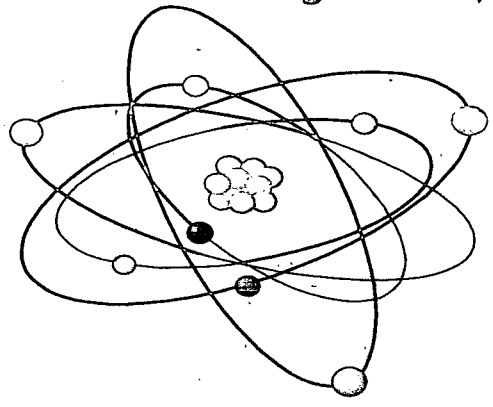
Atlanta Chapter of the Health Physics Society

February 13, 2007

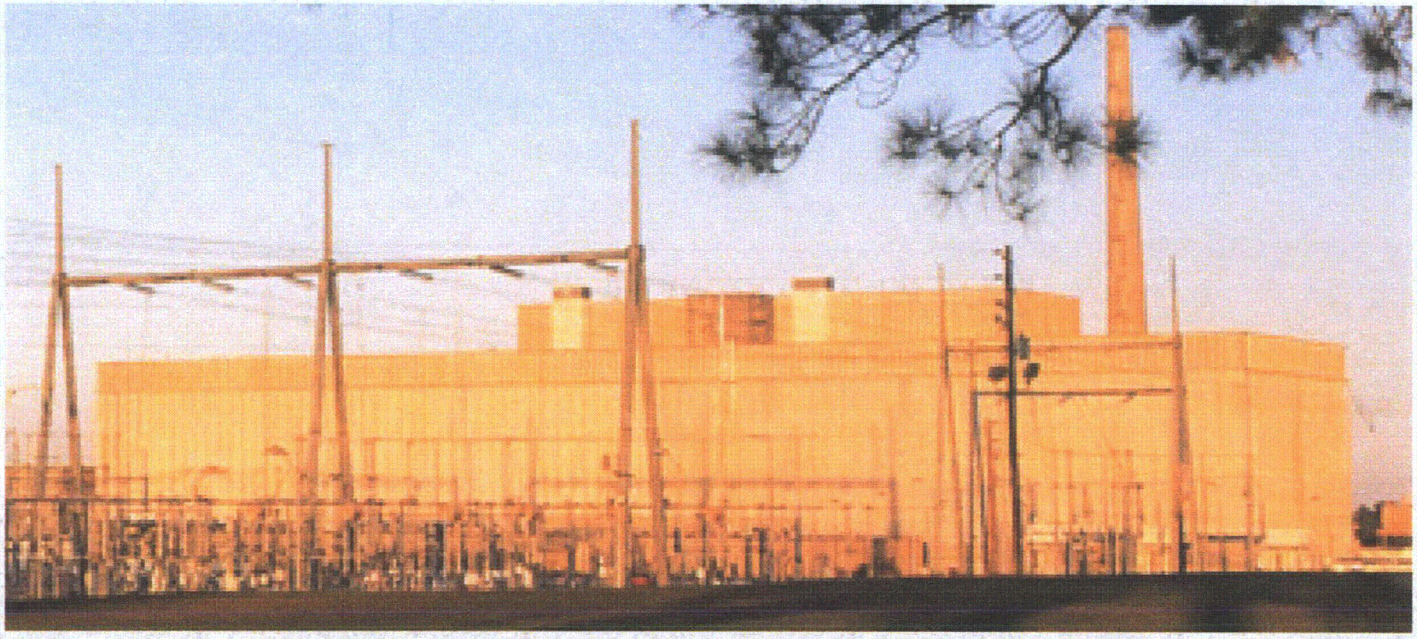


Southern Nuclear Operating Company

SOUTHERN COMPANY

Energy to Serve Your World™

Edwin I. Hatch Groundwater Protection Initiative



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Industry events:

- Indian Point, NY
- Braidwood, Il
- Salem, MA
- Connecticut Yankee, CT
- Palo Verde, AZ

Nuclear Energy Institute (NEI)

- Industry task force organized
  - Action Plan
  - Communications Protocol

Electric Power Research Institute (EPRI)

- – developing groundwater guidelines

NRC Task Force

- Questionnaire
- Reviewing industry actions
- Inspecting
- Expected regulatory decision on rule making by late 2007 or early 2008

Other interested parties:

Public

States

American Nuclear Insurers

Co-owners

HP Societies

Hatch Groundwater History

1974 Commercial Operations

1977 Routine groundwater sample

1978 Turbine building settlement

1979 Consultant hydrology/groundwater tritium study

- 17 additional wells dug

1979 Abandoned nitrogen line

1979 U-1 CST transfer pump seal leak

1986 SFP release of ~150,000 gallons
- On-site swamp contaminated

1987 U-2 Condensate Storage Tank moat

2003 U-1 CST line deterioration

2004 Demineralized water valve

2005/2006 U-1 CST transfer pump recirc line leaks and transfer pump suction line weld cracks

2006 Special project team formed

- Above ground piping checked
- Moats water proofed

- Consultant hydrology/groundwater re-evaluation

- Ultrasonic underground piping scans

-12 new wells

- 2 additional effluent discharge pts

- Modified and enhanced procedures

- Replacing deteriorated piping

Tritium – radioactive hydrogen

- 1 proton, 2 neutrons
- weak beta emitter (18.6 kev)
- half life 12.3 years
- chemically acts like hydrogen
- bonds as part of water molecule and moves with water

So what's all the fuss?

