# Tritium Monitoring

## Dresden Station Chemistry

C-11

# HPCI Suction Leak

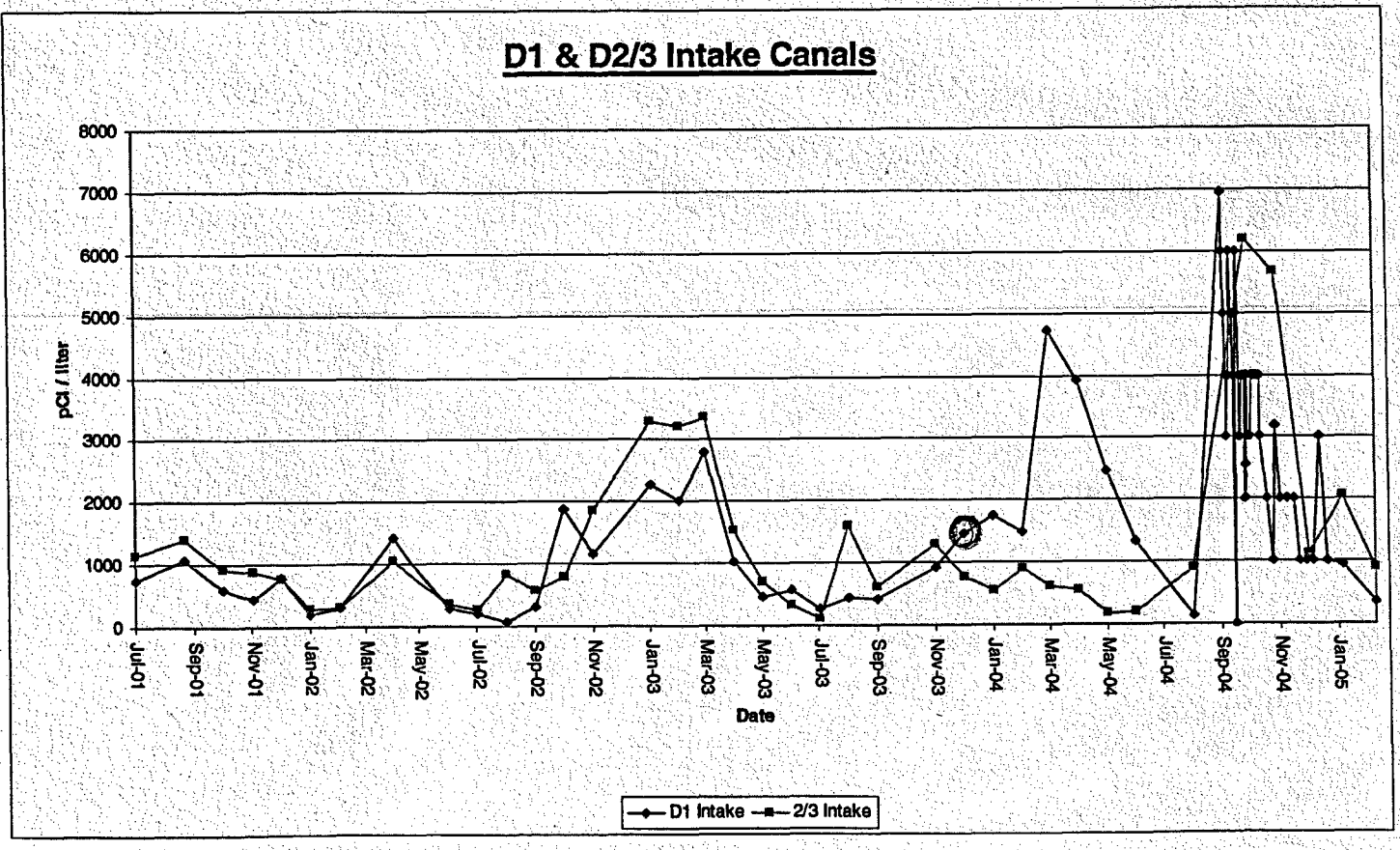
- Sampling performed on July 31, 2004 had substantial levels of tritium
  - W-3 6,125,891 pCi/L
  - W-1 3,613,931 pCi/L
  - T-6 1,960,331 pCi/L

- Dresden IR 248494

# HPCI Suction Leak

- Area was excavated
- Leak determined to be located under liquid nitrogen storage tanks
- Suction line from Condensate Storage Tank sealed with bladder 10-20-04
- Start date of leak determined from Unit 1 Intake tritium concentrations

