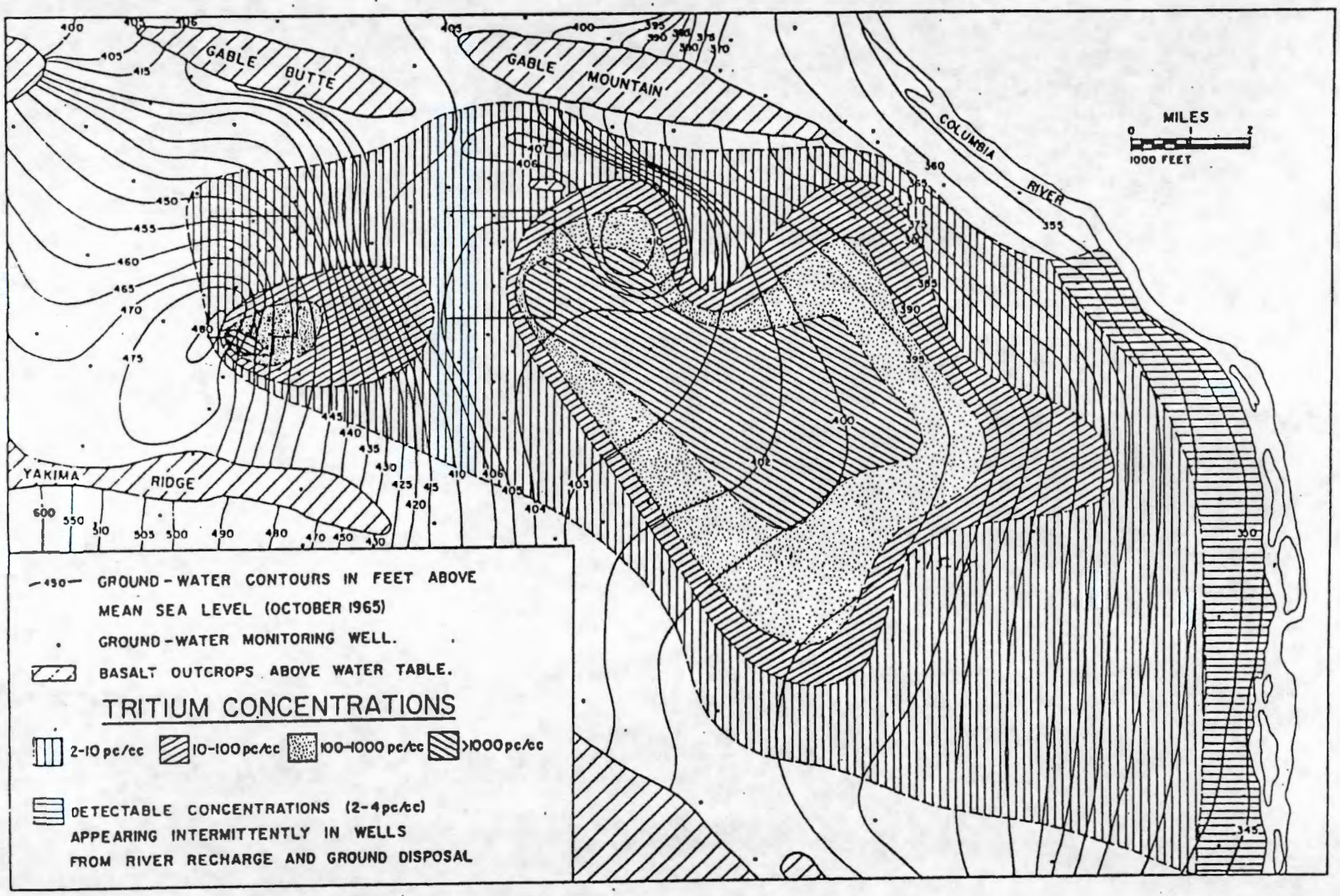


FIGURE 2.

Extent Of Ground Water Tritium Contamination, January - June 1965

January - June 1965
Disposal invest.



July - December 1965

FIGURE 2

EXTENT OF GROUND WATER TRITIUM CONTAMINATION

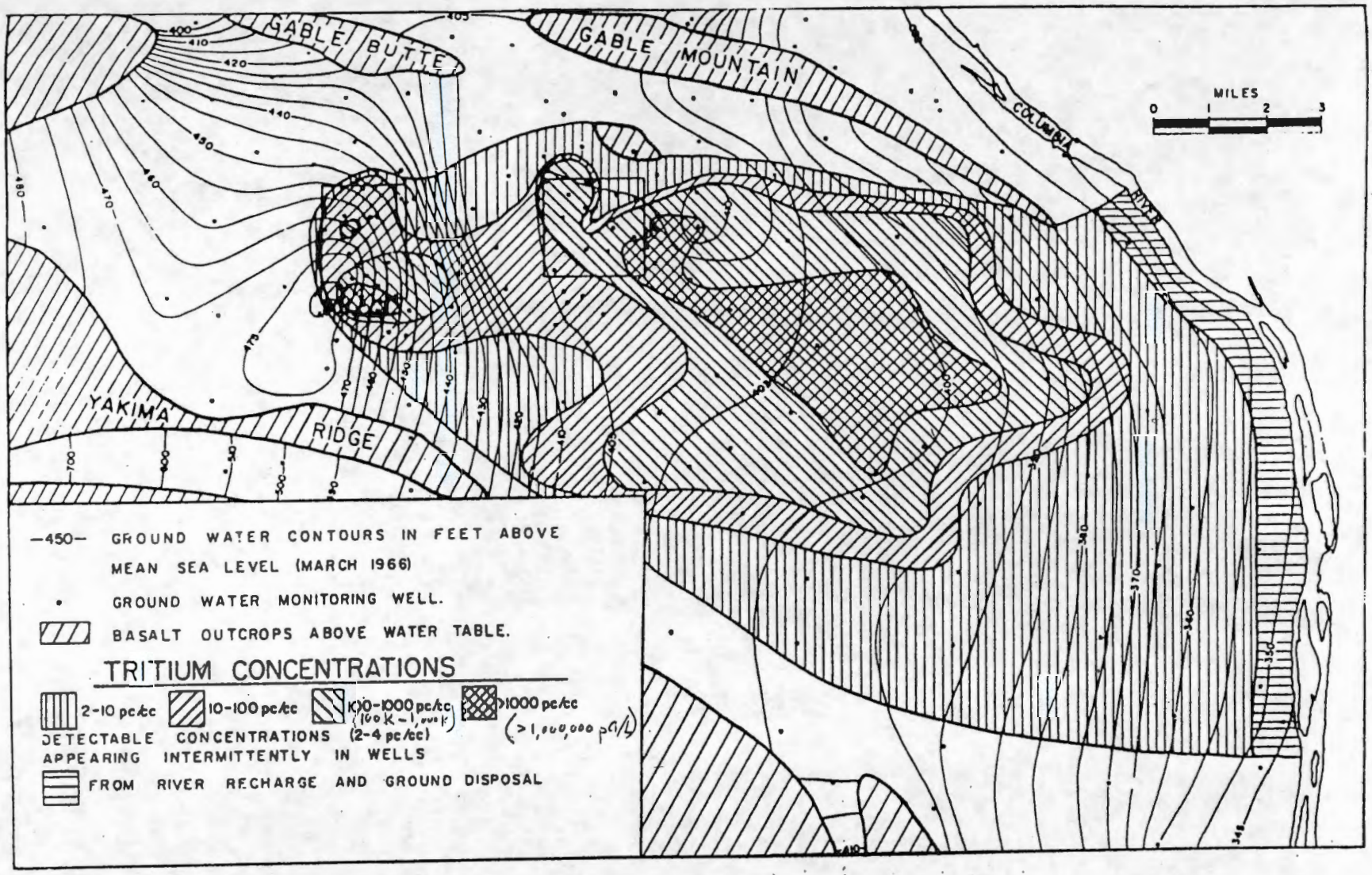


FIGURE 2

Extent of Ground Water Tritium Contamination, July-December, 1966

Earth Science
Waste disposal invest

BNWL-687
January-June 1967

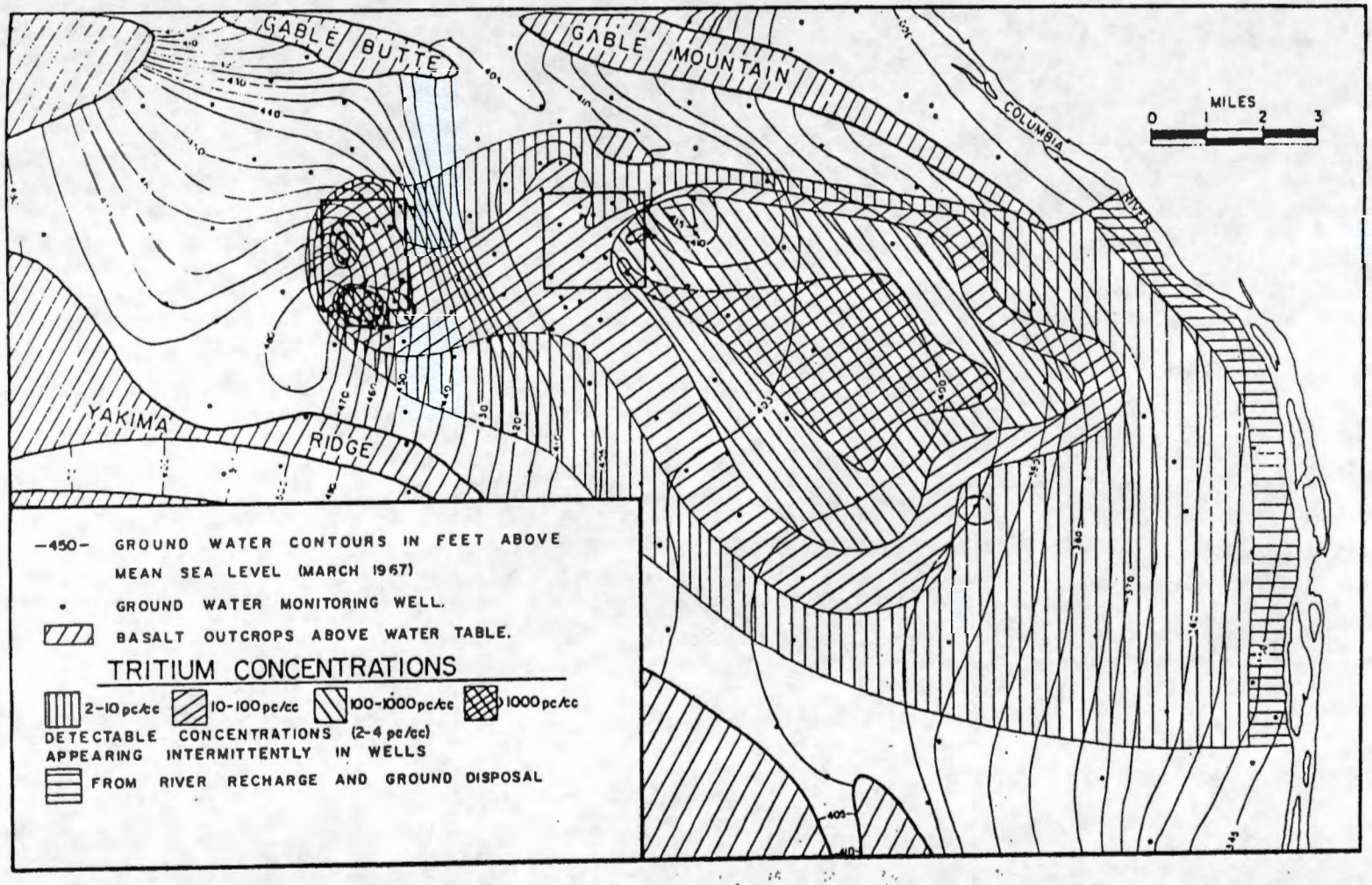


Figure 2

Extent of Ground Water Tritium Contamination, January-June, 1967

Jan-Jun 1967
Earth Sci waste

July-Dec. 1967

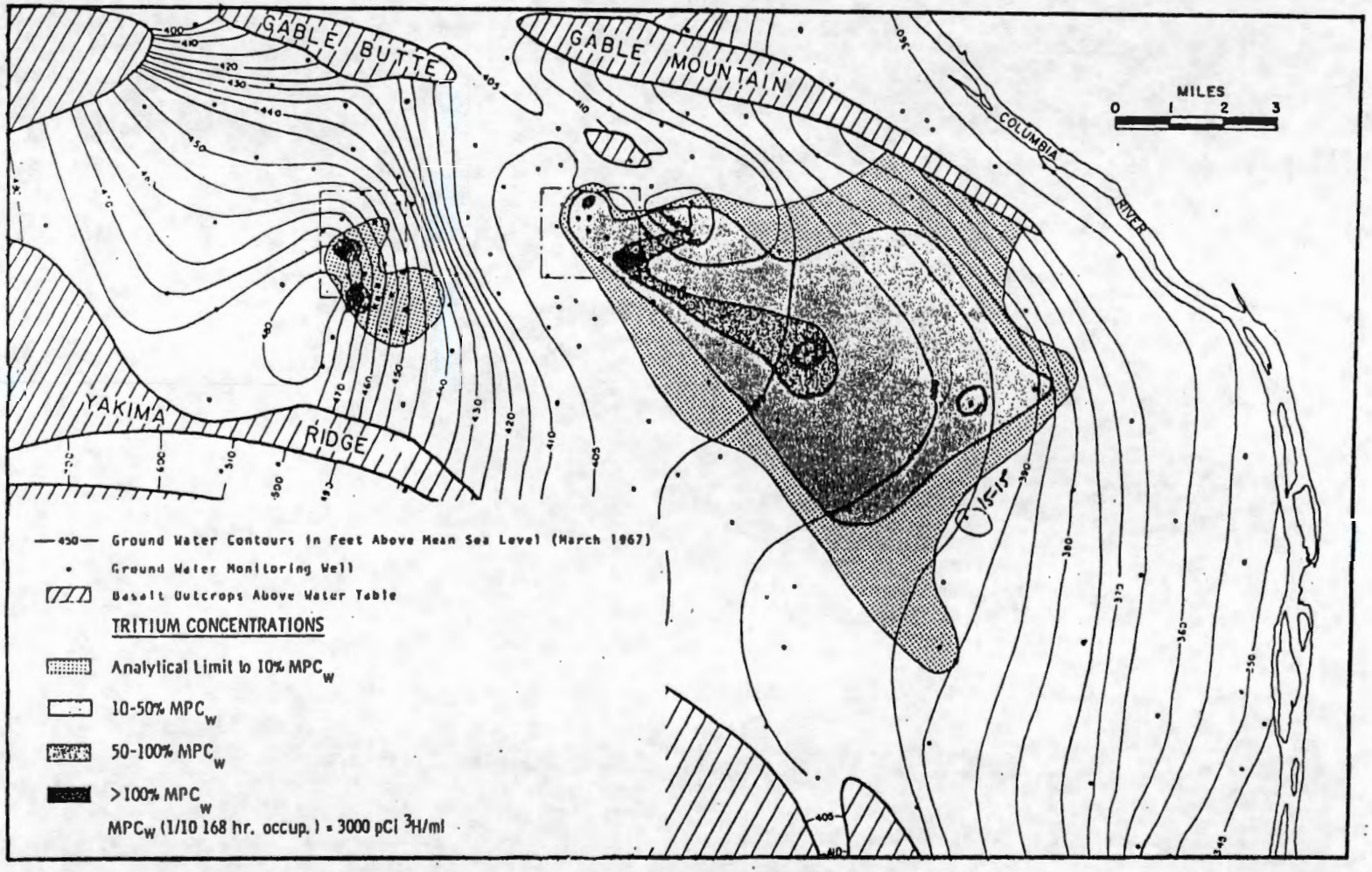
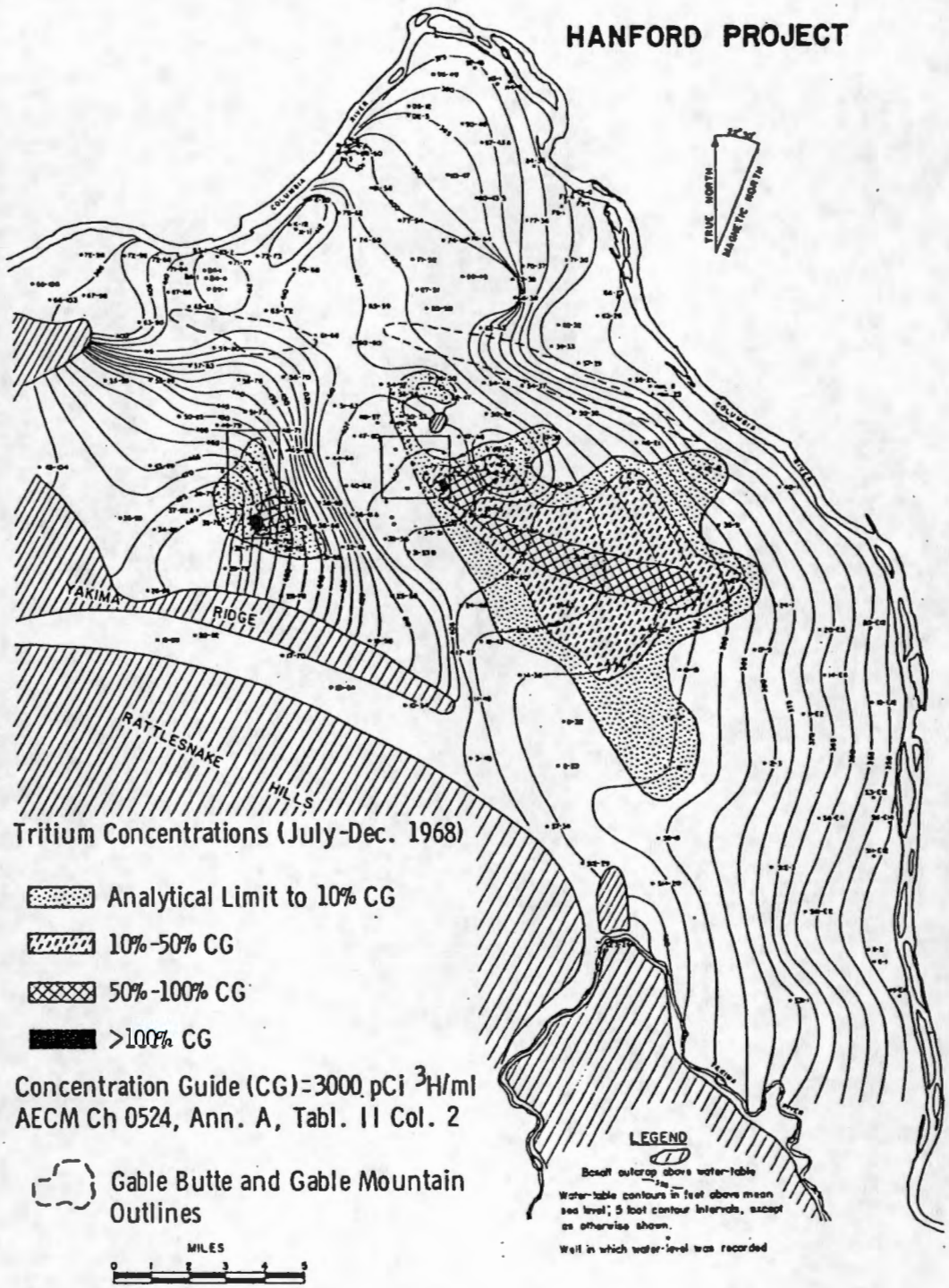