The very small quantities being released accidentally are a very small fraction of what's being released in accordance with regulations. There's no dose threat.

The issue is public perception!

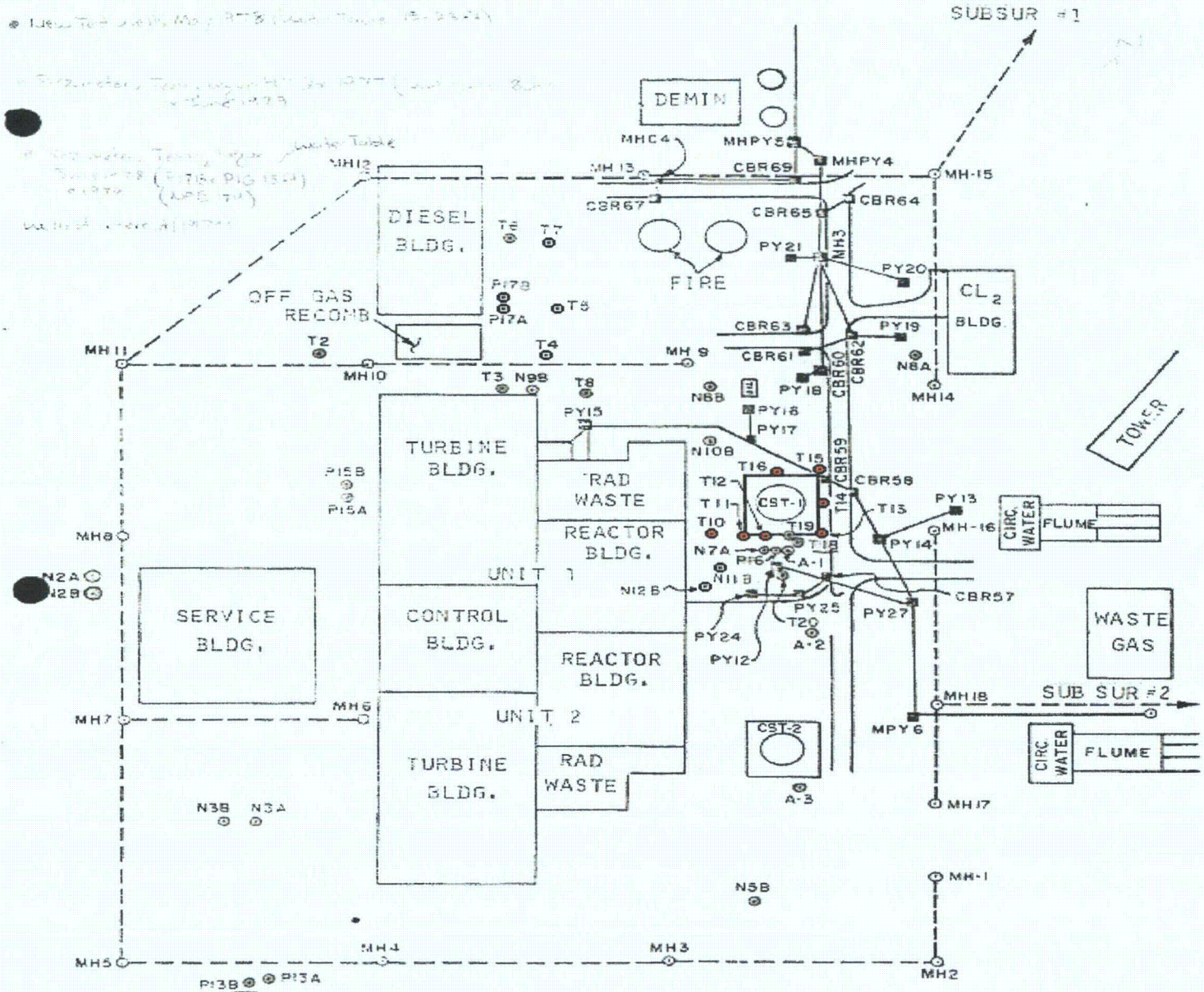
Hatch Tritium Effluents for 2005

Gaseous - 46.5 Ci (total site)

Liquid – 27.8 Ci (total site)

Calculated Tritium released through outfall 1Y22N008A in 2005 was 0.0729 Ci, which without dilution gave an estimated dose of 7.26 E-03 mrem at the site boundary.