# Intake tritium



# Activity Released

- Activity concentrations
  - Condensate Storage Tank tritium
  - Wastewater Treatment effluent Co-60
  - Storm Sewer effluent Co-60
- Volume
  - Based on leak rate from pressure testing of abandoned piping at end of repair

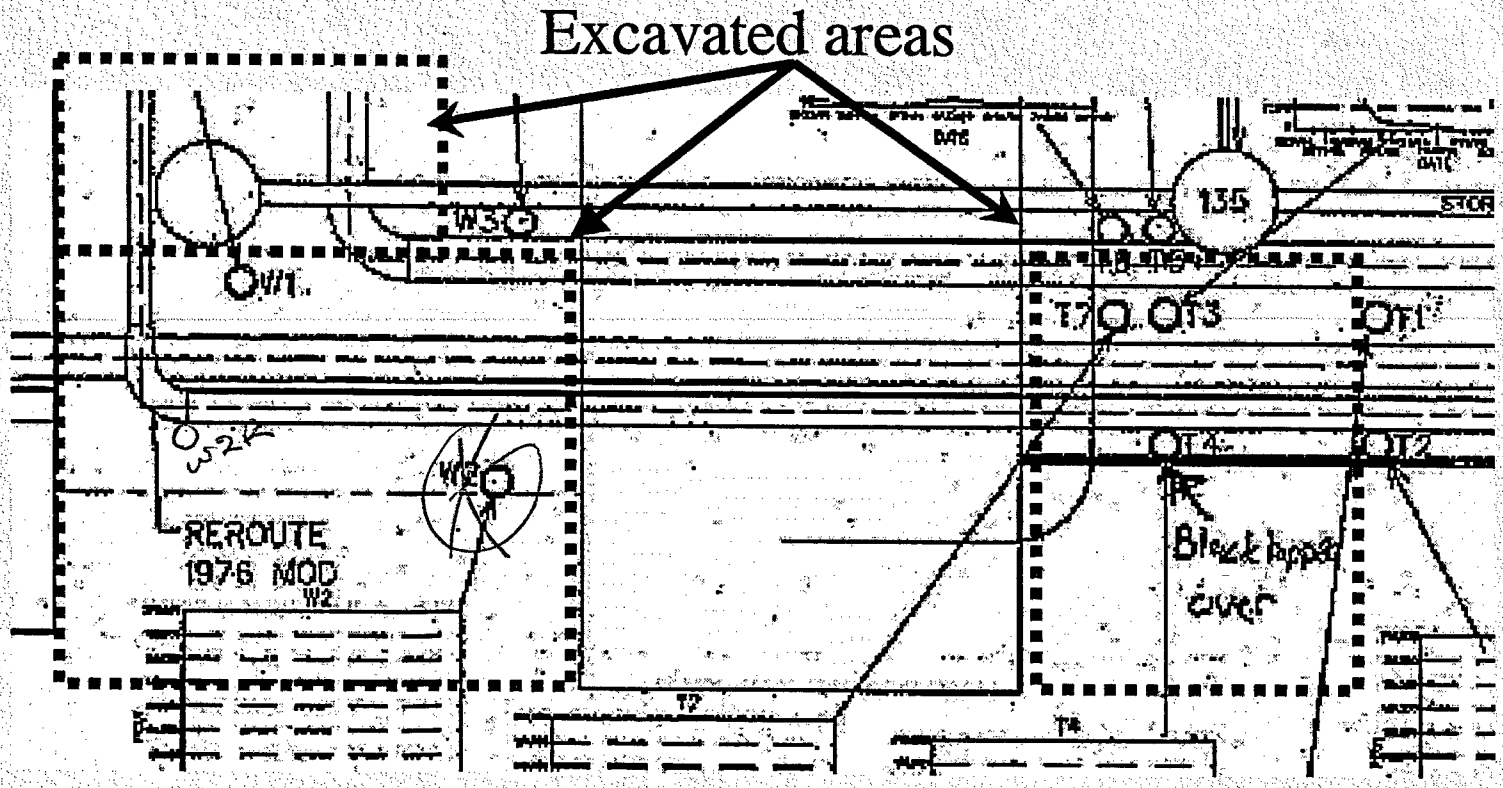
# Activity Released

- Total of 21.2 Ci tritium released
  - 18.1 Ci in 2004, 3.08 Ci in 2003
- 5.66E-06 Ci Co-60 released in 2004
- Captured in Dresden Abnormal Release (DAR) Report DAR-2004-02
- Will be reported in 2004 Annual Radioactive Effluent Release Report