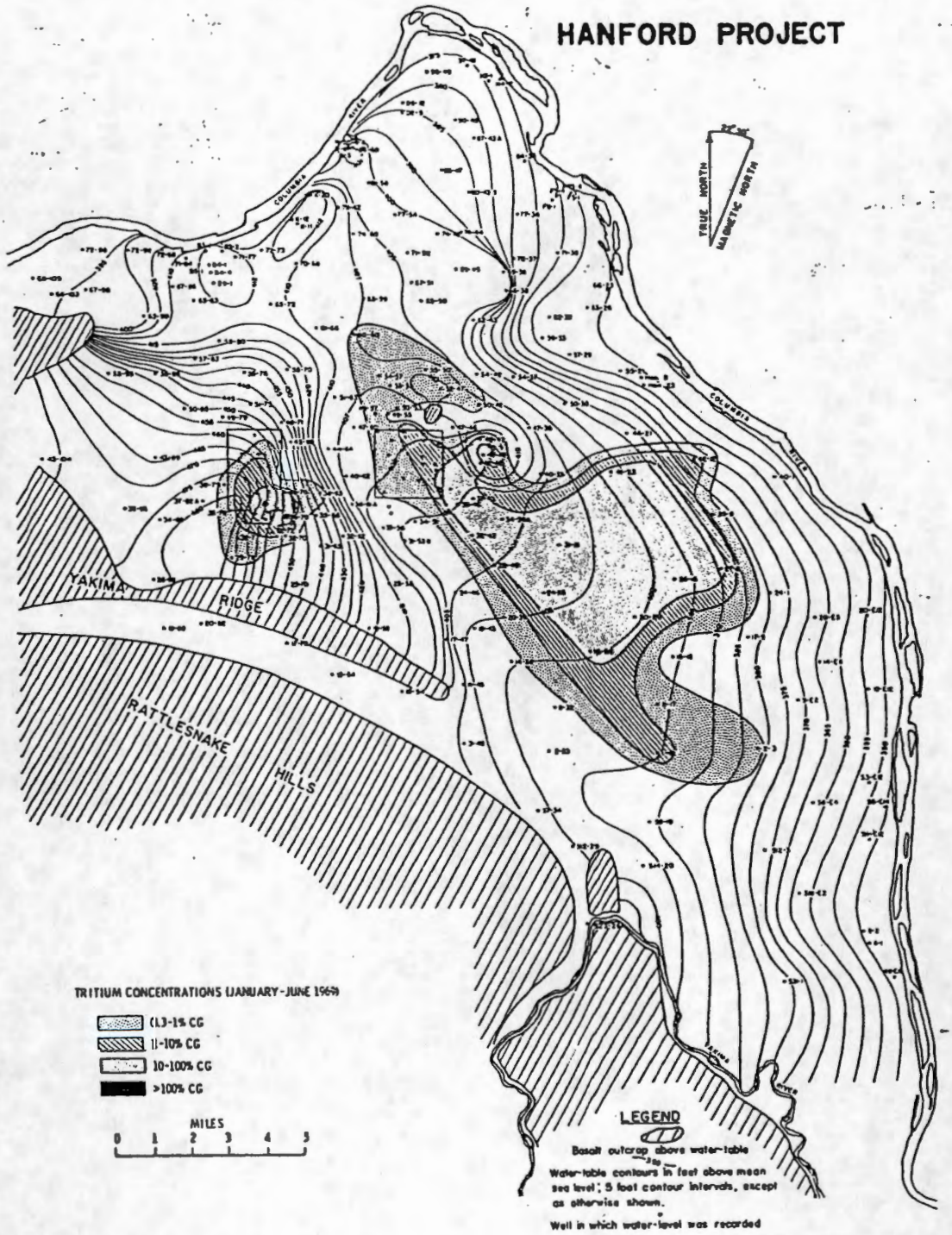
FIGURE 2
Tritium Concentrations Beneath the Hanford Project



Neg 0691320-2

FIGURE 2. Tritium Concentrations Beneath the Hanford Project

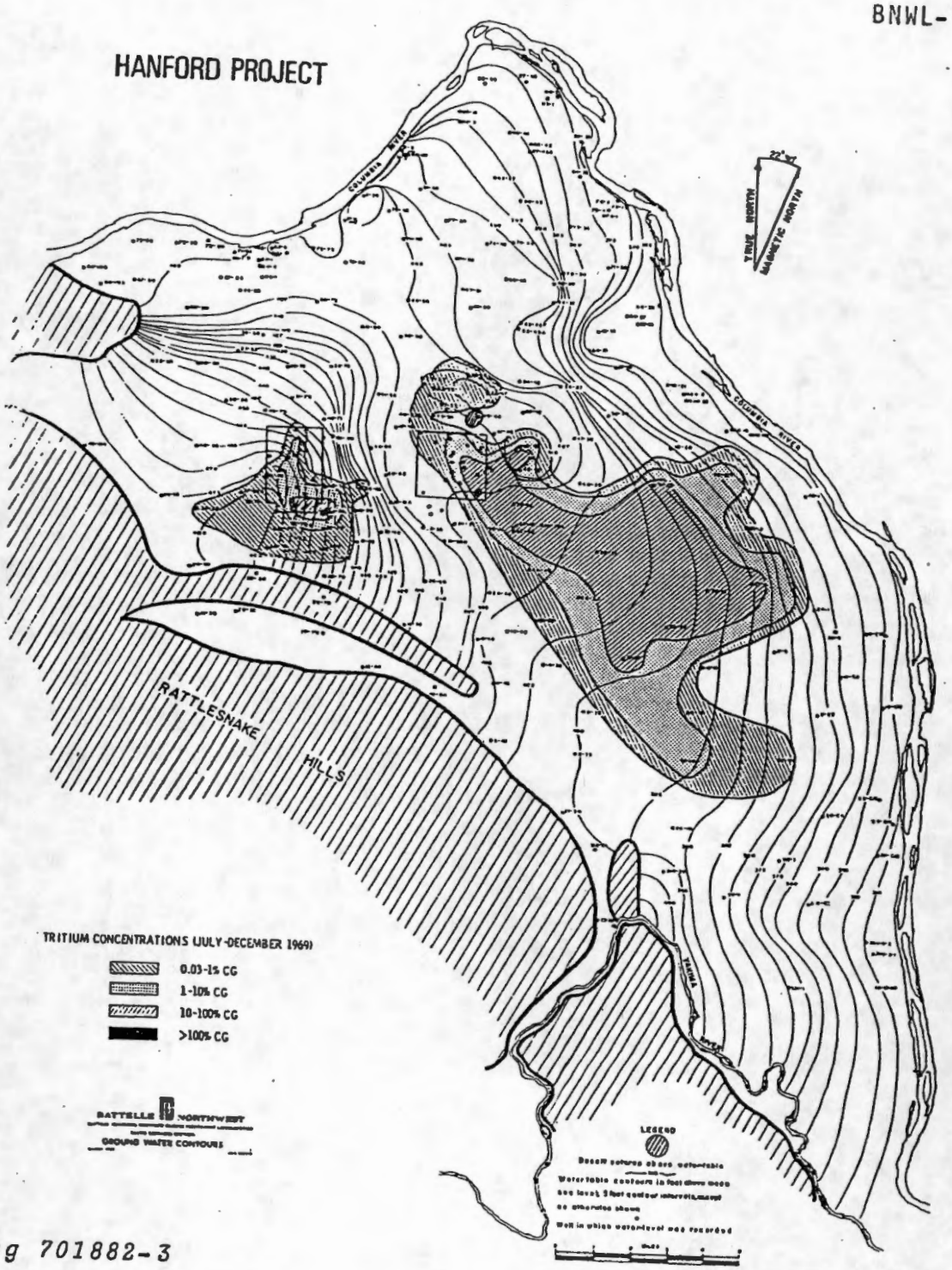
GW report
July-Dec 1968



Neg 0694351-2

FIGURE 2. Tritium Concentrations Beneath the Hanford Project Expressed as Percent of ^3H Concentration Guide (3000 pCi/ml)

GW Report
Jan-Jun 1969



Neg 701882-3

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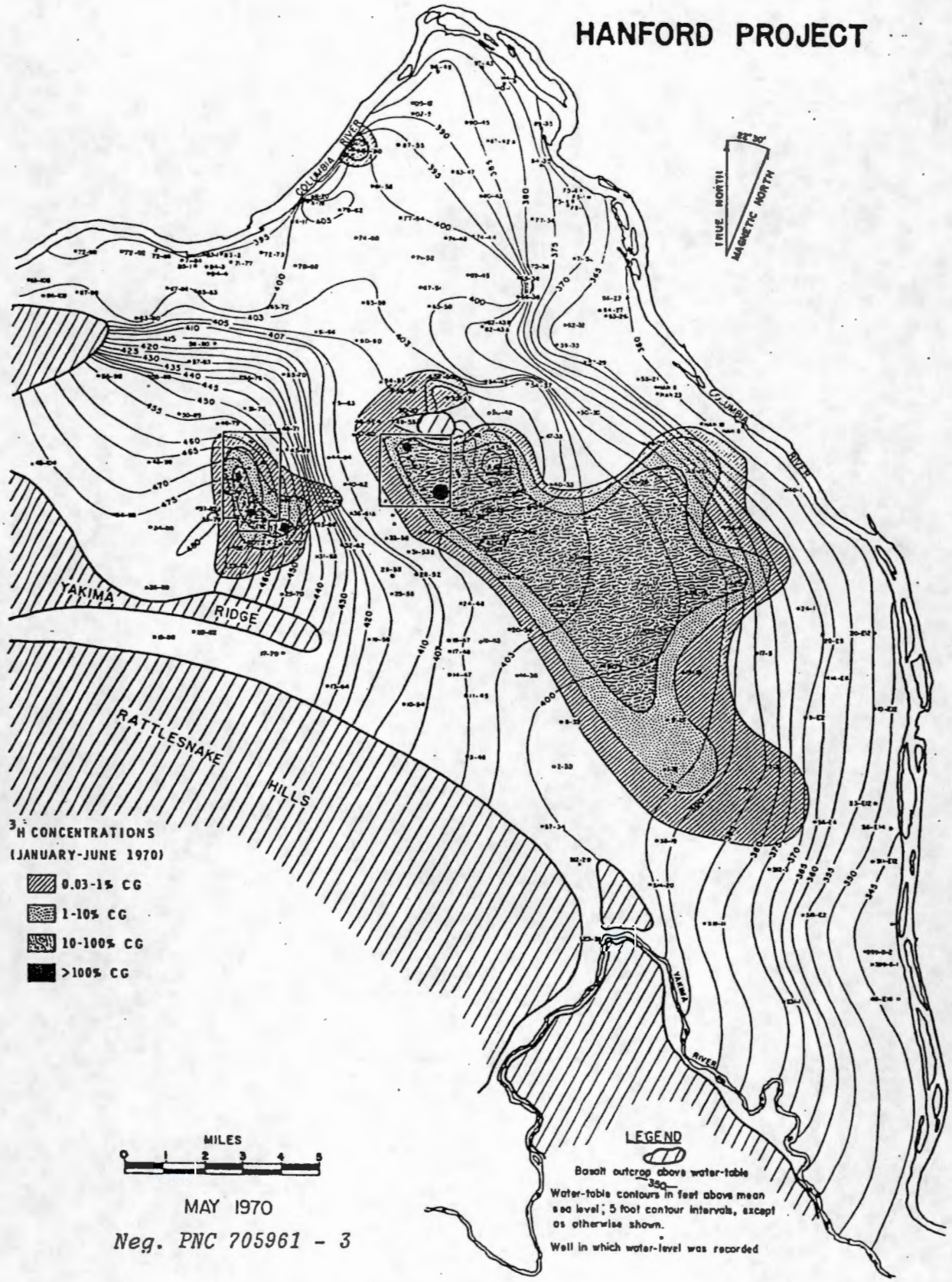
GW Report
July Dec 1969



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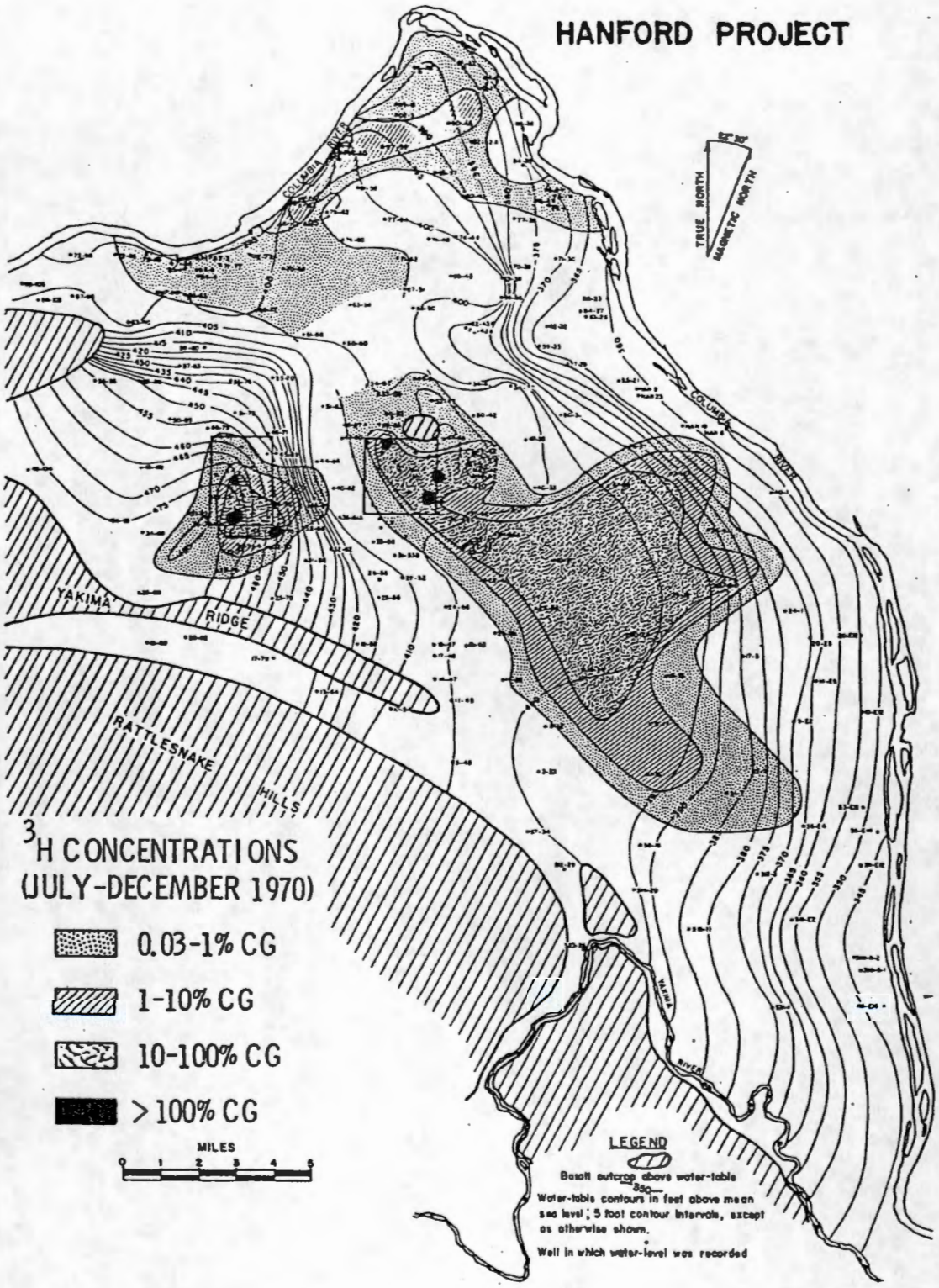
GW report



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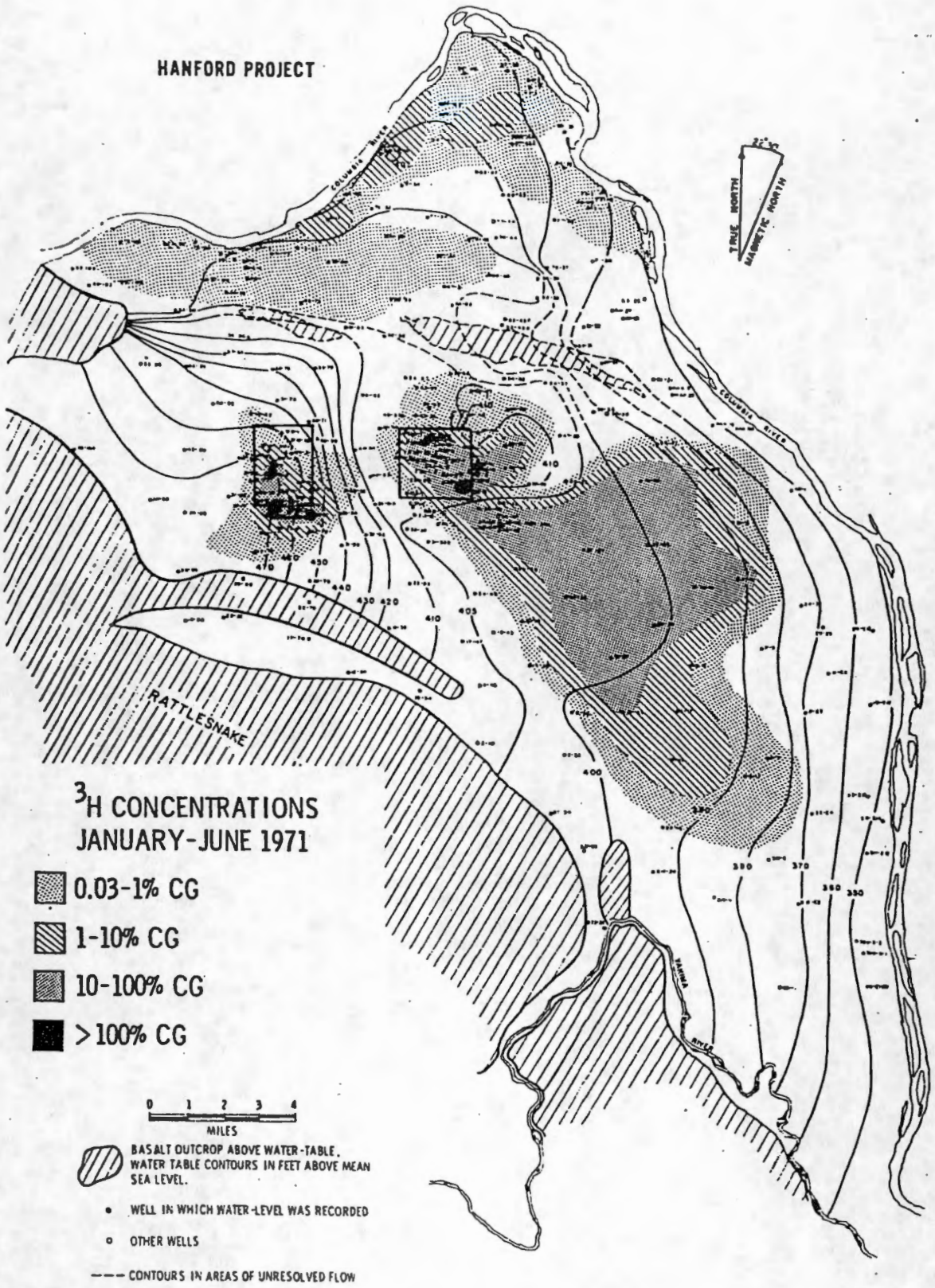
Jul Dec 1970
GW report