DW1
DW2
DW3

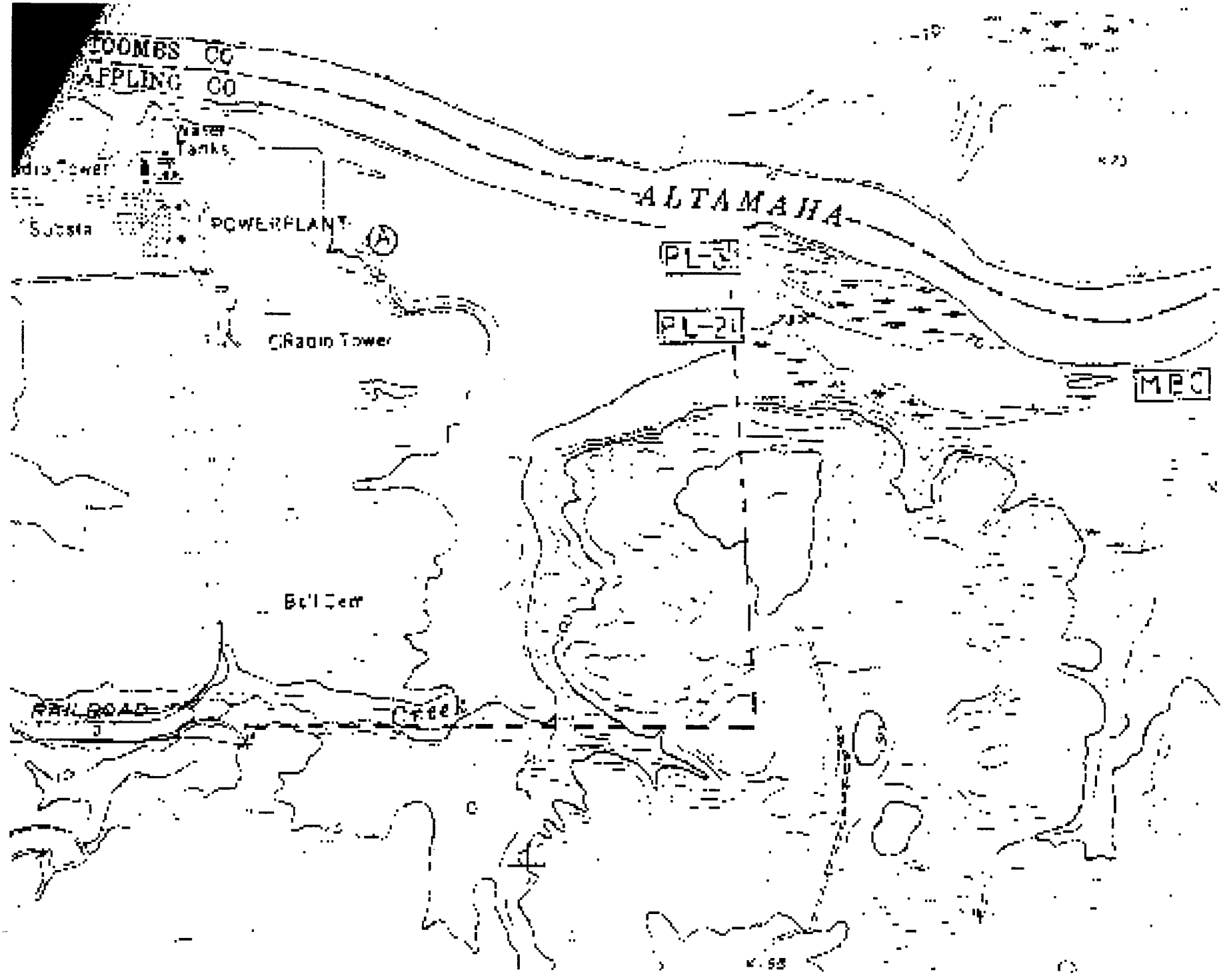


GEORGIA POWER COMPANY
EDWIN I. HATCH NUCLEAR PLANT

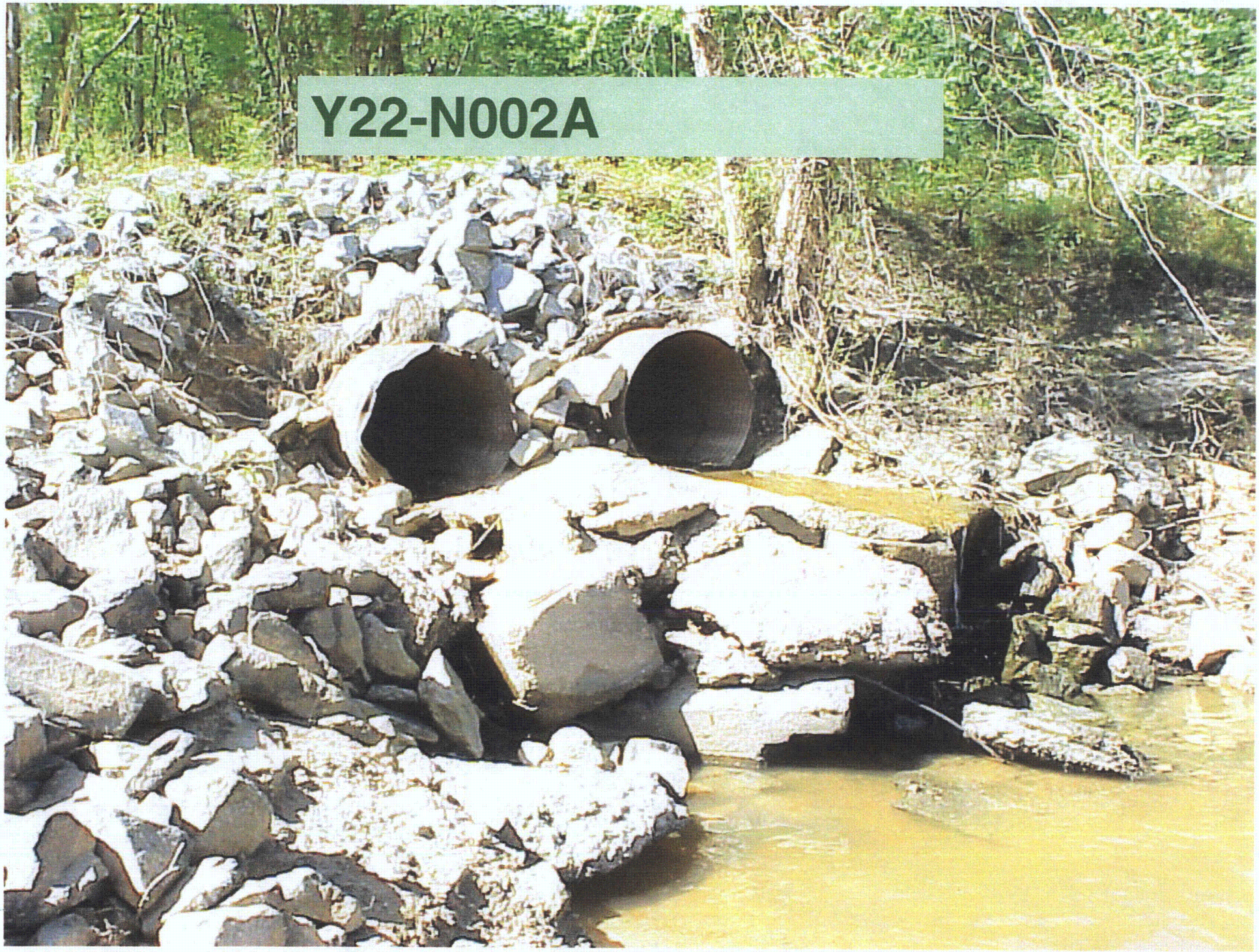
TEST HOLES AND THE DRAINAGE SYSTEM.