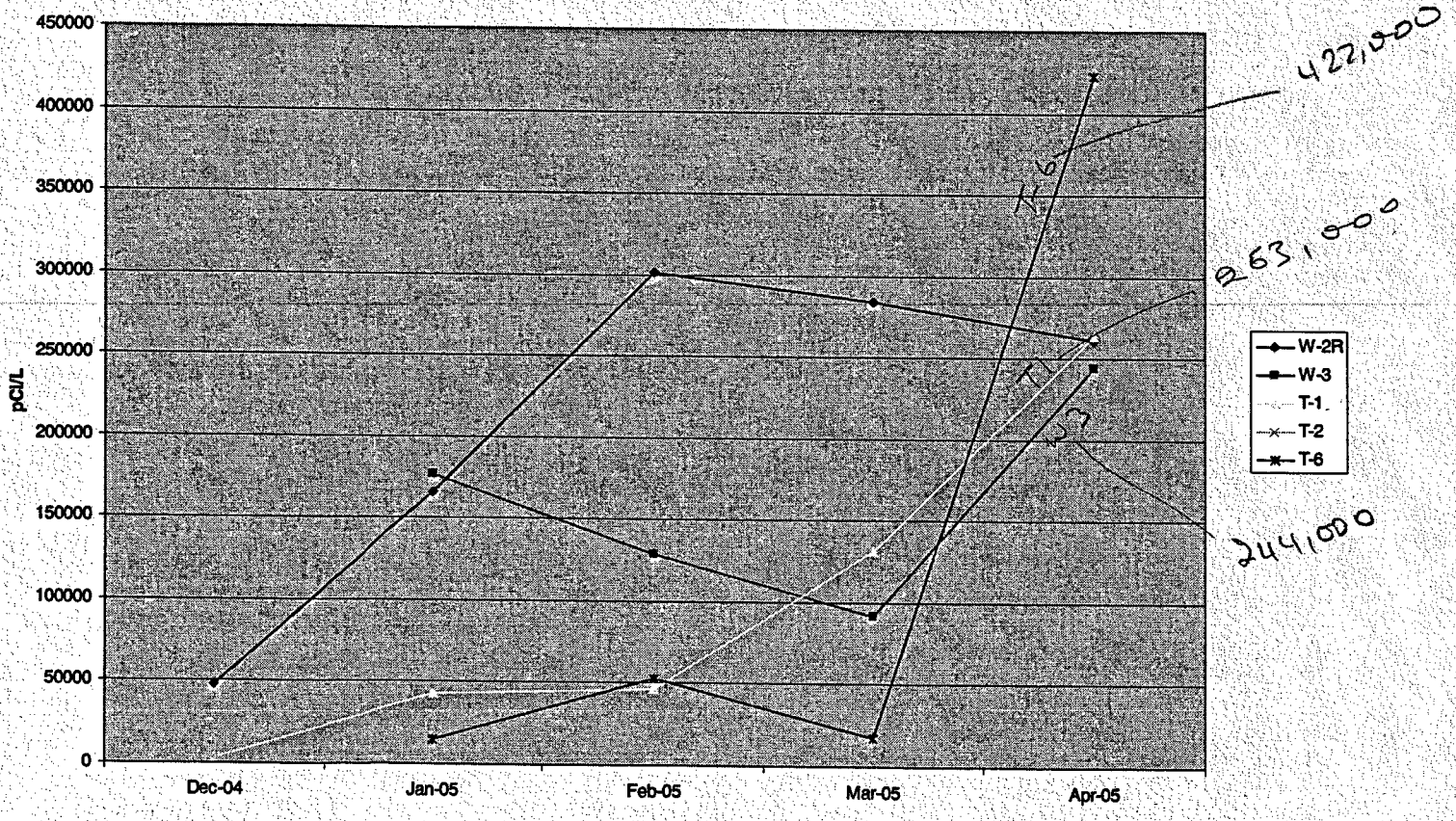
# Dose to the Public

| | Dose / dose equivalent | Dresden ODCM Limits | |
|---|---|---|---|
| | | Quarterly Limit | Annual Limit |
| Total Body (mrem) | 1.33E-04 | 3 | 6 |
| Organ (mrem) | 1.33E-04 | 10 | 20 |
| Organ | GI_LLI | | |