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Jan-July 1971
GW report

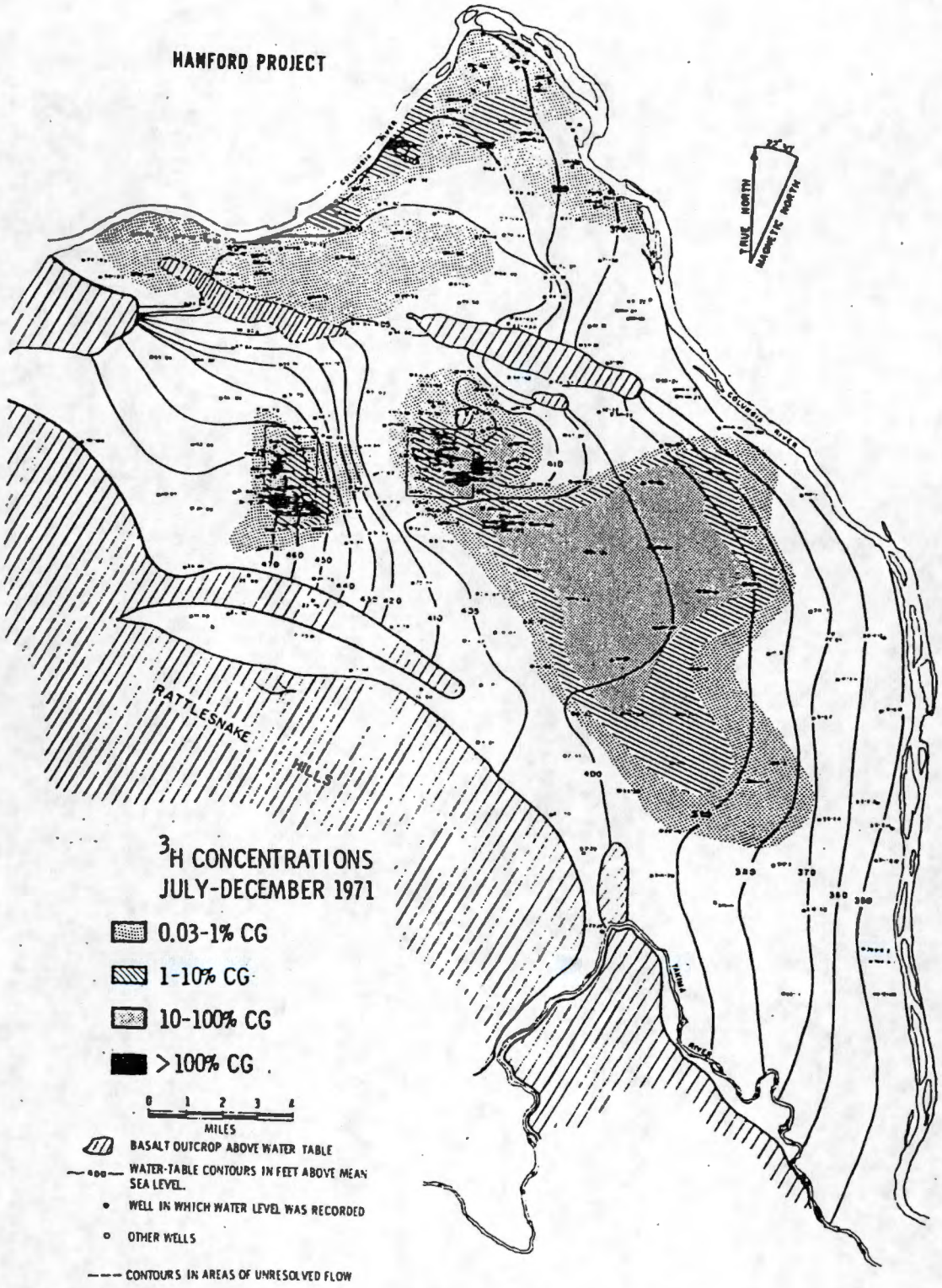


FIGURE 2

July Dec 1971
GW report

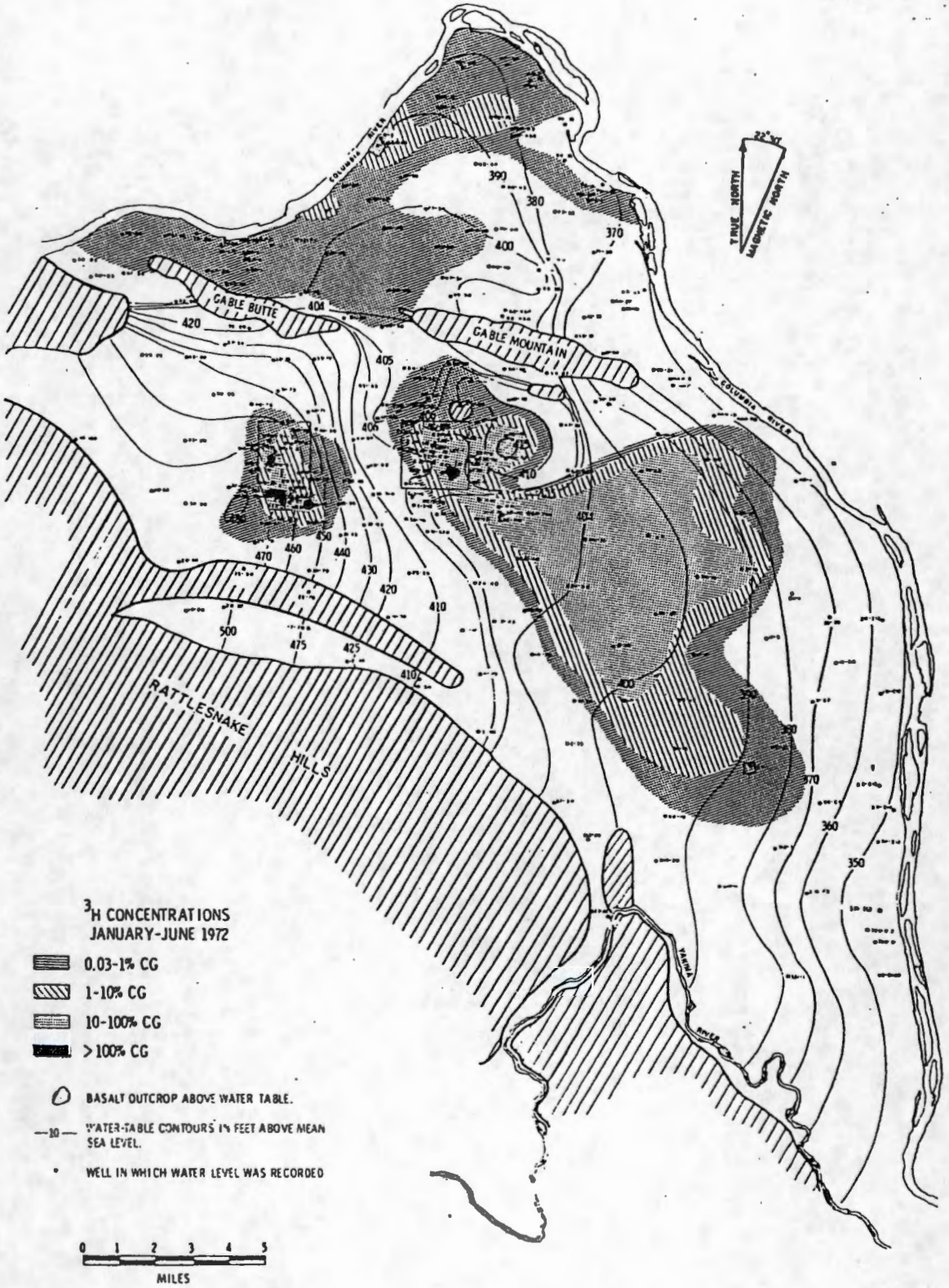


FIGURE 2.