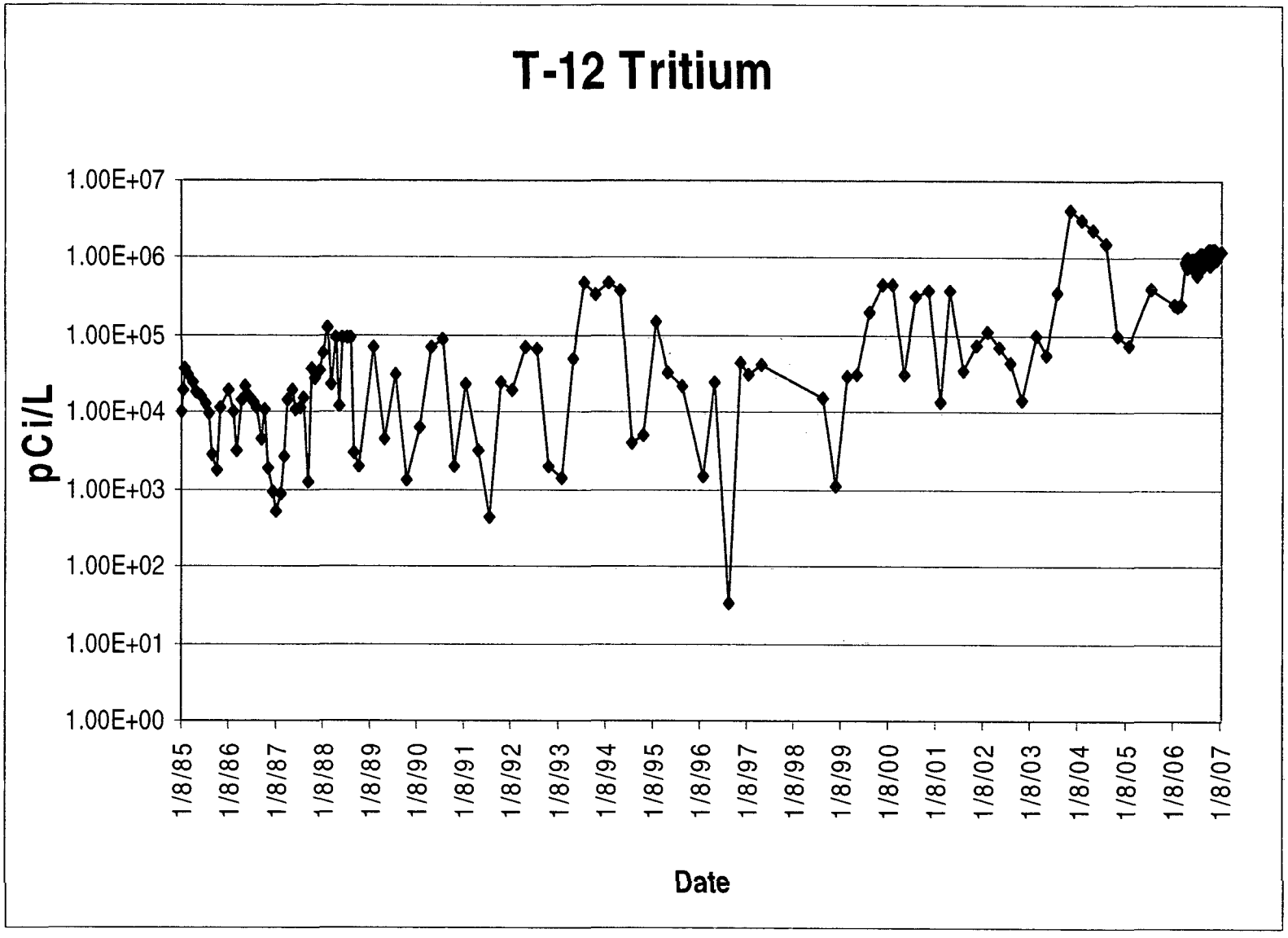
FIGURE 2.4-2

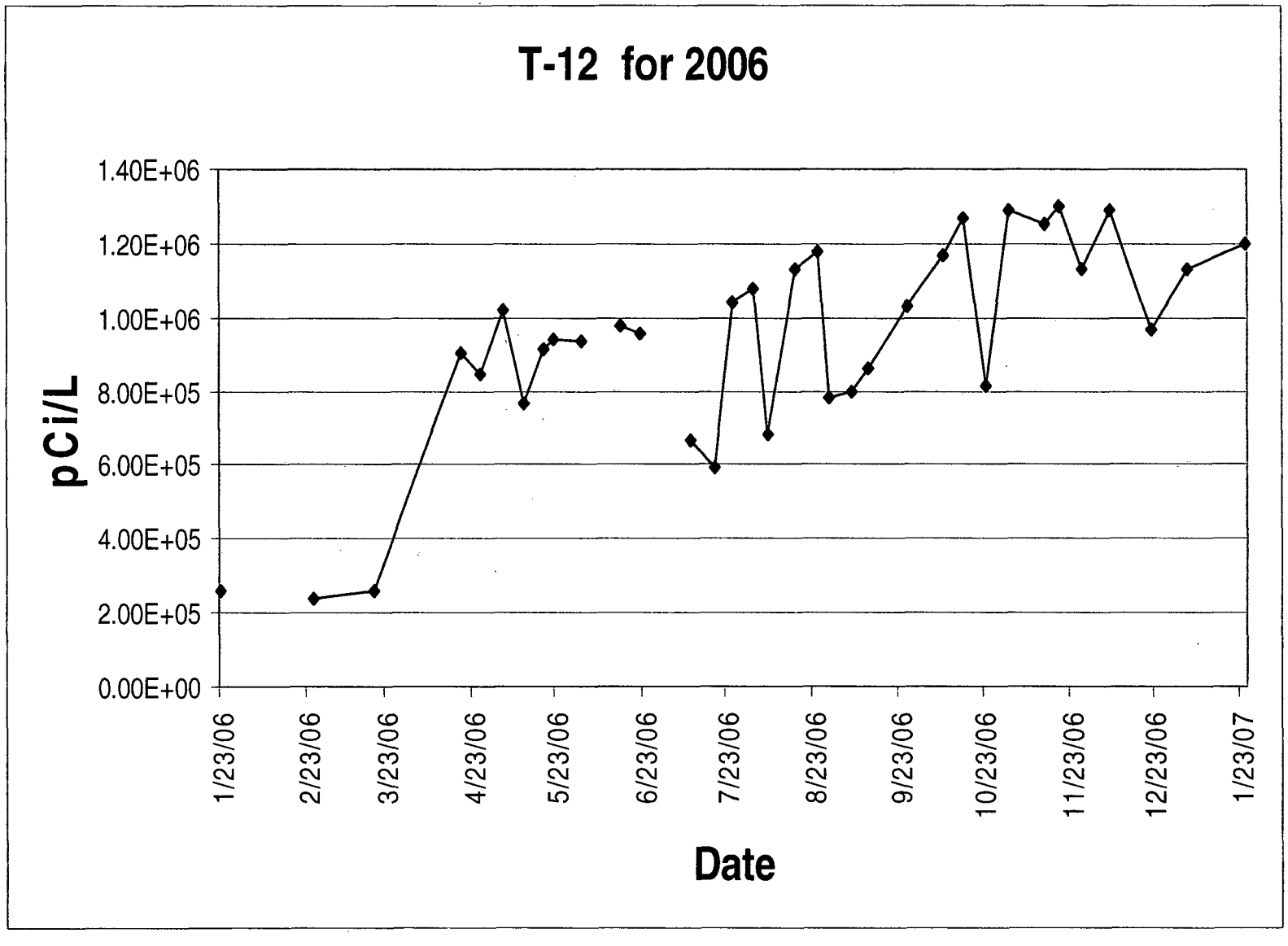
2A
7A
8A
12A
PY2
12A
DW1
DW2
DW3