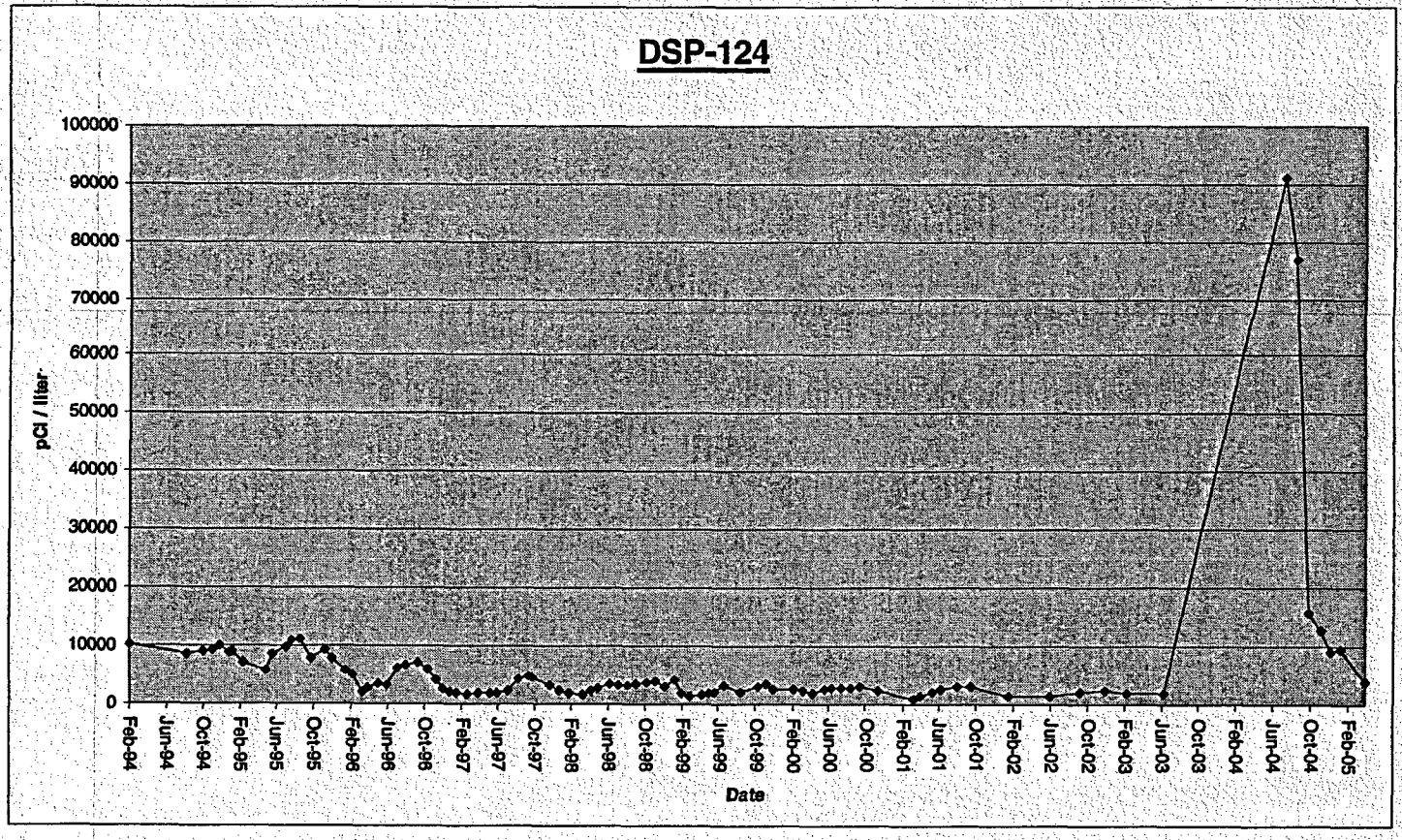
# Area Map


Excavated areas
W3
W1
W2
135
T7
OT3
OT1
OT4
OT2
REROUTE
1976 MOD
W2
Blacktopped
over
T2
T4