Jan - Jun 1972
GW report

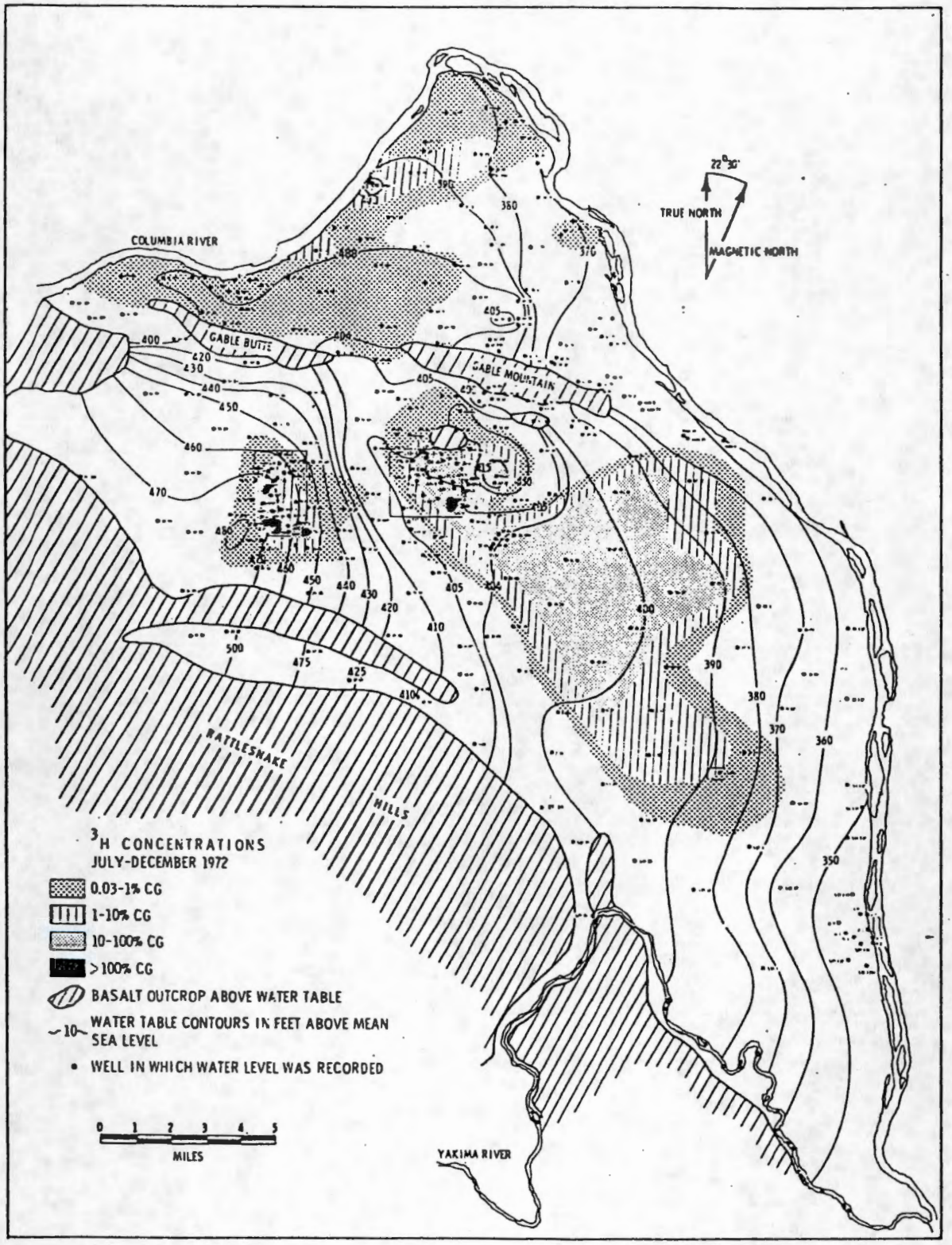


FIGURE 2. July - Dec. 1972

GW report

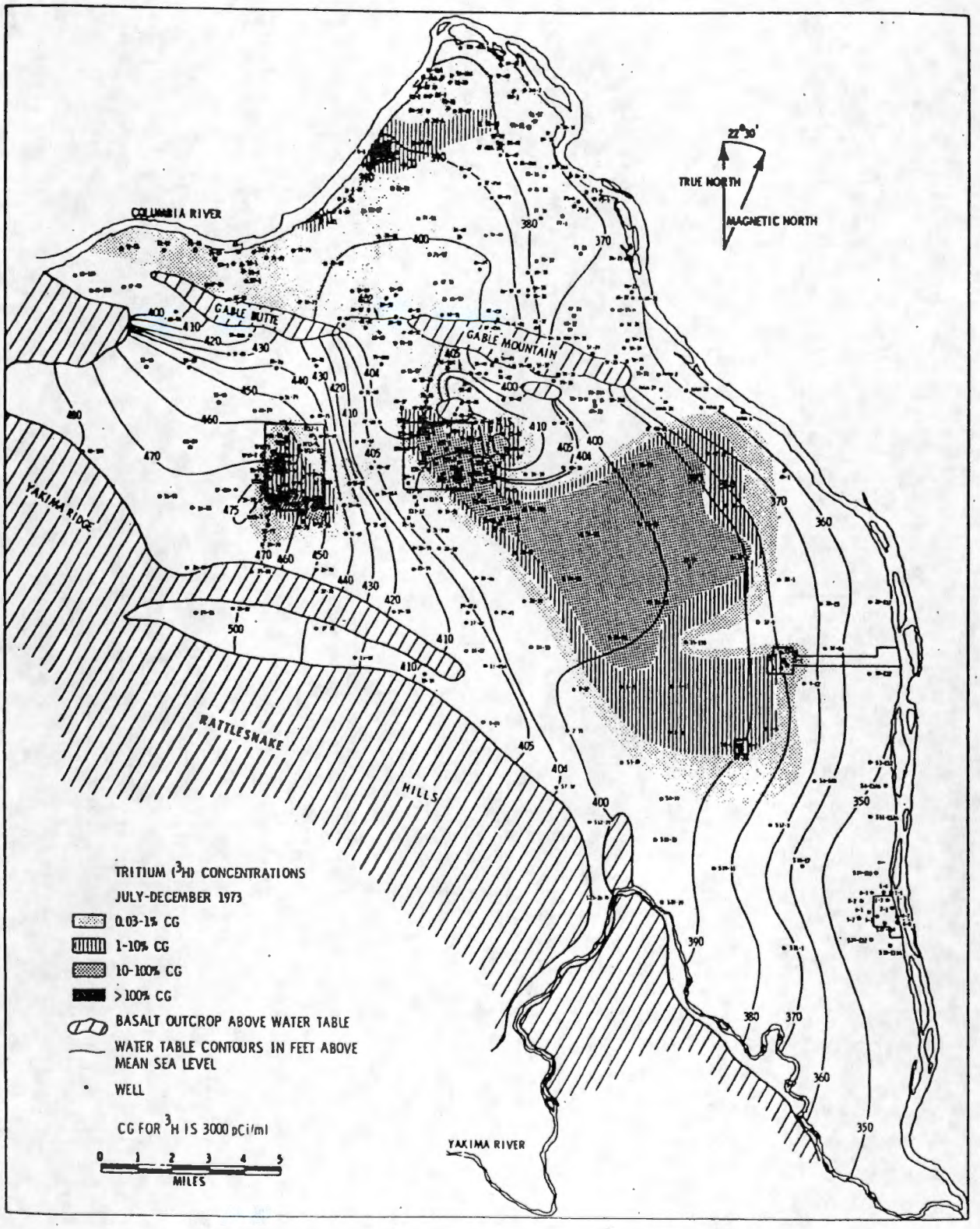


FIGURE 4. Tritium (^{3}H) Concentrations July-December 1973

GW report

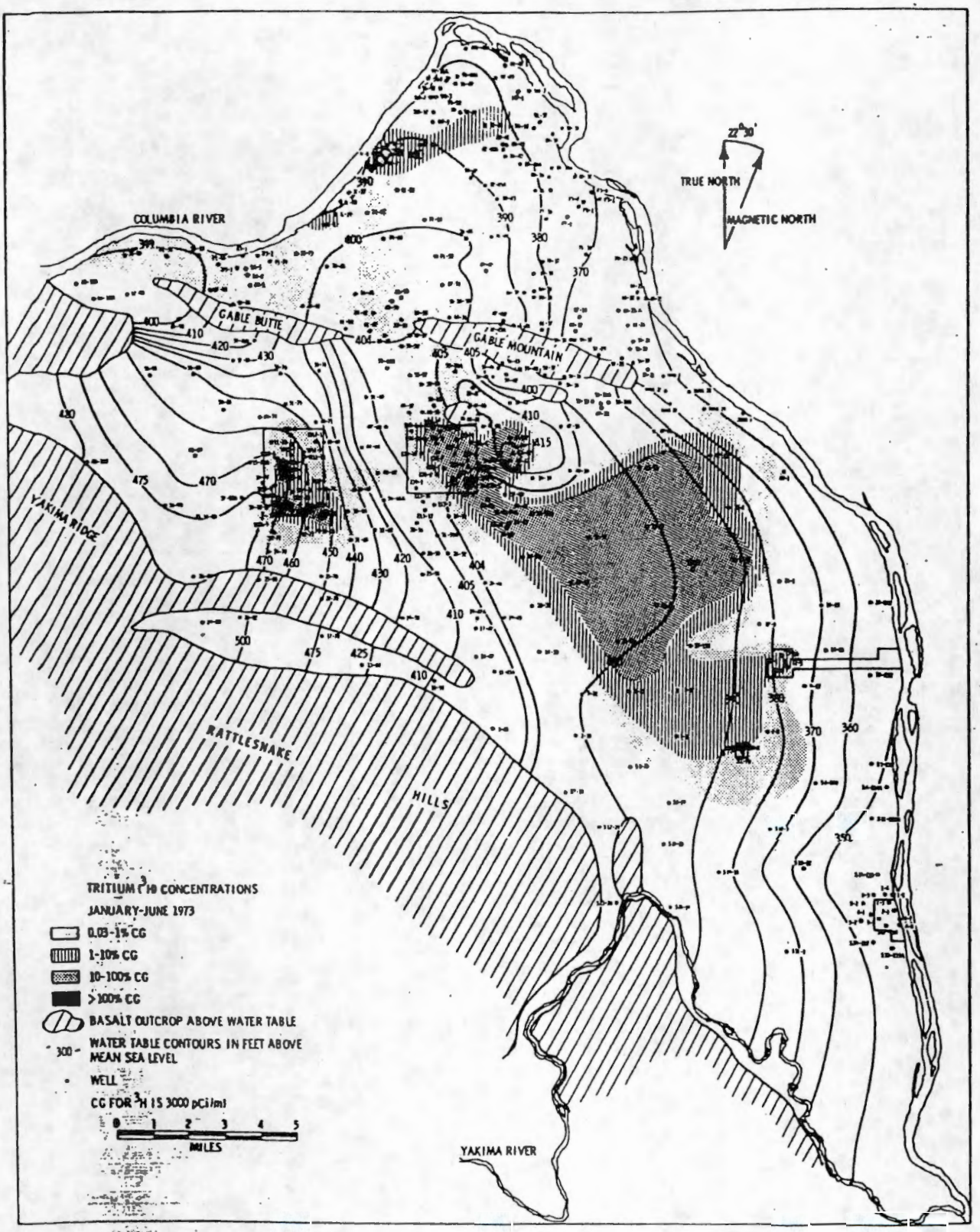
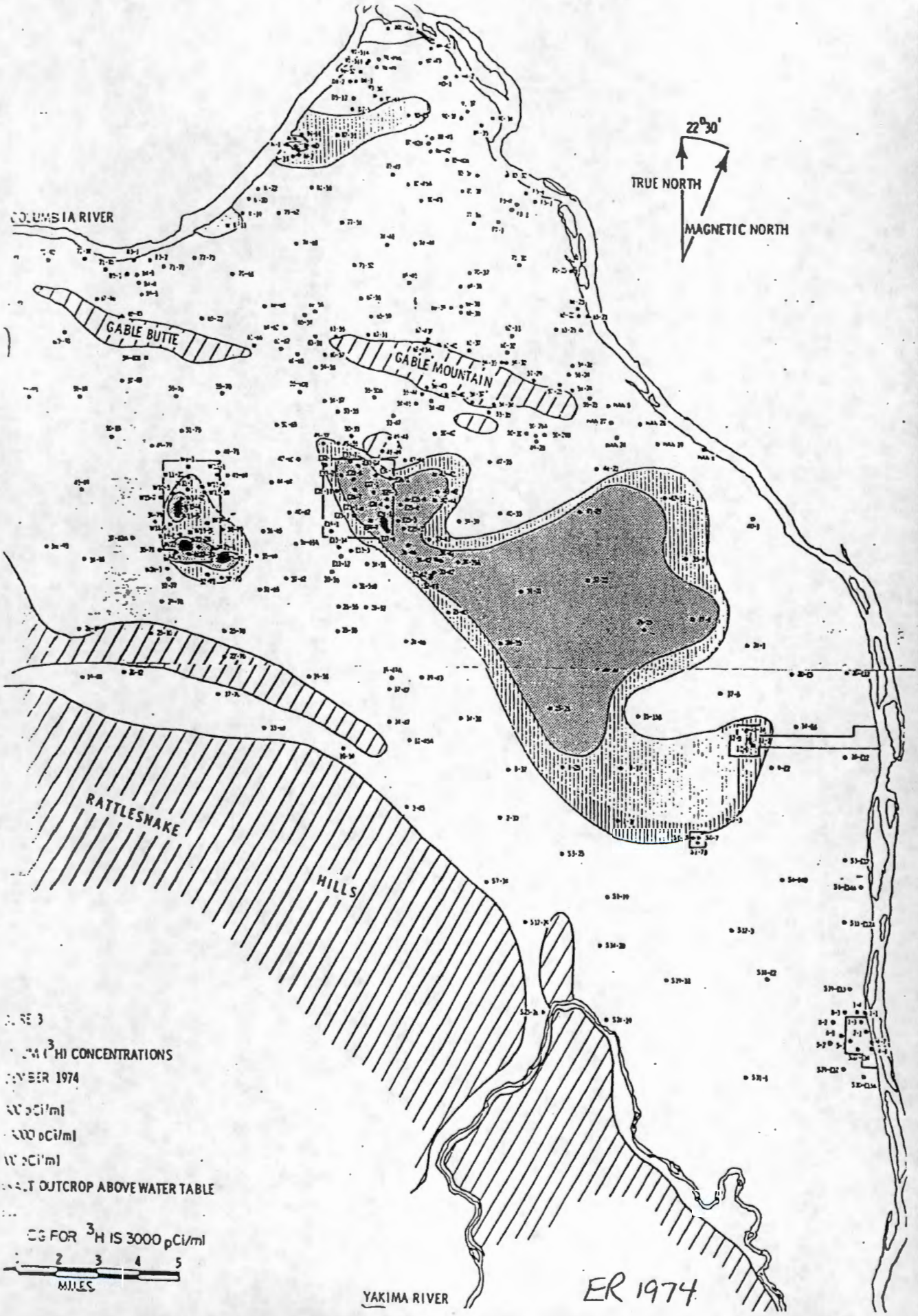
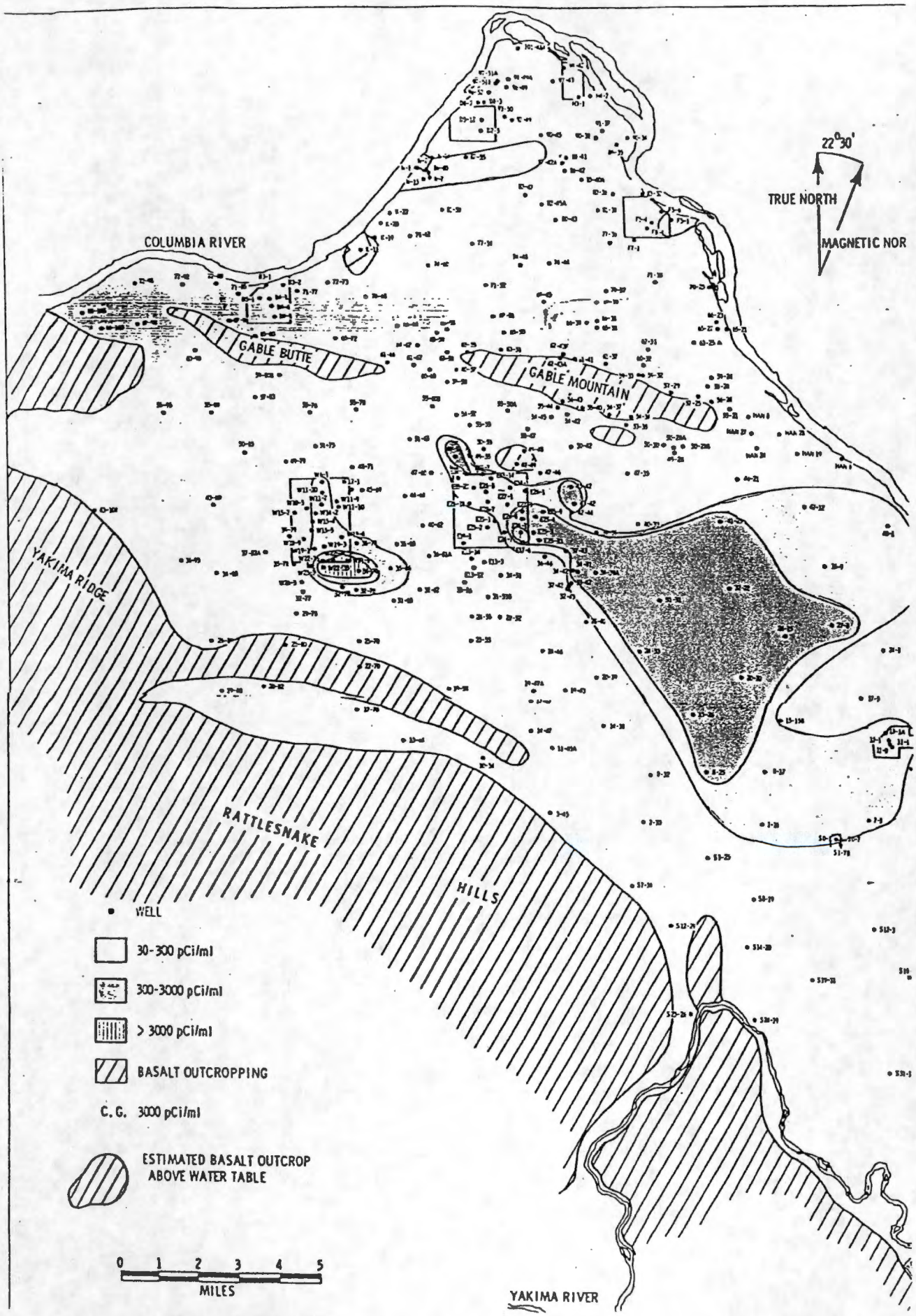


FIGURE 3. Tritium (^{3}H) Concentrations January-June 1973

GW report



COLUMBIA RIVER
22°30'
TRUE NORTH
MAGNETIC NORTH
GABLE BUTTE
GABLE MOUNTAIN
RATTLESNAKE
HILLS
YAKIMA RIVER
CONCENTRATIONS
1974
pCi/ml
pCi/ml
pCi/ml
OUTCROP ABOVE WATER TABLE
FOR ^{3}H IS 3000 pCi/ml
2 3 4 5
MILES
ER 1974


22°30'
TRUE NORTH
MAGNETIC NOR
COLUMBIA RIVER
GABLE BUTTE
GABLE MOUNTAIN
YAKIMA RIDGE
RATTLESNAKE
HILLS
WELL
30-300 pCi/ml
300-3000 pCi/ml
> 3000 pCi/ml
BASALT OUTCROPPING
C. G. 3000 pCi/ml
ESTIMATED BASALT OUTCROP
ABOVE WATER TABLE
0 1 2 3 4 5
MILES
YAKIMA RIVER