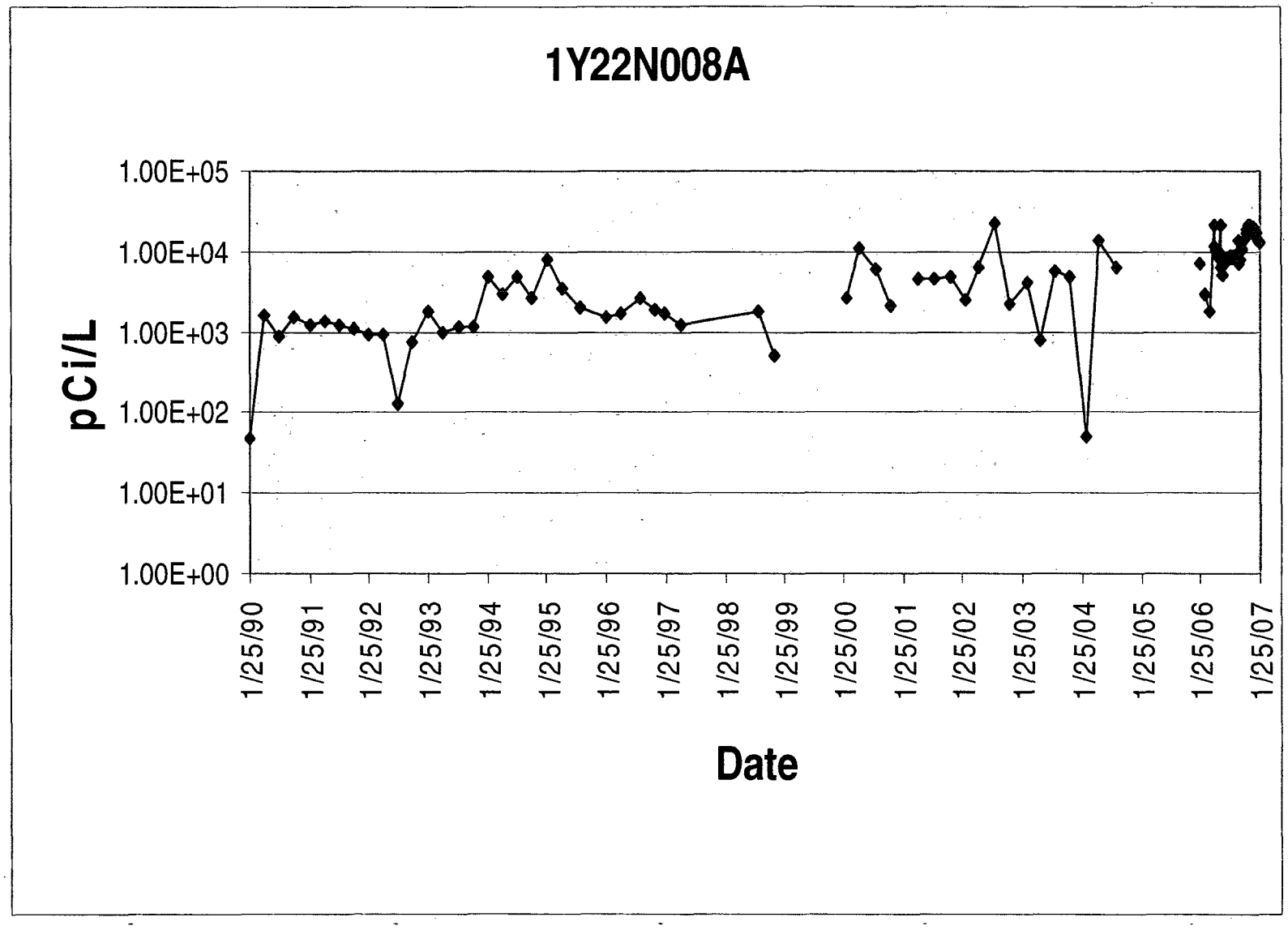

TOOMBS CO
APPLING CO
Water Tanks
Radio Tower
Substa
POWERPLANT
A
ALTAMAHA
PL-3
PL-21
Radio Tower
MPC
Bell Creek
RAILROAD
Creek