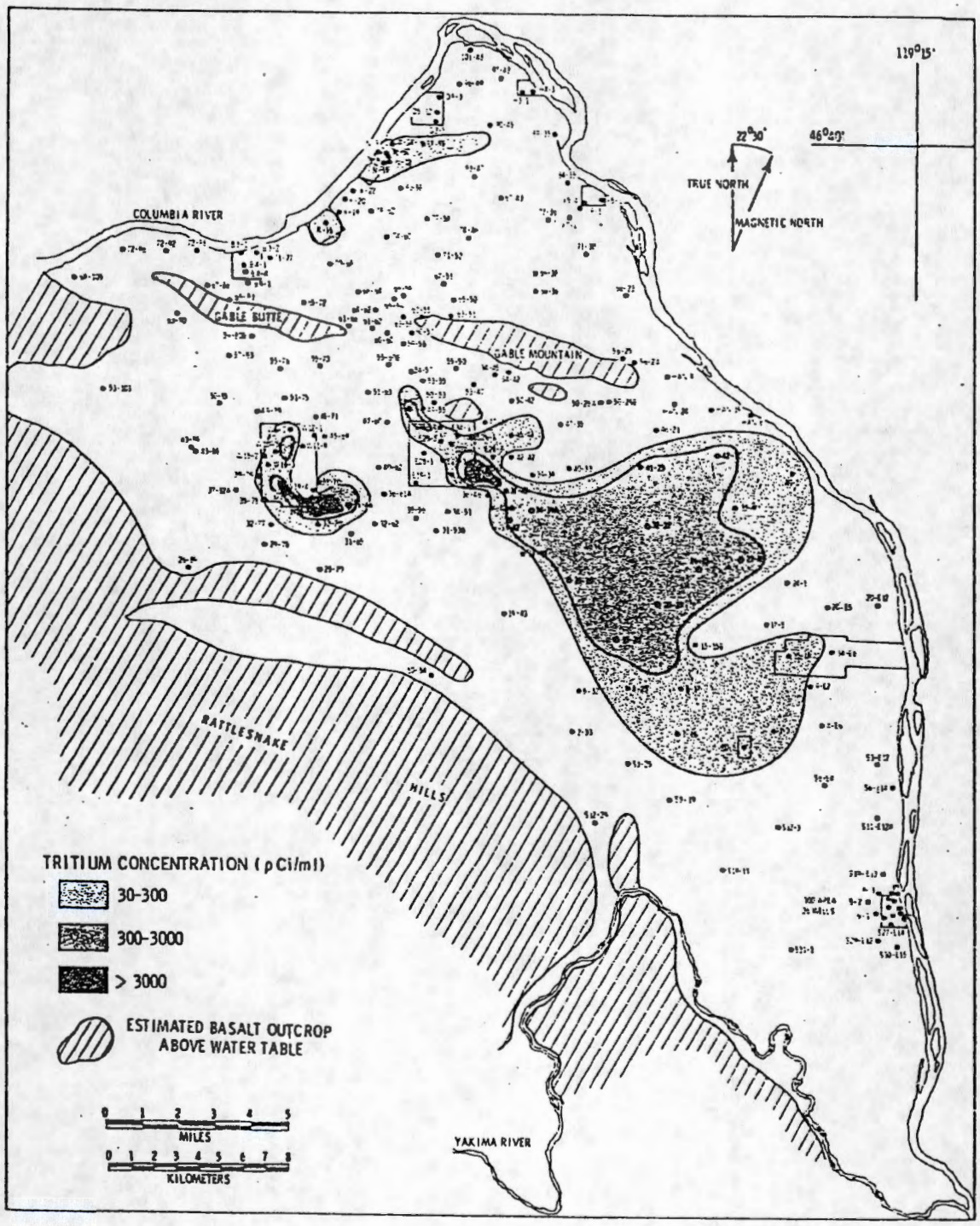


FIGURE 5. Tritium Distribution in Unconfined Ground Water

ER 1976

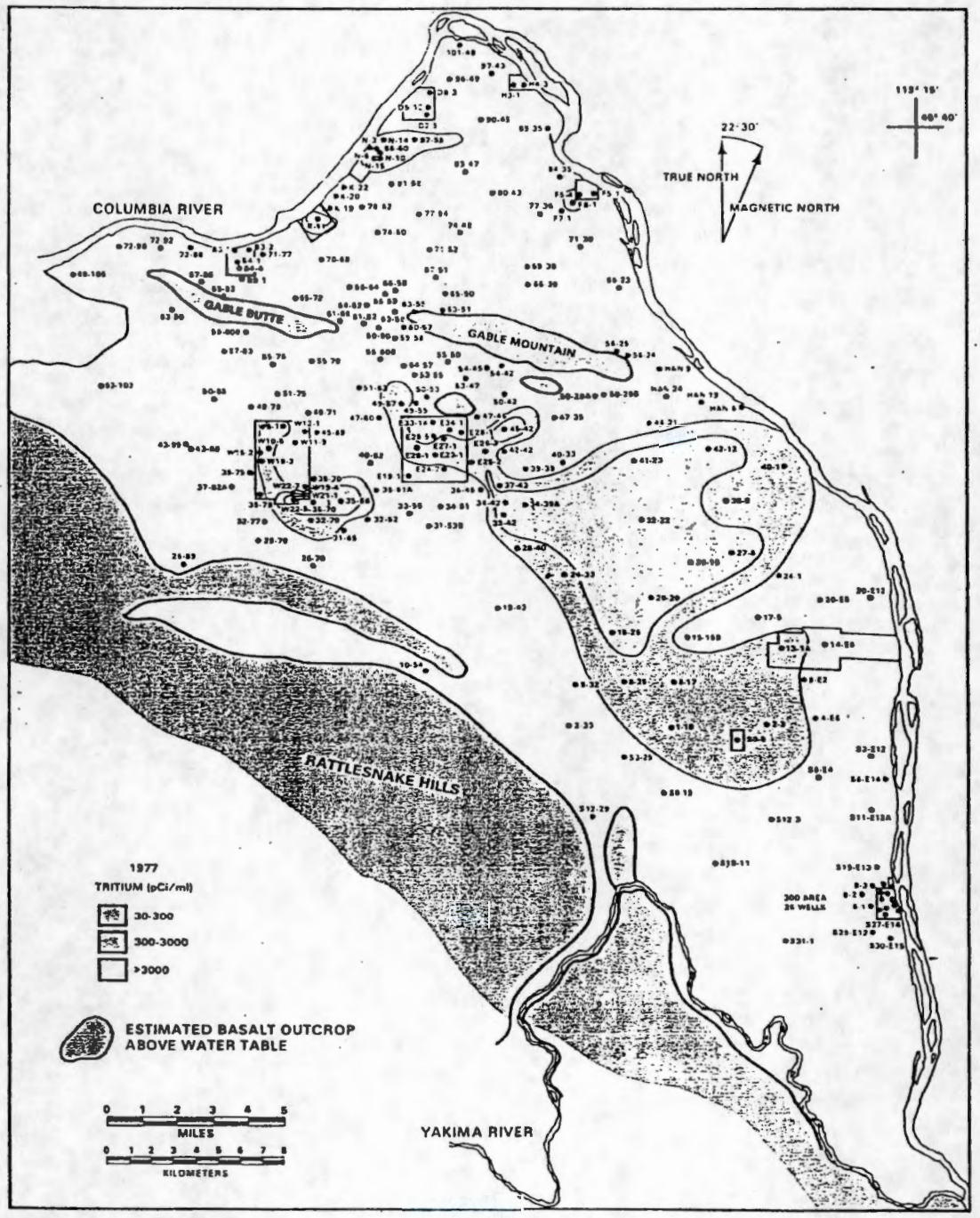


FIGURE 6. Tritium Distribution in Unconfined Ground Water

ER 1977

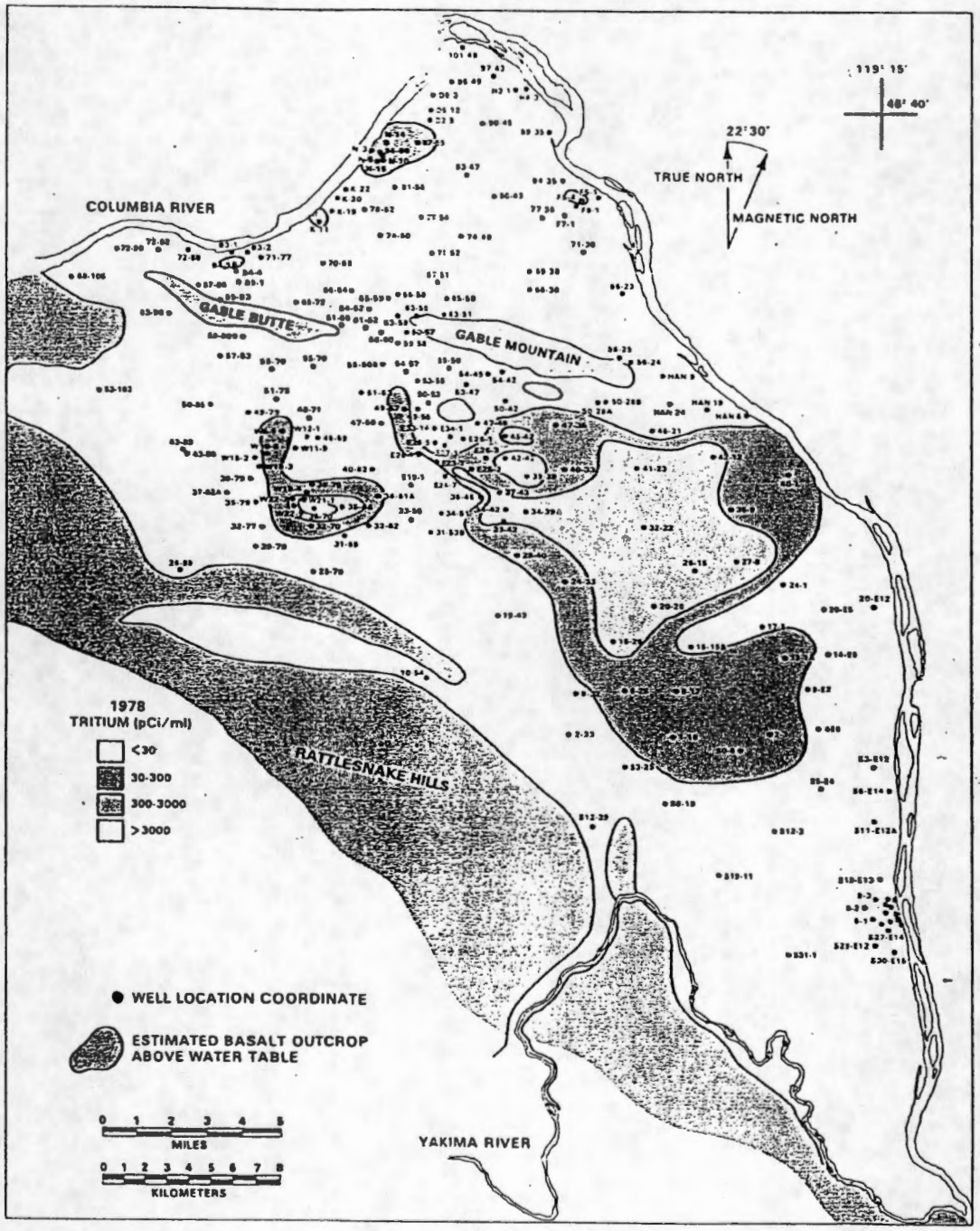


FIGURE 6. Tritium Distribution in Unconfined Ground Water

Original is color

GW report 1978

FIGURE 8. Tritium Distribution in Unconfined Ground Water

Original is color

GW Report
1980

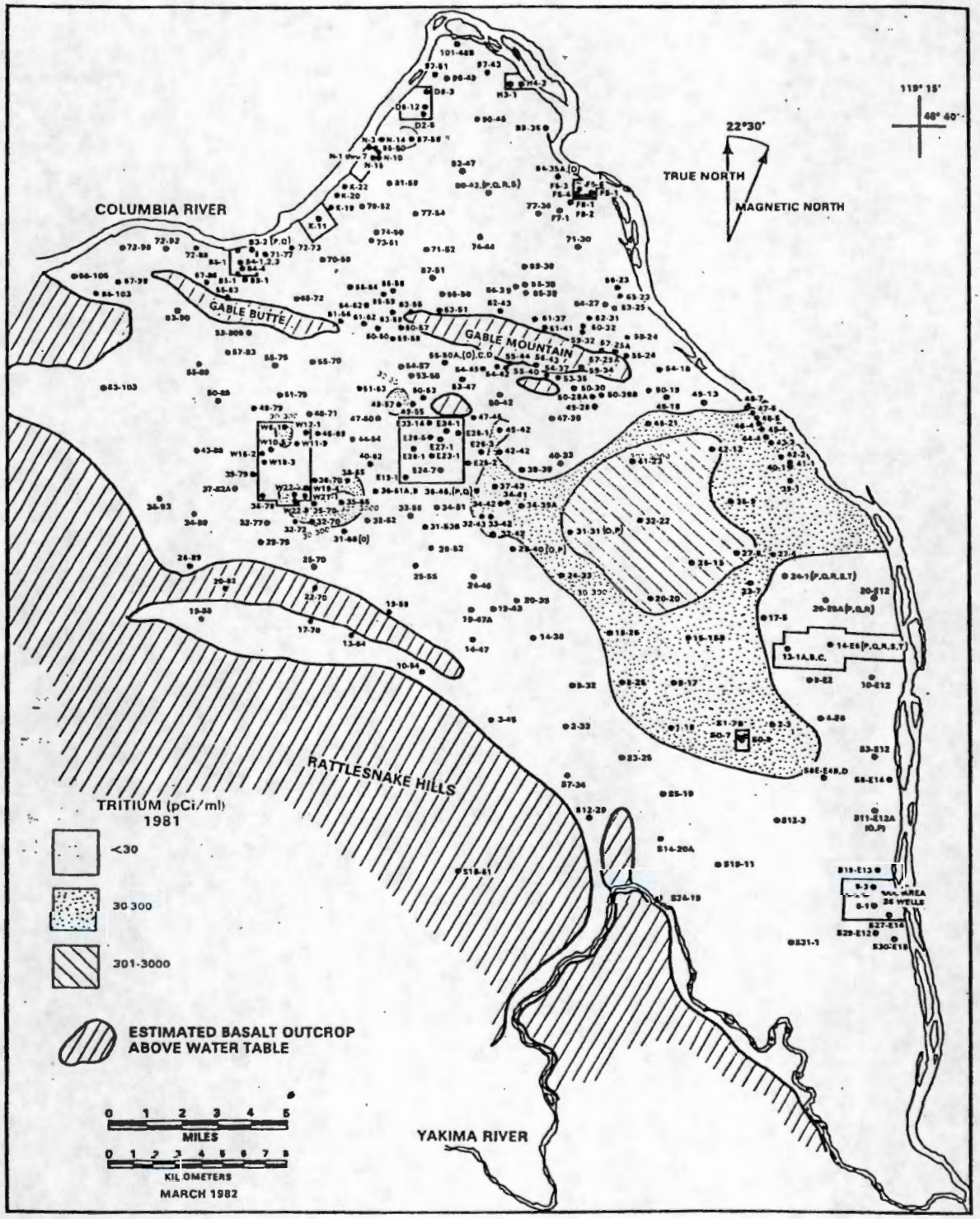


FIGURE 4. Tritium Distribution in Unconfined Ground Water

GW report 1981

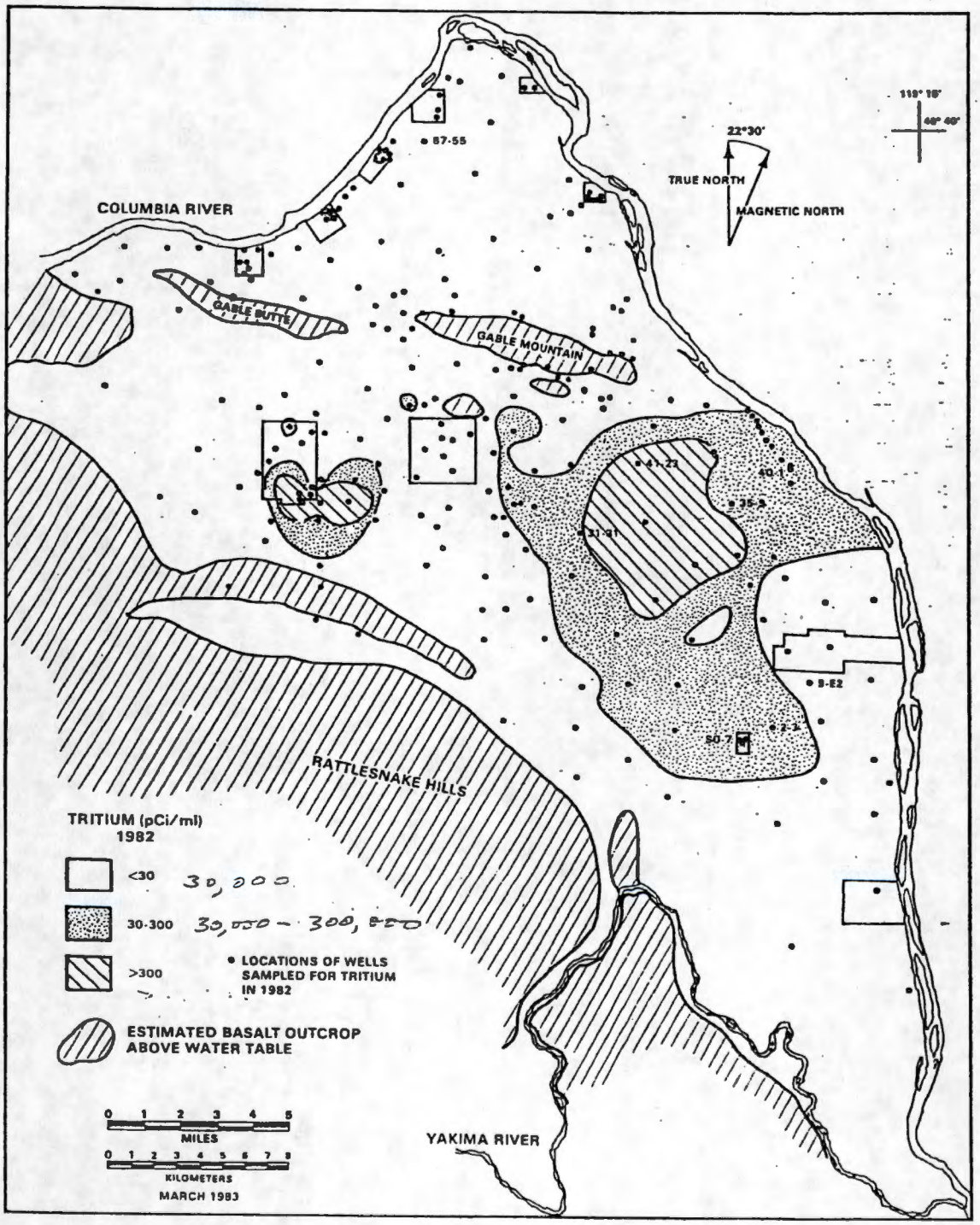


FIGURE 5. Tritium Distribution in Unconfined Ground Water

GW report
1982

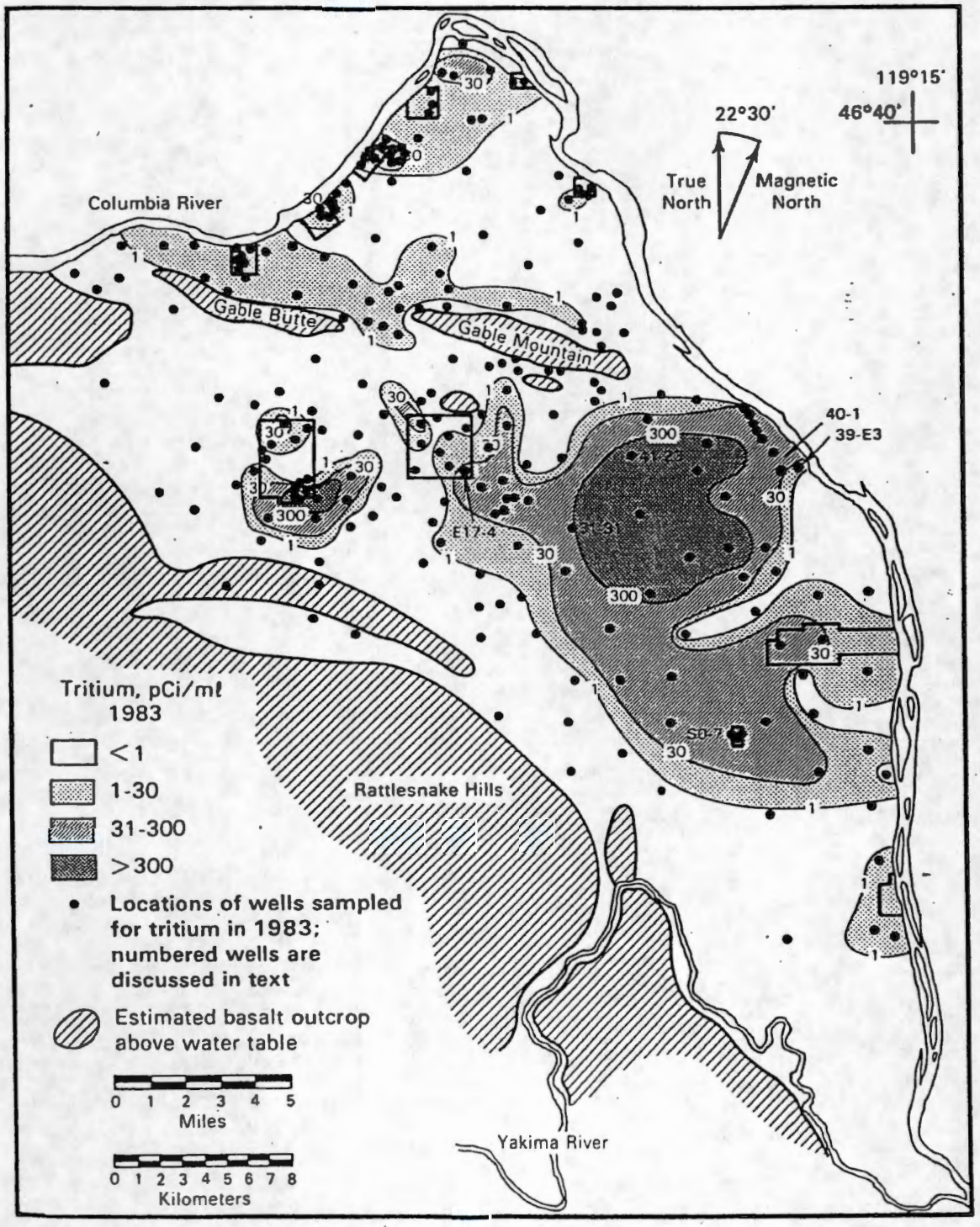


FIGURE 5. Tritium Distribution in the Unconfined Ground Water

GW report 1983

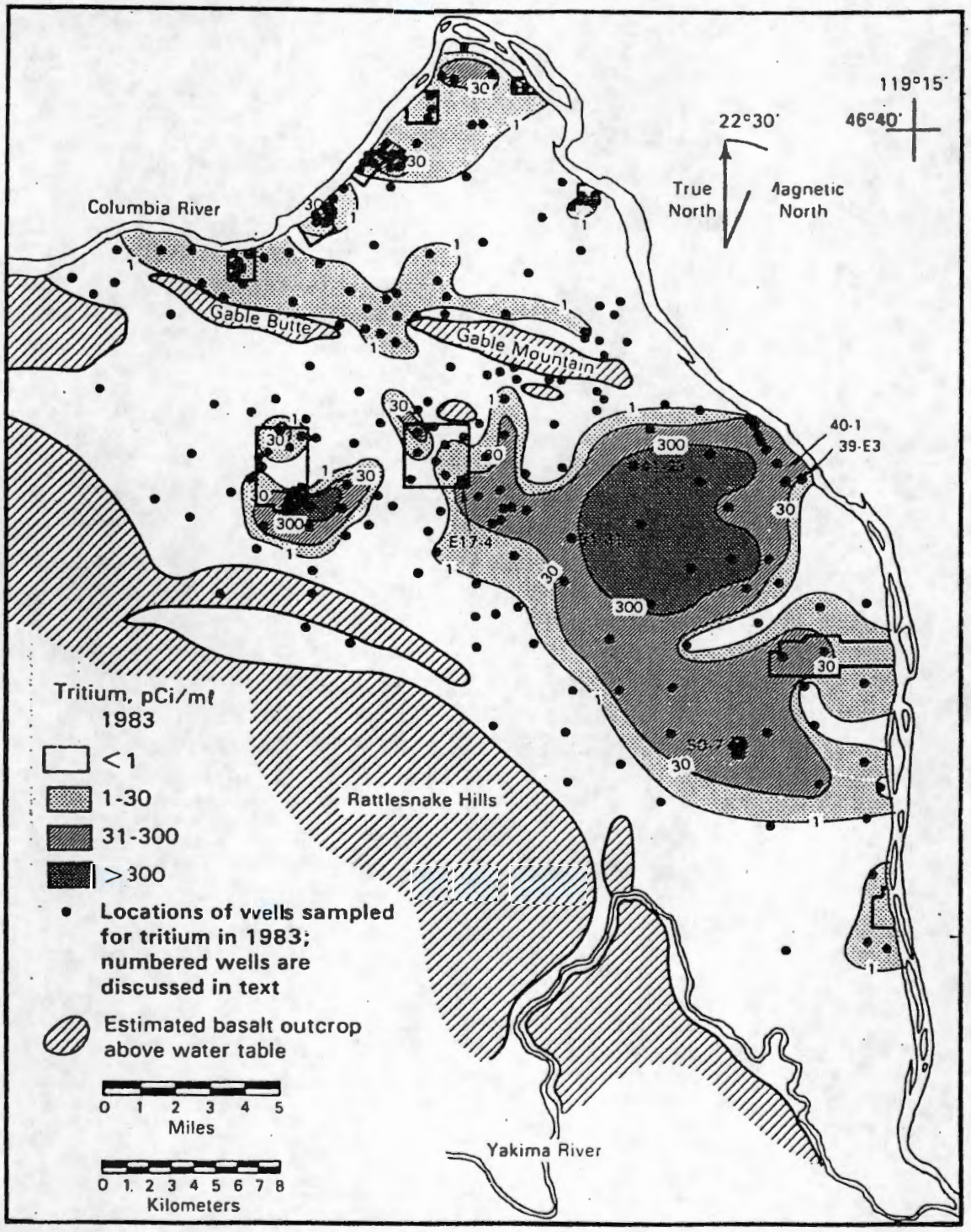


FIGURE 5A. Average Tritium Distribution in the Unconfined Aquifer, 1983

GW report
1984

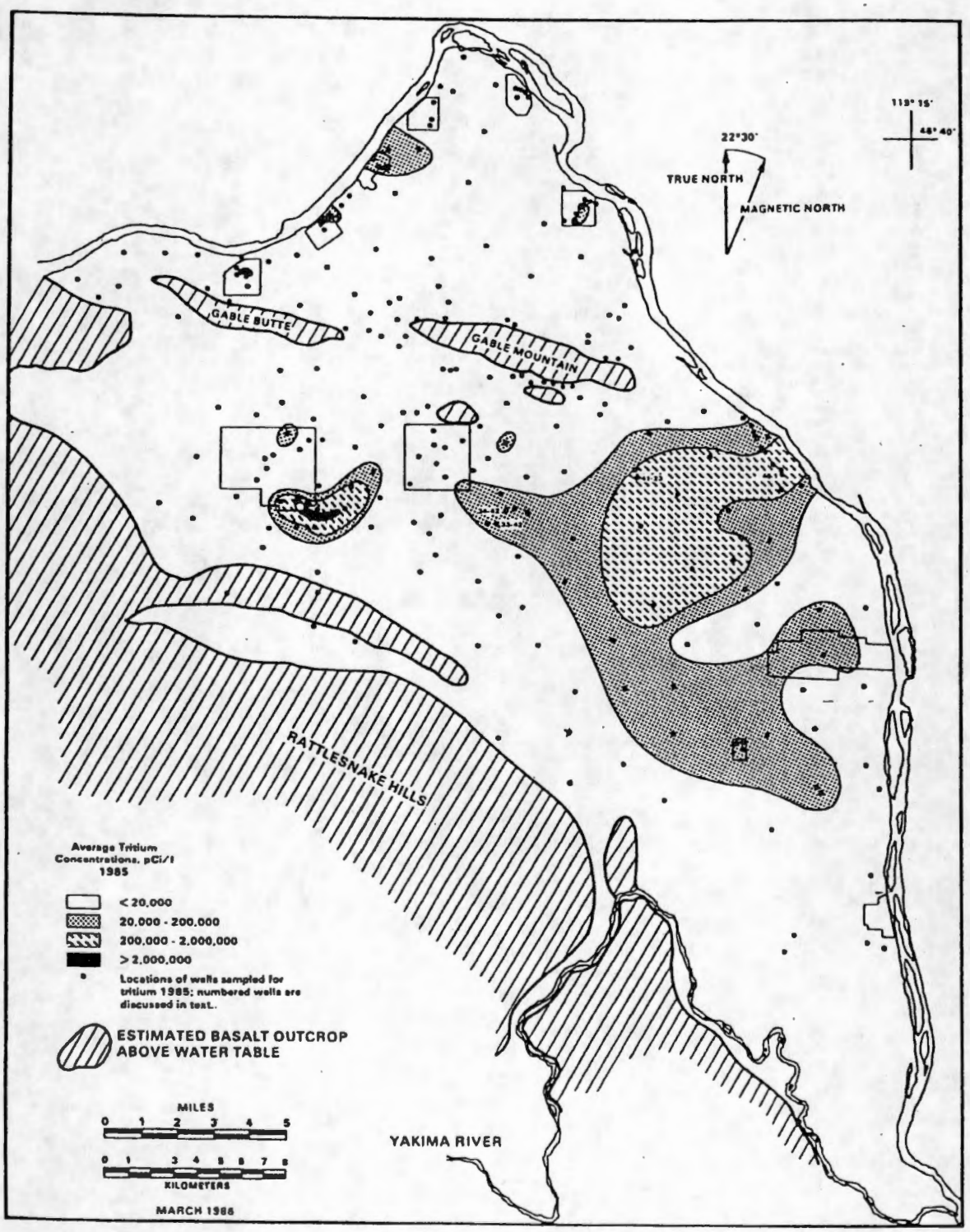


FIGURE 18. Tritium Plume for 1985

ER report 1985

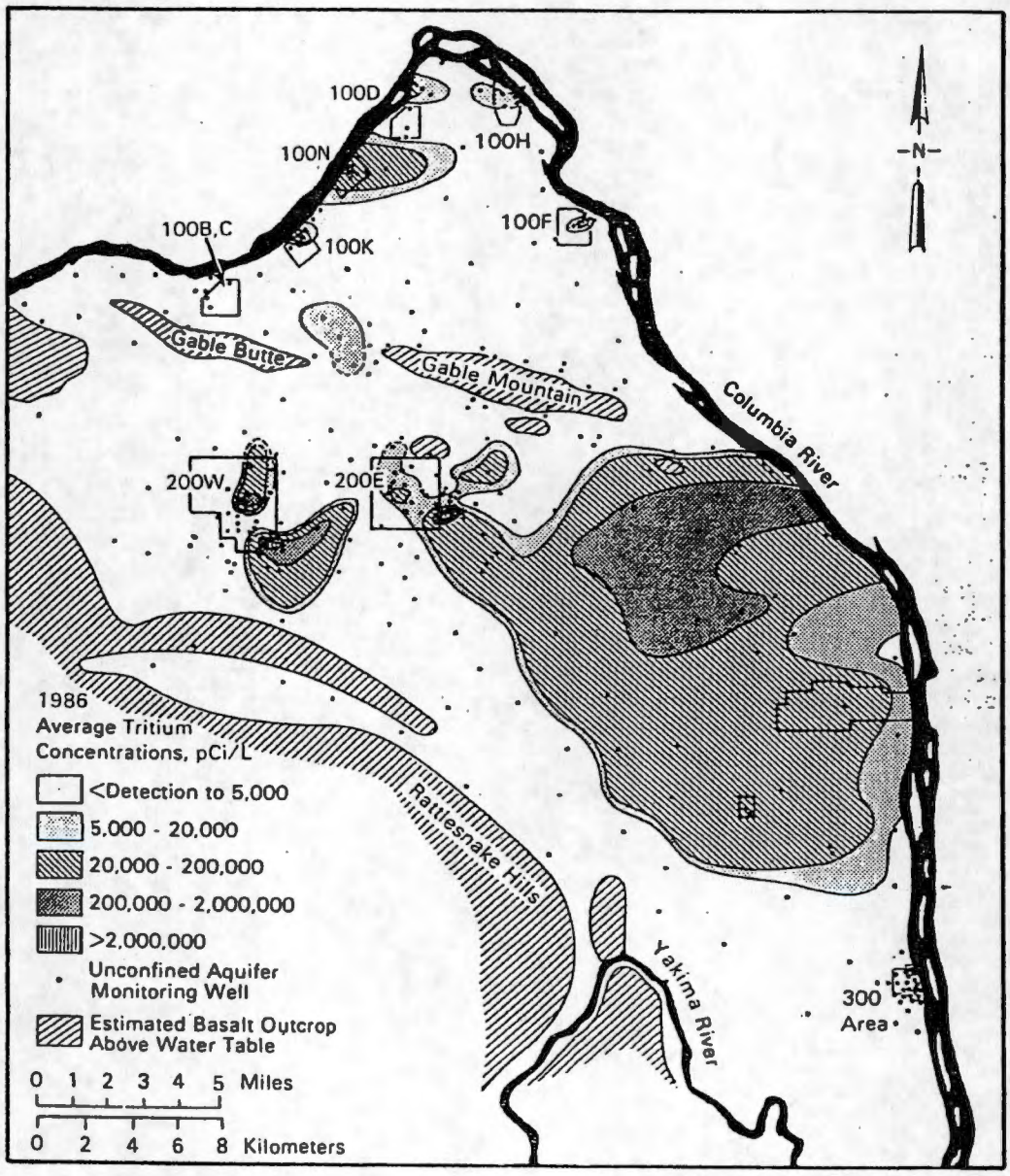


FIGURE 3.12. Tritium Concentrations in Ground Water for 1986

ER report
1986

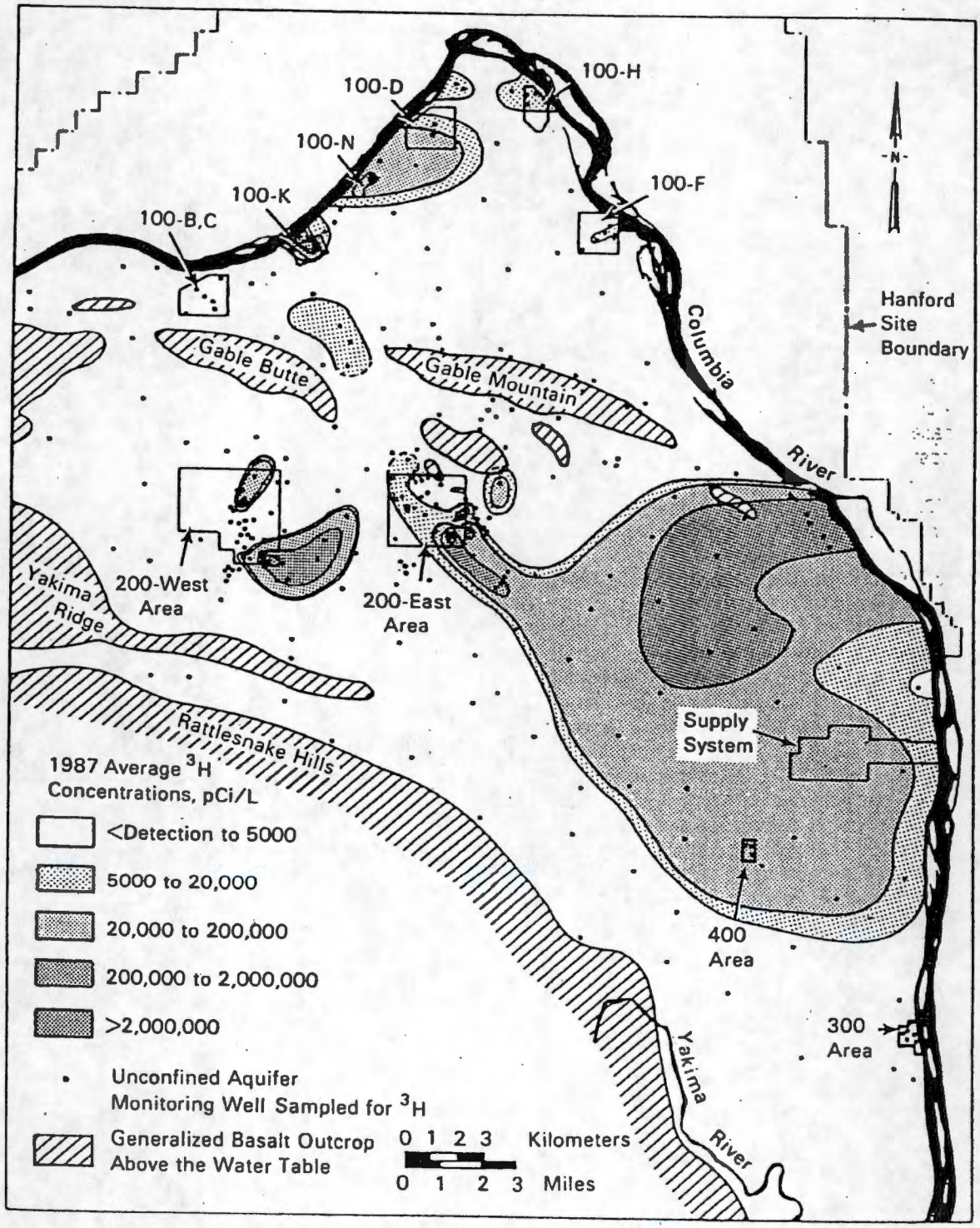


FIGURE 3.13. Tritium (^{3}H) Concentration in the Hanford Site Unconfined Aquifer in 1987

ER report 1987

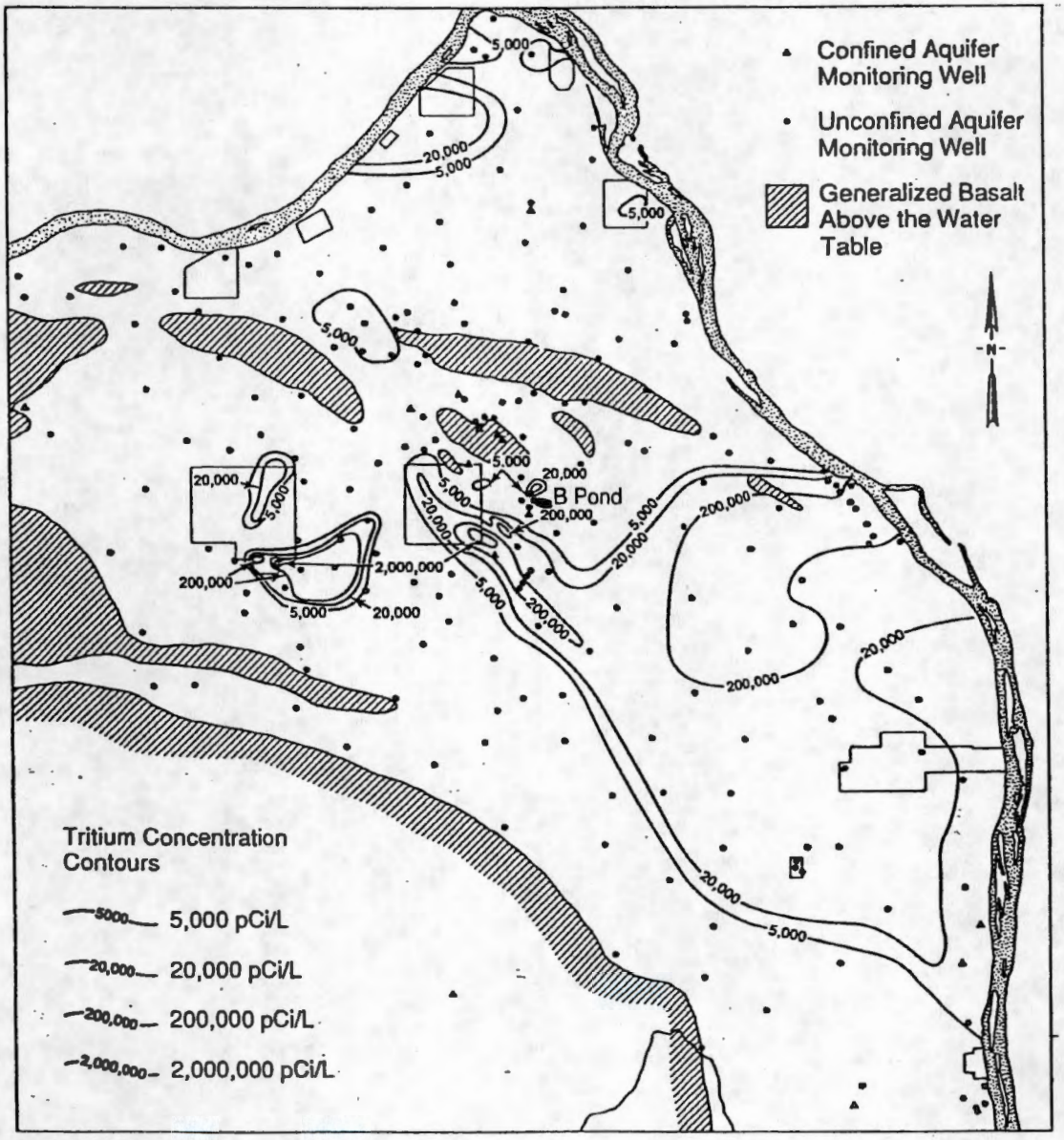


FIGURE 5.4. Tritium (^3H) Concentrations in the Hanford Site Unconfined Aquifer in 1988

contain the highest ^3H concentration within the 100 Areas, with a maximum concentration of 1,220,000 pCi/L.

The highest ^3H concentrations in the 200-East Area, and throughout the Hanford Site, continued to be found in wells near cribs that have received effluents from the Plutonium Uranium Extraction (PUREX) Plant. Tritium concentrations greater than the DCG were present in wells near the 216-A-10, 216-A-36B, 216-A-37-1, and 216-A-45 cribs. Tritium concentrations exceeding the DWS continued to be measured in most of the other wells affected by these cribs.