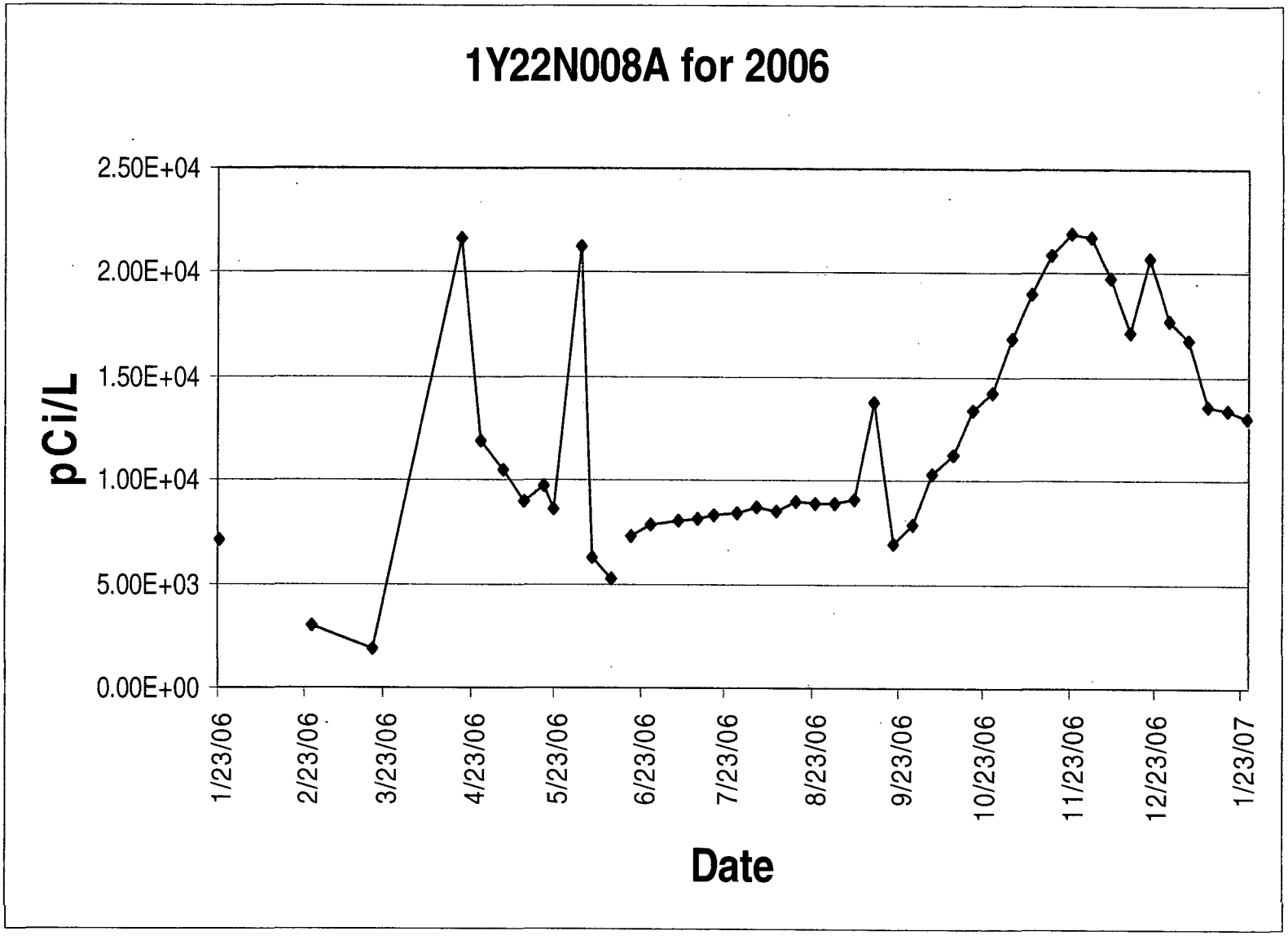
Y22-N008A

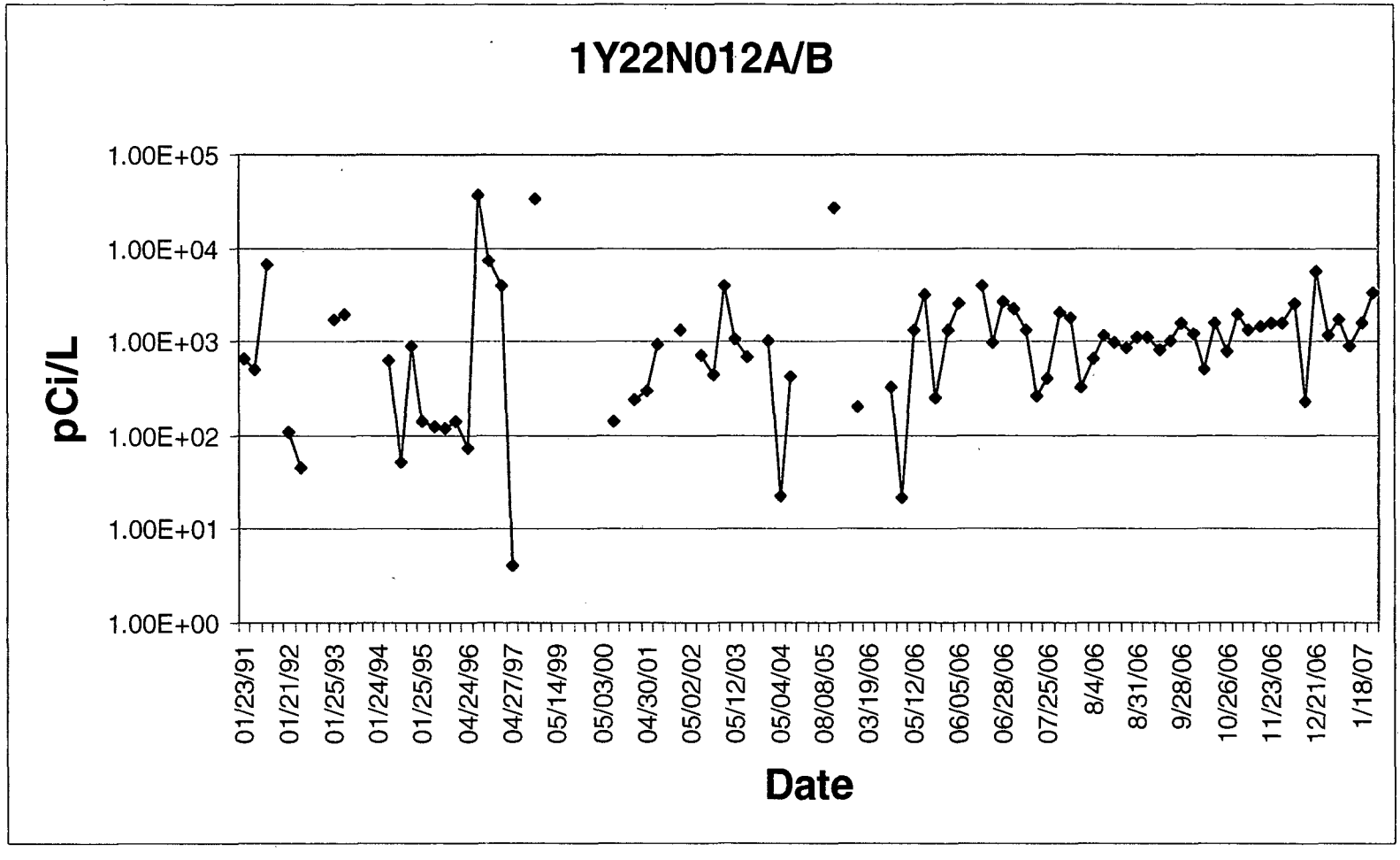

Y22-N002A


T-12 Tritium
pCi/L
1.00E+07
1.00E+06
1.00E+05
1.00E+04
1.00E+03
1.00E+02
1.00E+01
1.00E+00
1/8/85
1/8/86
1/8/87
1/8/88
1/8/89
1/8/90
1/8/91
1/8/92
1/8/93
1/8/94
1/8/95
1/8/96
1/8/97
1/8/98
1/8/99
1/8/00
1/8/01
1/8/02
1/8/03
1/8/04
1/8/05
1/8/06
1/8/07
Date