The movement of the widespread ^3H plume (see Figure 5.4) that extends from the

ER report 1988

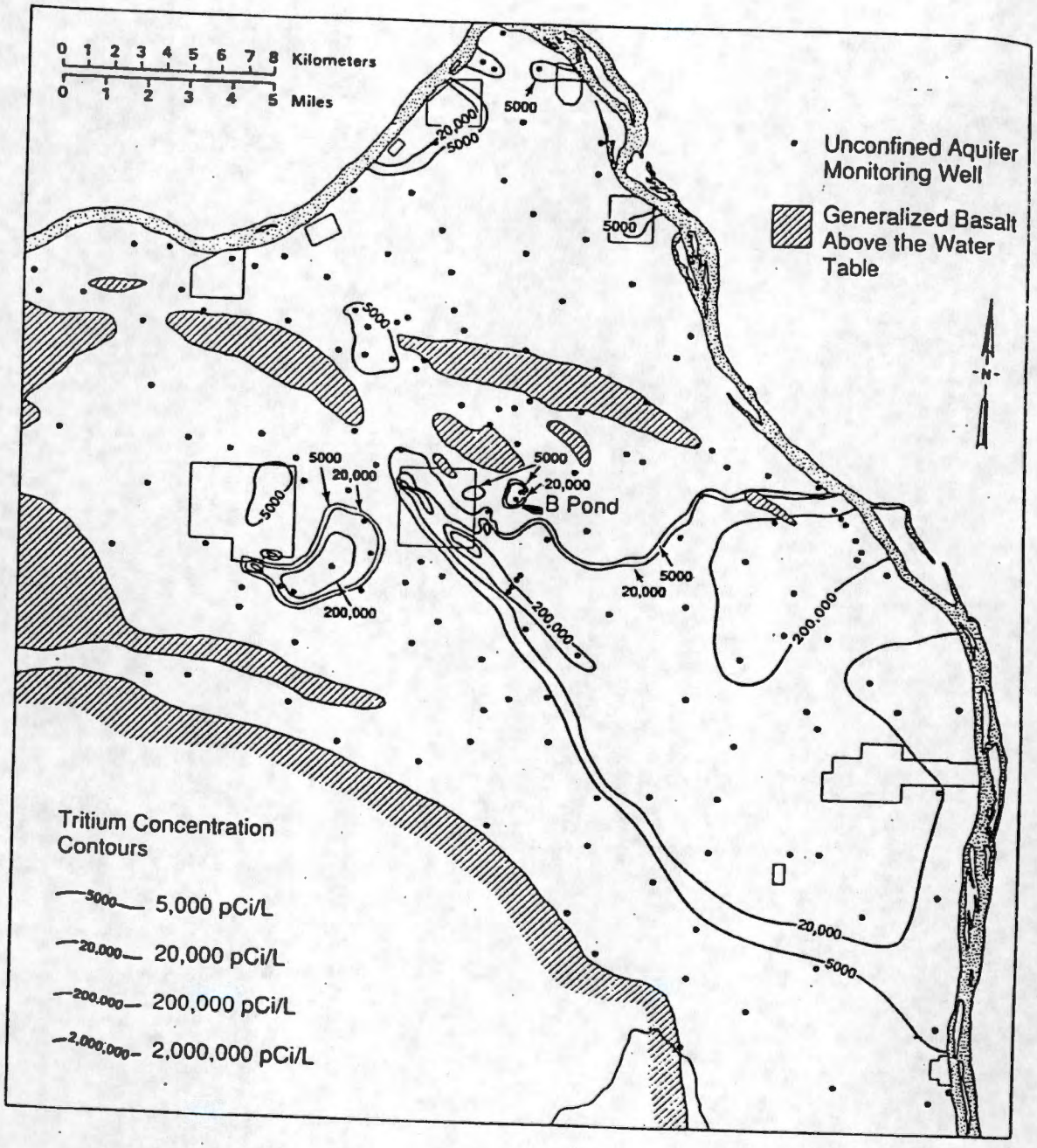


FIGURE 2.14. Distribution of Tritium on the Hanford Site 1989

GW report
1989

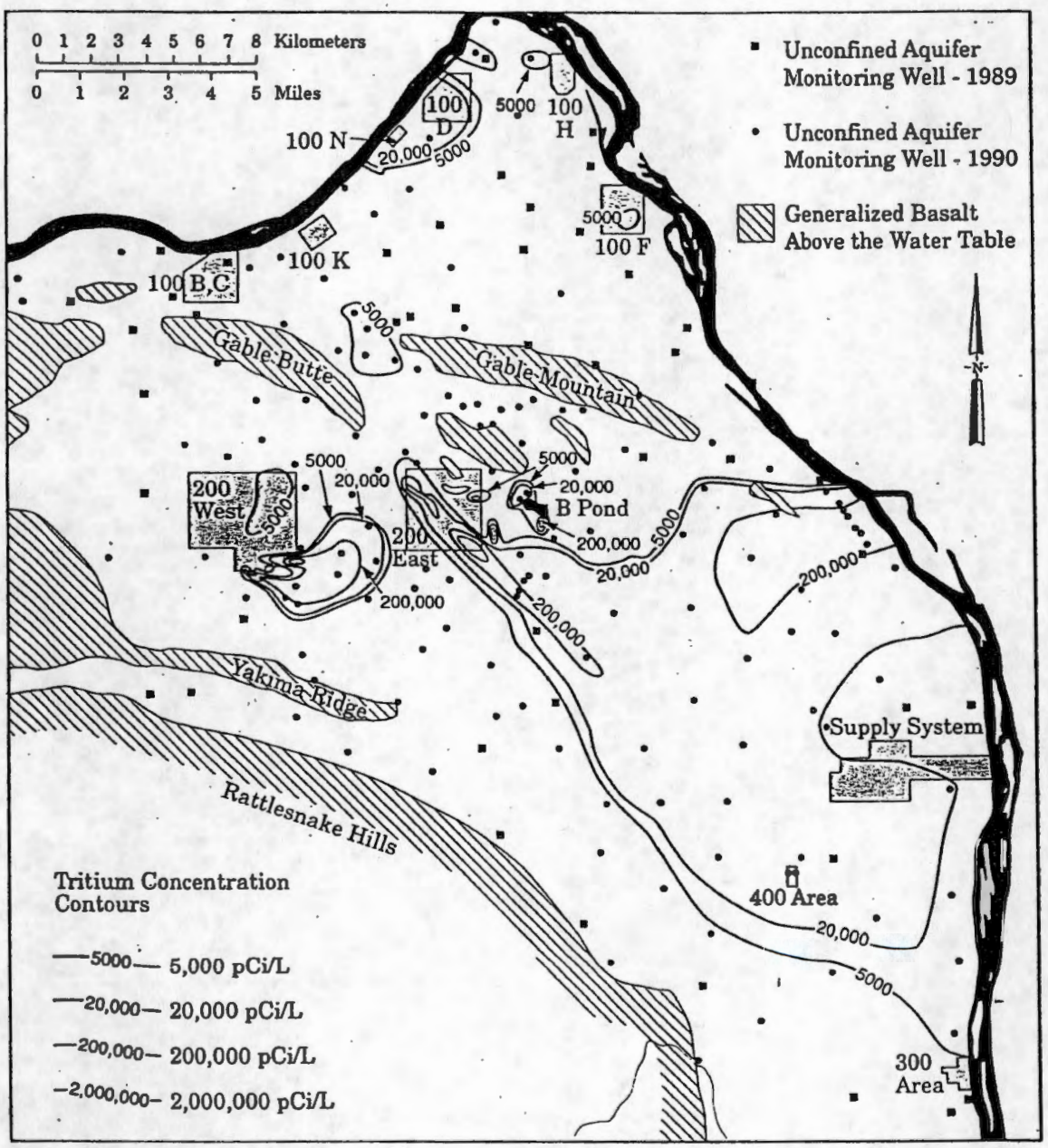
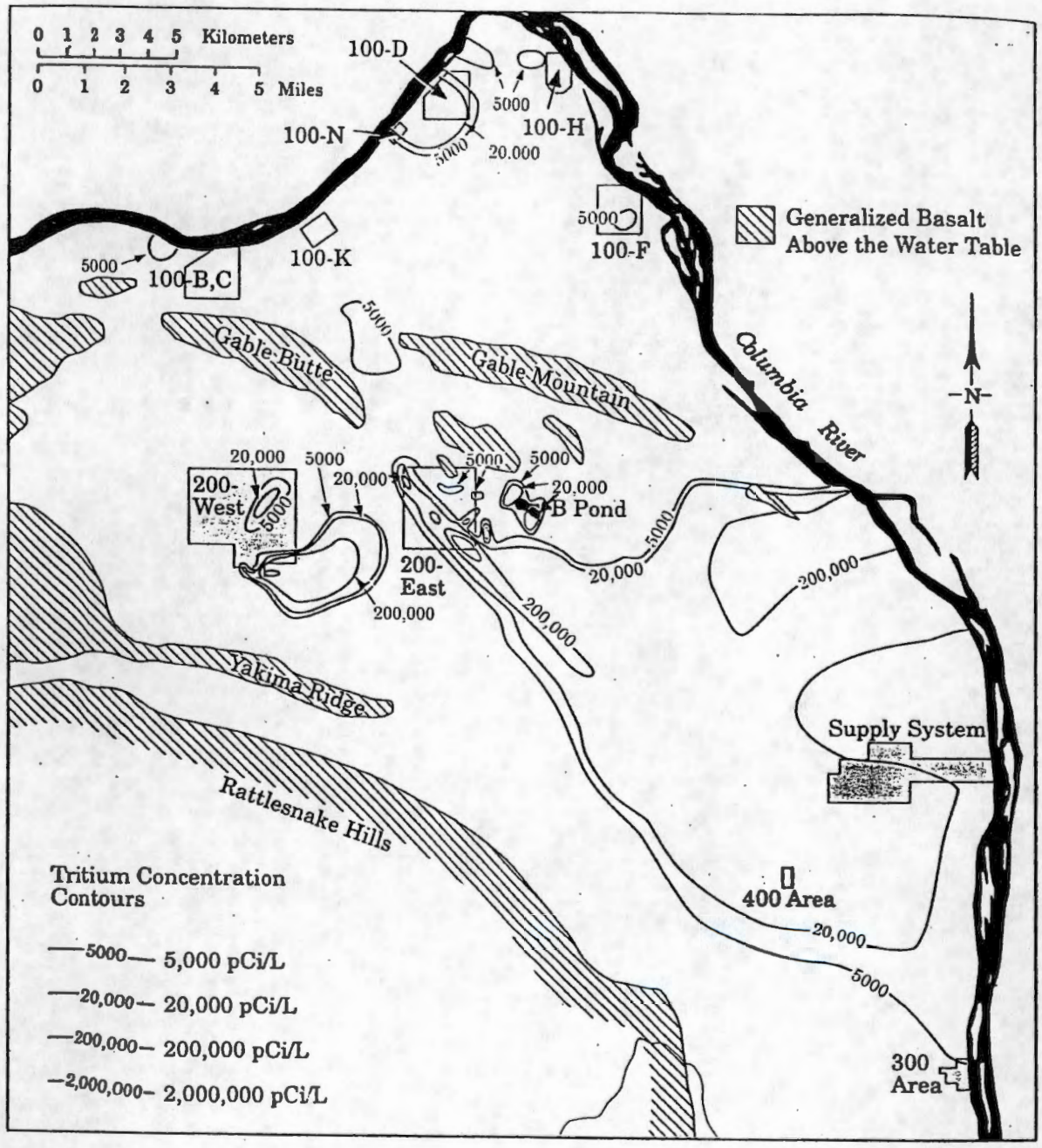


Figure 5.5. Tritium (^3H) Concentrations in the Hanford Site Unconfined Aquifer, 1990

ER report 1990



S9203058.14

Figure 5.7. Tritium (^3H) Concentrations in the Hanford Site Unconfined Aquifer, 1991