T-12 for 2006
pCi/L
1.40E+06
1.20E+06
1.00E+06
8.00E+05
6.00E+05
4.00E+05
2.00E+05
0.00E+00
1/23/06
2/23/06
3/23/06
4/23/06
5/23/06
6/23/06
7/23/06
8/23/06
9/23/06
10/23/06
11/23/06
12/23/06
1/23/07
Date


1Y22N008A
pCi/L
1.00E+05
1.00E+04
1.00E+03
1.00E+02
1.00E+01
1.00E+00
1/25/90
1/25/91
1/25/92
1/25/93
1/25/94
1/25/95
1/25/96
1/25/97
1/25/98
1/25/99
1/25/00
1/25/01
1/25/02
1/25/03
1/25/04
1/25/05
1/25/06
1/25/07
Date


1Y22N008A for 2006
pCi/L
2.50E+04
2.00E+04
1.50E+04
1.00E+04
5.00E+03
0.00E+00
1/23/06
2/23/06
3/23/06
4/23/06
5/23/06
6/23/06
7/23/06
8/23/06
9/23/06
10/23/06
11/23/06
12/23/06
1/23/07
Date


1Y22N012A/B
pCi/L
1.00E+05
1.00E+04
1.00E+03
1.00E+02
1.00E+01
1.00E+00
01/23/91
01/21/92
01/25/93
01/24/94
01/25/95
04/24/96
04/27/97
05/14/99
05/03/00
04/30/01
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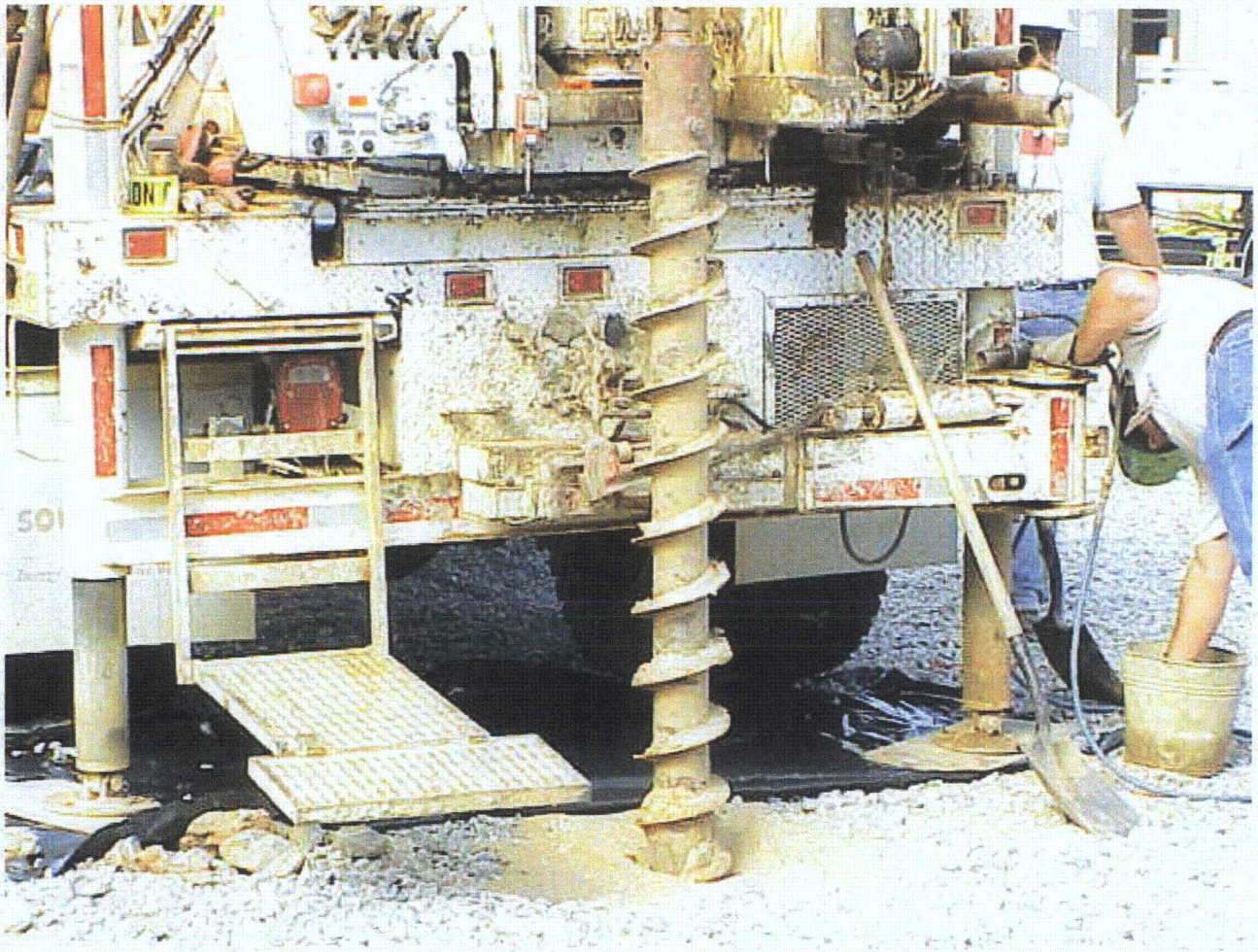

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