ER report 1991

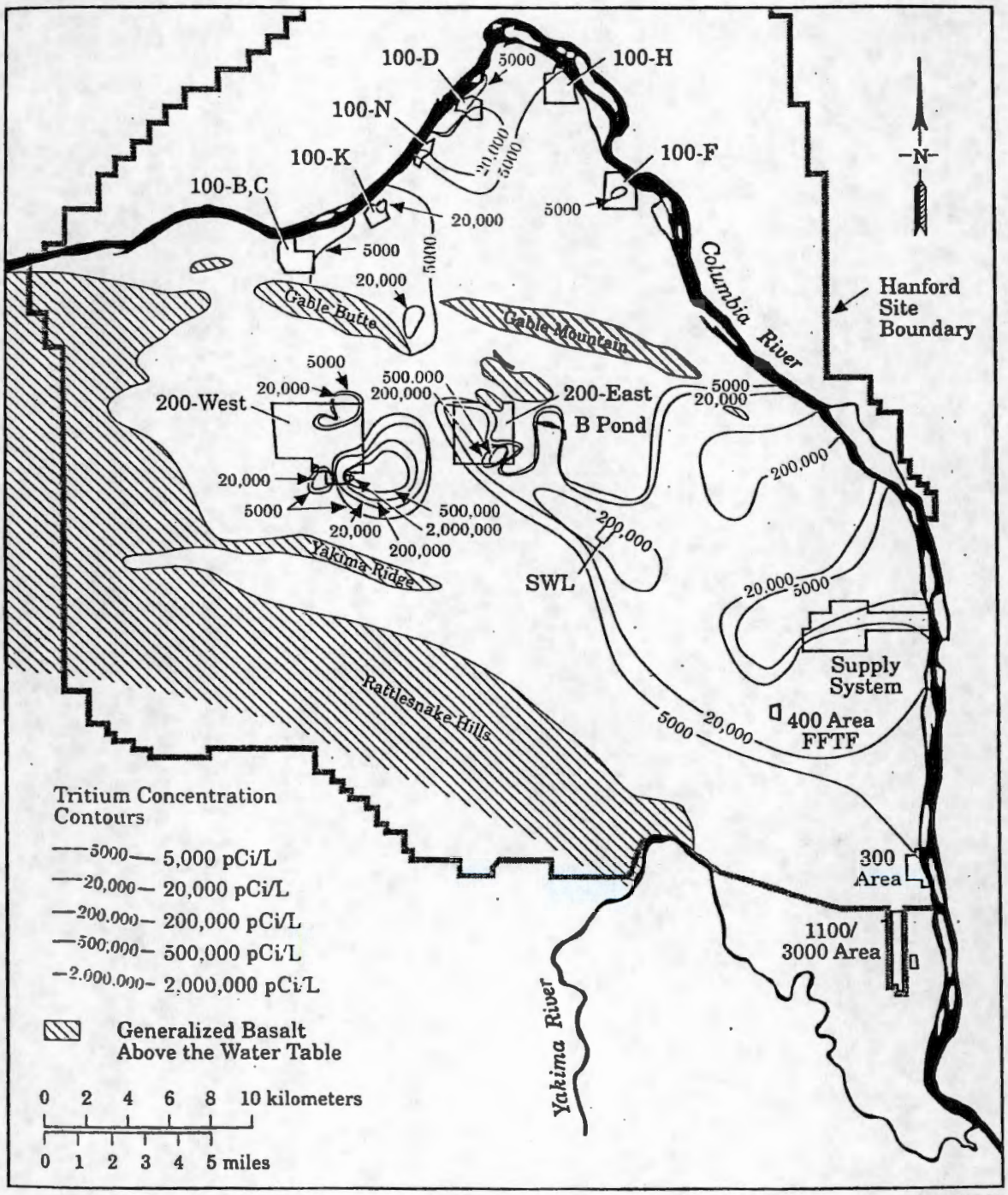


Figure 5.54. Tritium (^3H) Concentrations in the Unconfined Aquifer, 1992

ER 1992

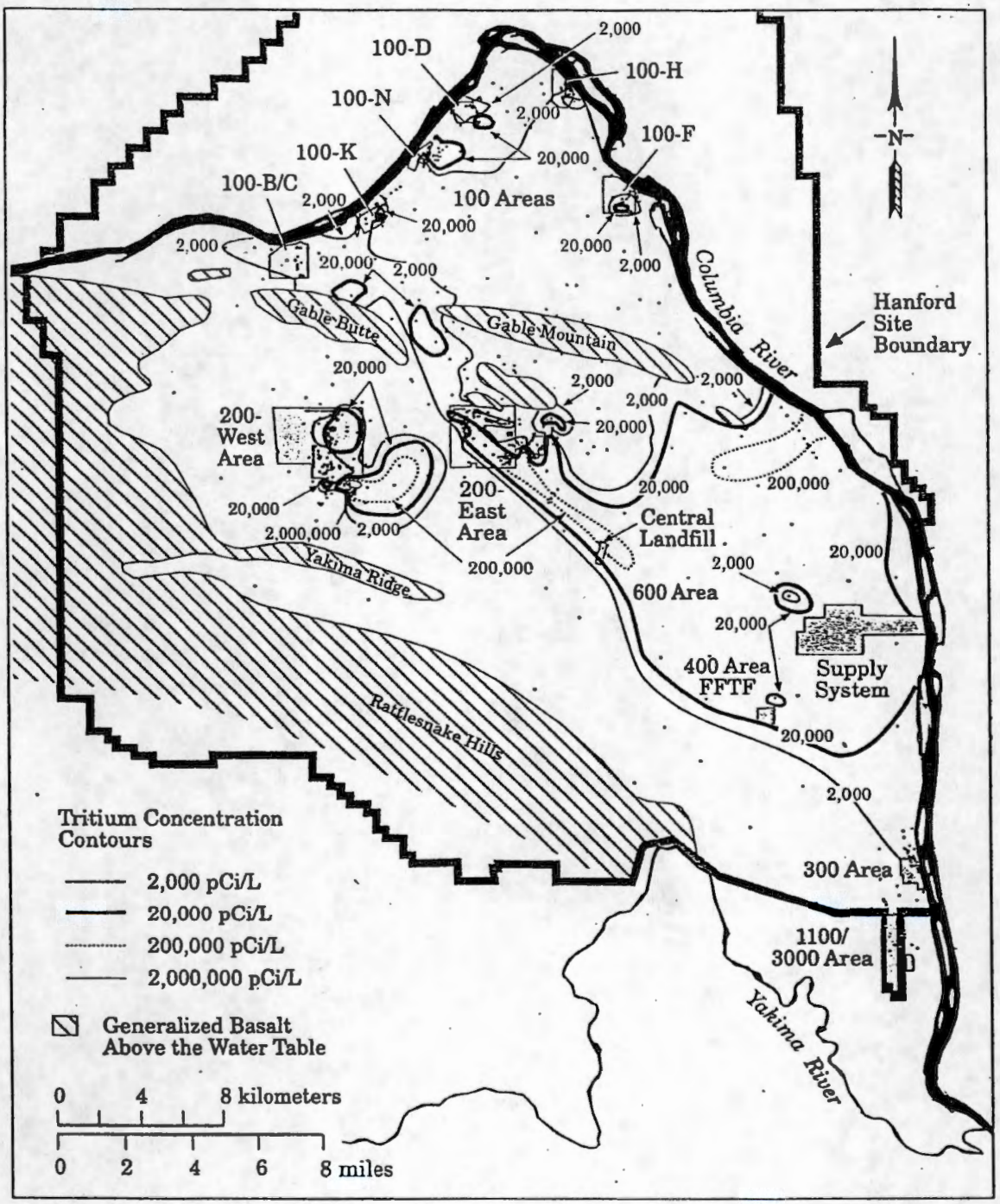


Figure 5.47. Tritium (^3H) Concentrations in the Unconfined Aquifer, 1993

ER 1993

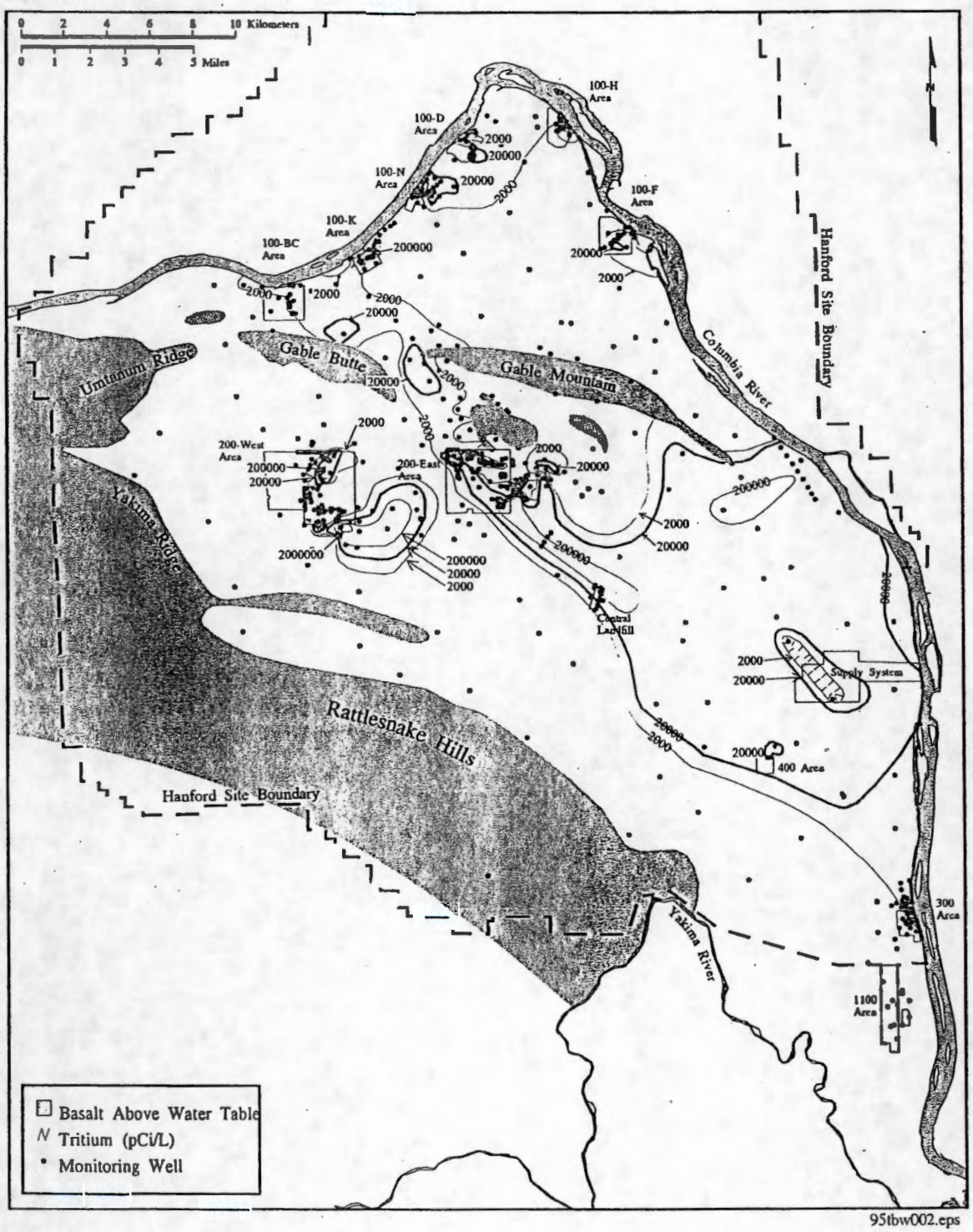


Figure 5.8.11 Tritium Concentrations in the Unconfined Aquifer, 1994

ER 1994

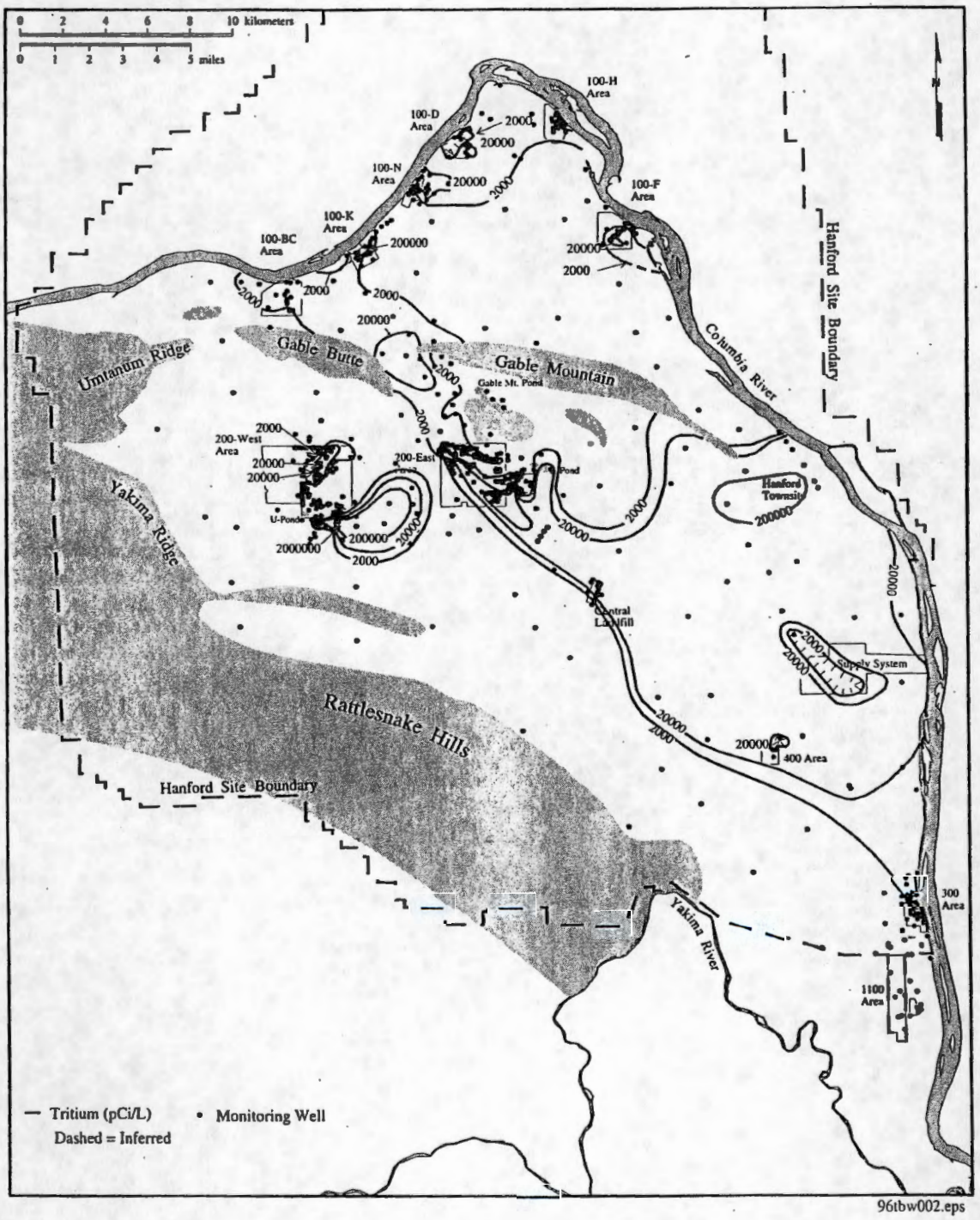
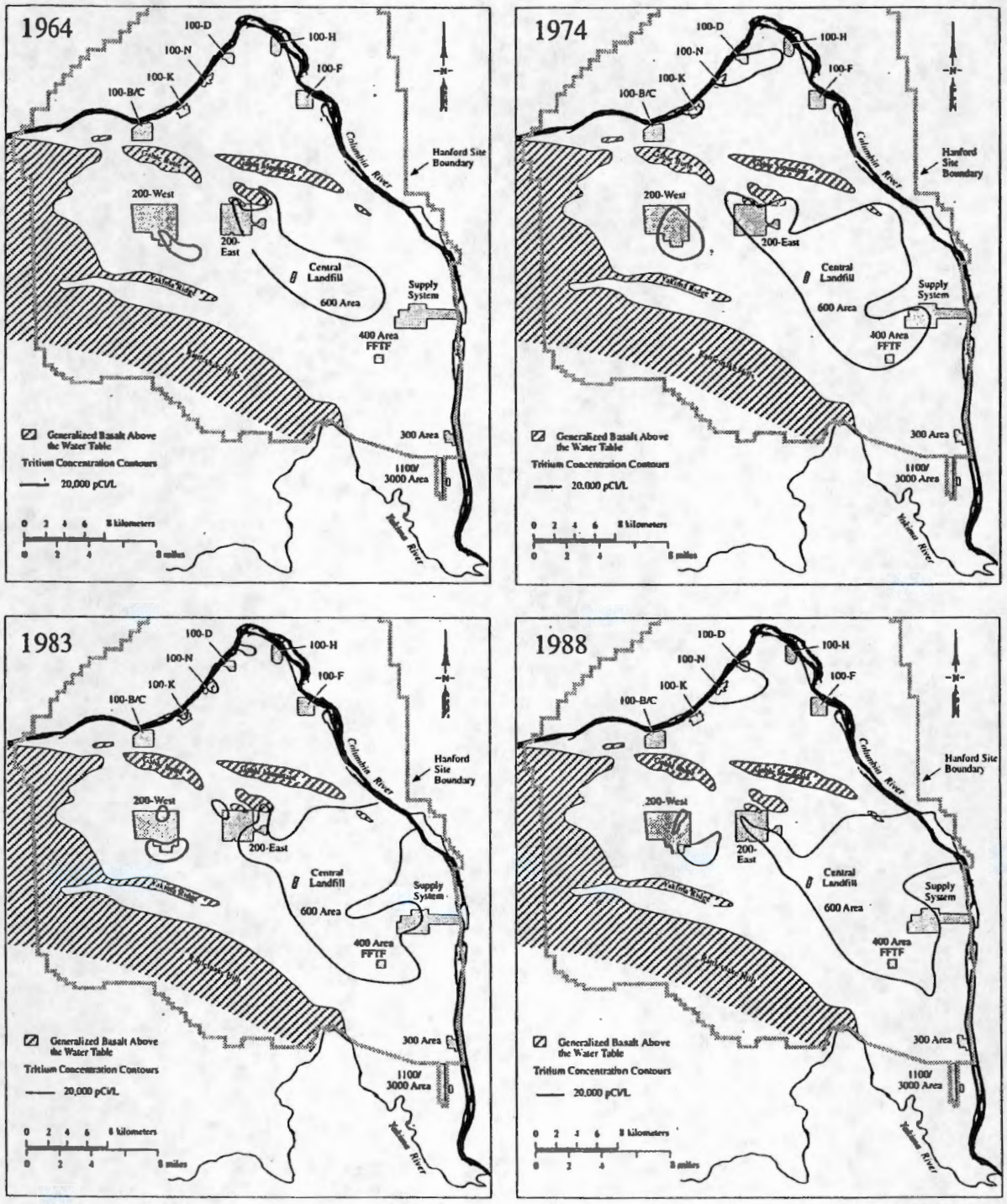


Figure 4.8.12. Distribution of Tritium in the Unconfined Aquifer, 1995

ER 1995



SG96020215.95

Figure 4.8.17. Historical Tritium Concentrations on the Hanford Site

.70 1995

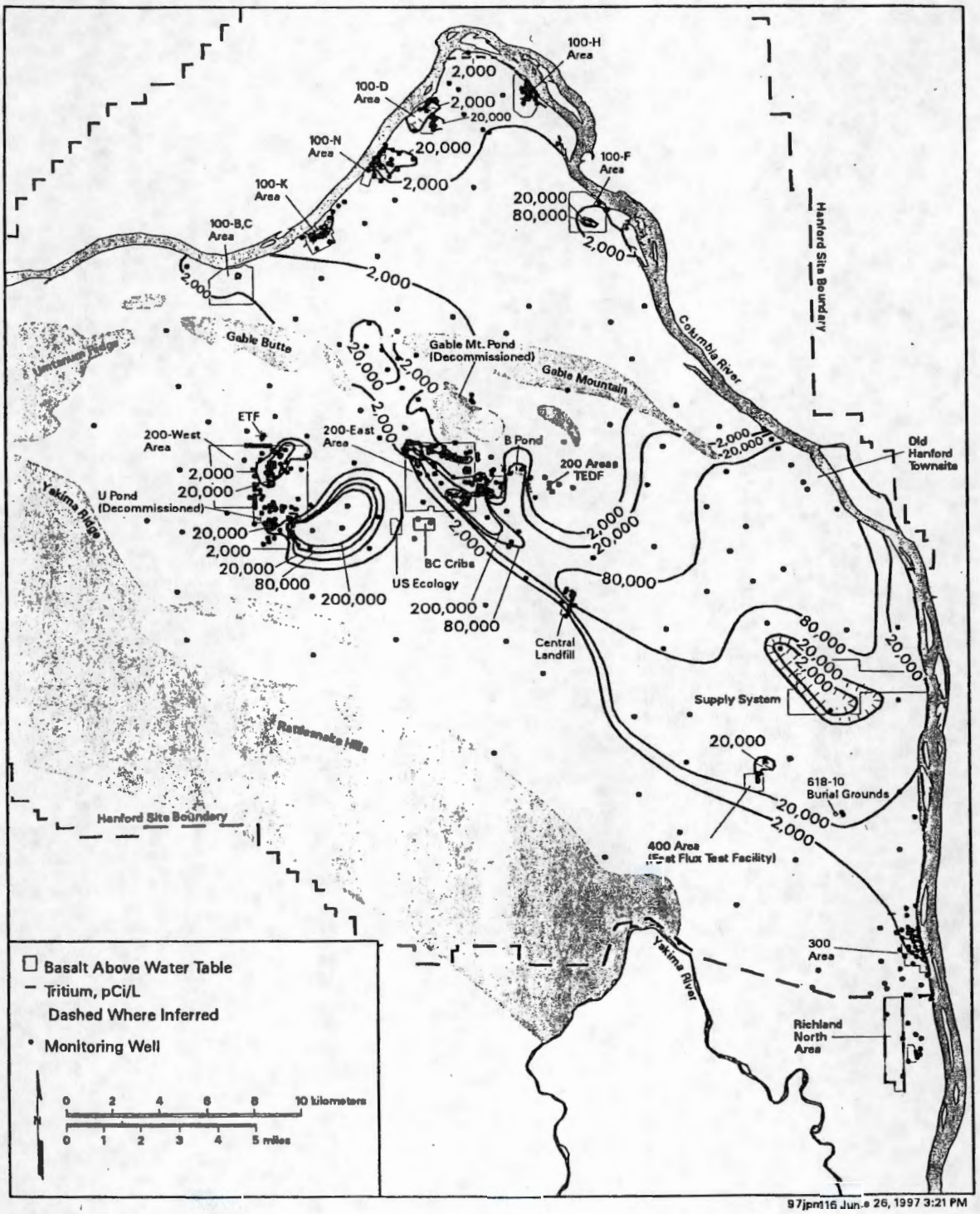


Figure 4.8.12. Distribution of Tritium in the Unconfined Aquifer, 1996

ER 1996

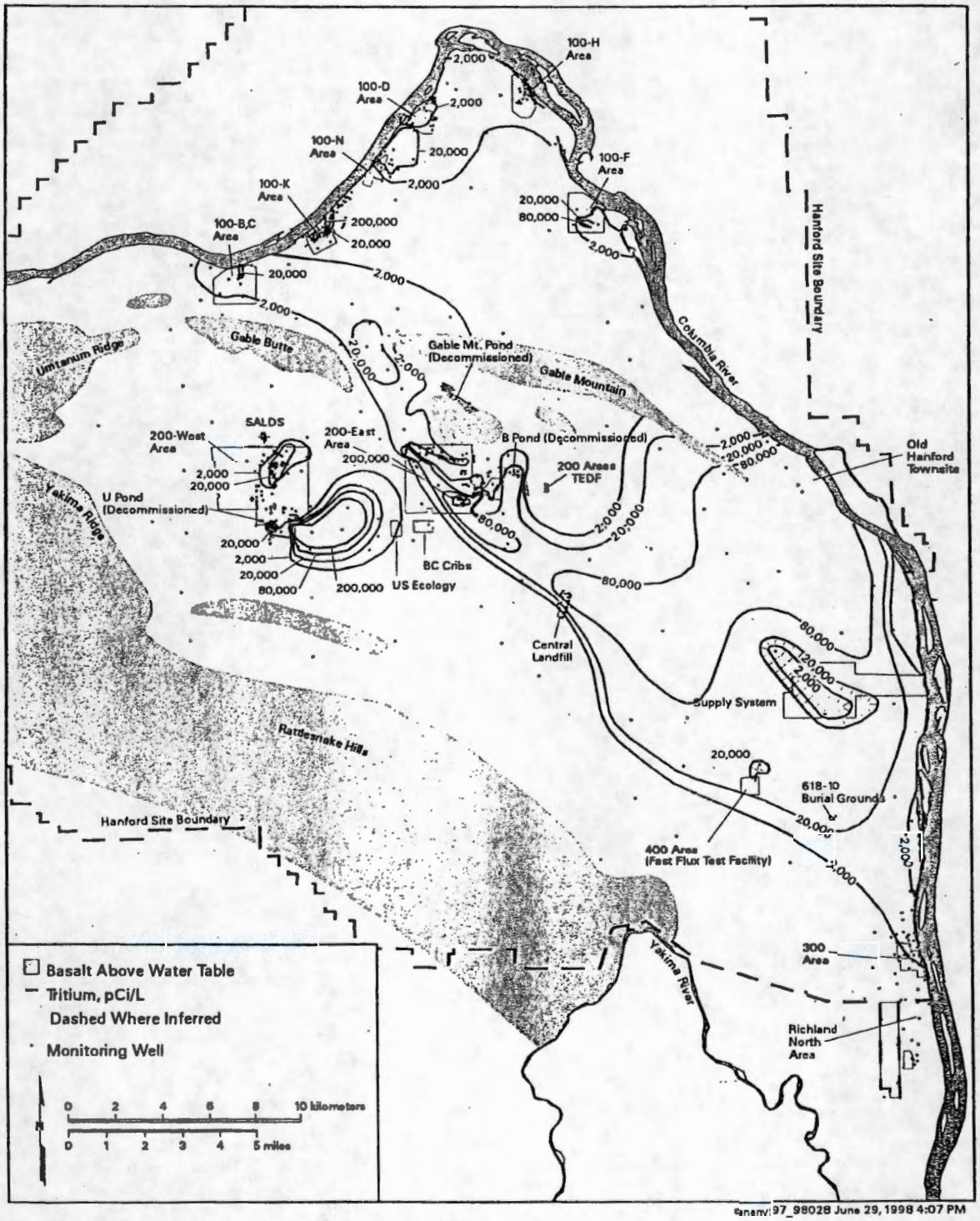


Figure 6.1.13. Tritium Distribution in the Unconfined Aquifer, 1997

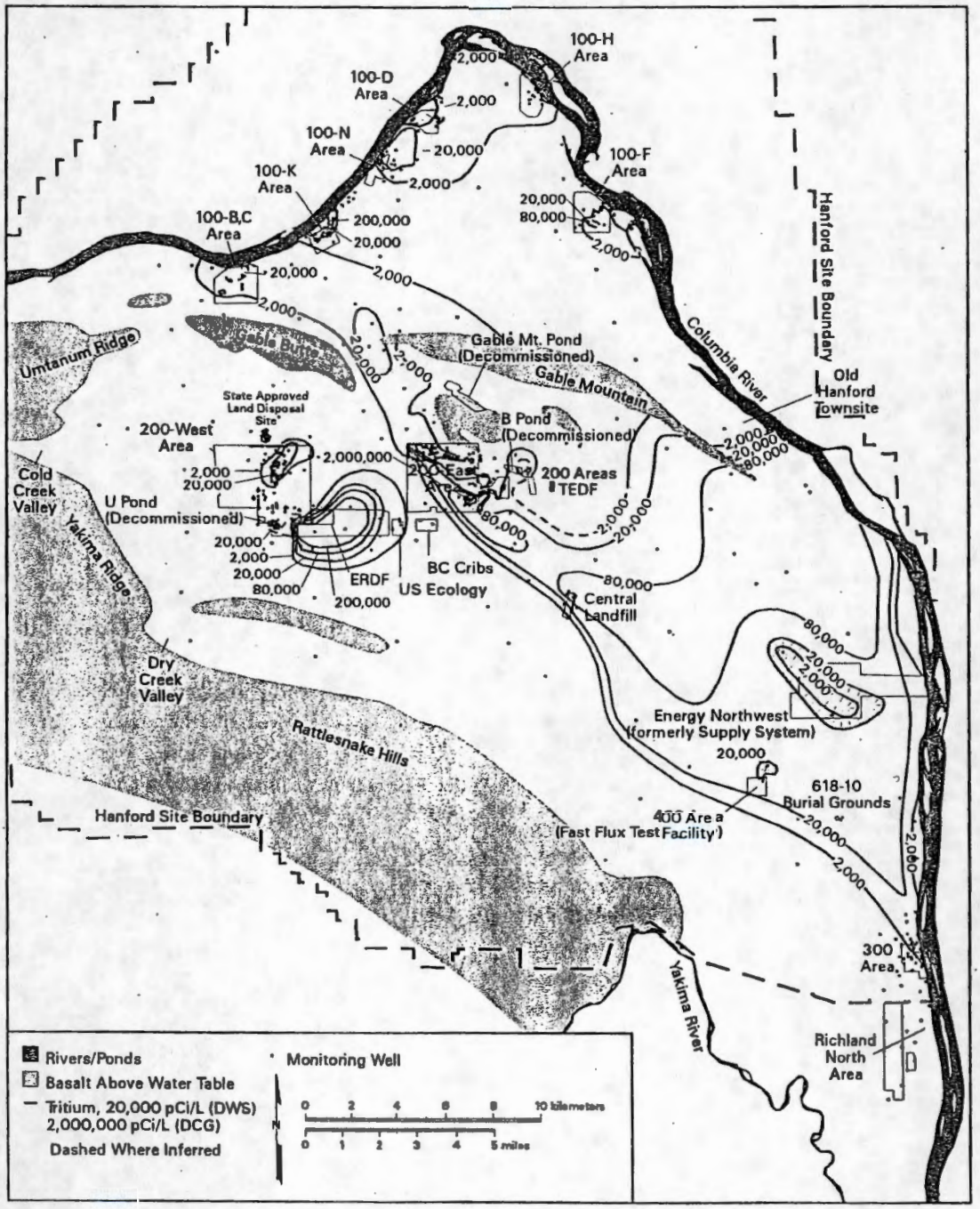


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Figure 6.1.13. Average Tritium Activities in the Unconfined Aquifer, 1998

ER1998