# Wells near Excavation

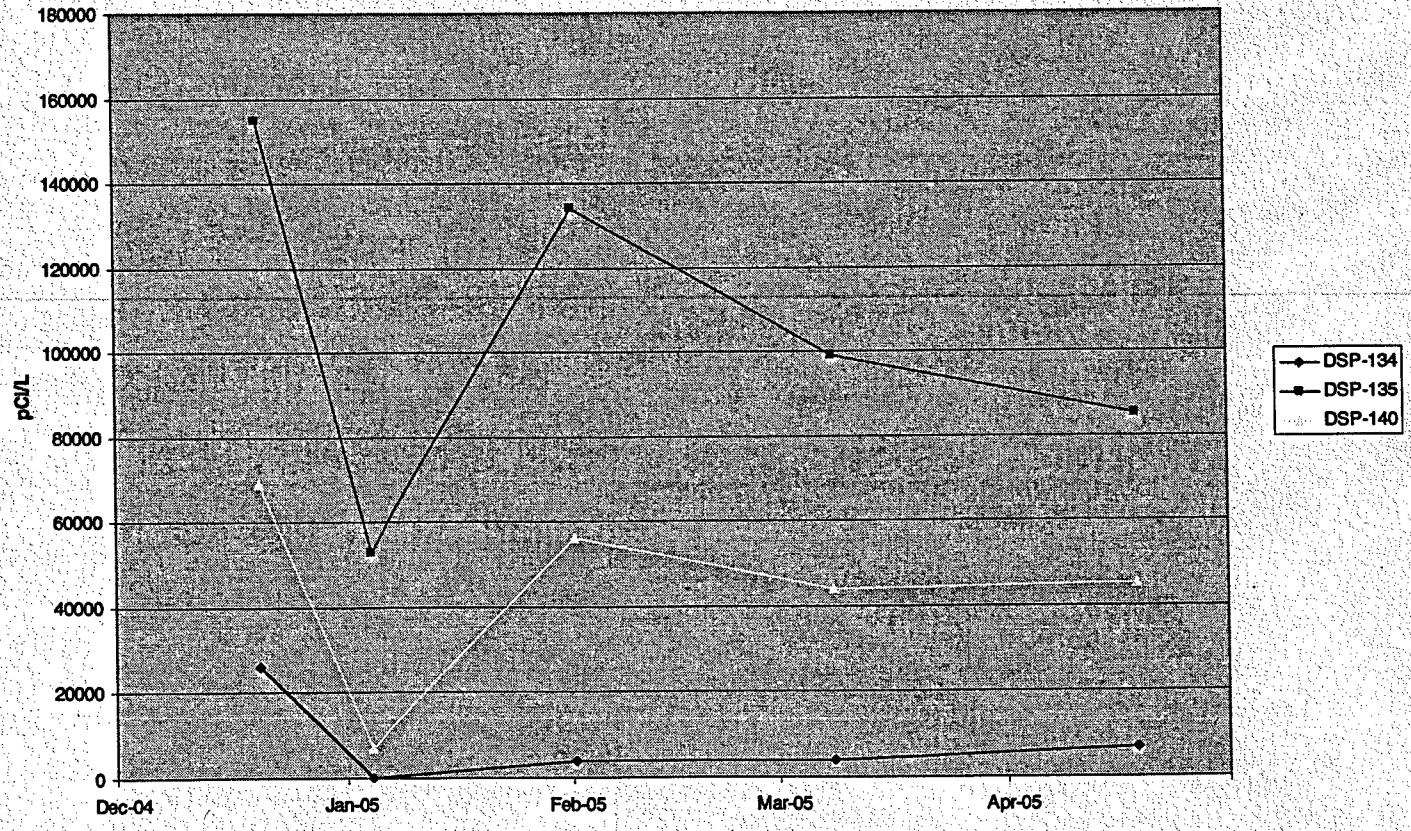


# Intermediate Well



# Storm Sewers

Monthly sample



# Current Assessment

- Baby wells near excavation are increasing
  - Levels are less than at leak discovery
  - Contracted expert's opinion is that this is likely due to the plume from previous leak
- Storm drains are steadily decreasing
- Intermediate well in area dropping quickly
- No significant leaks are suspected

# Moving forward

- Contracted expert's published evaluation and remediation plan due 7-12-05
- Continue monitoring at increased frequency until tritium levels return to background levels
- Implement long term monitoring, add to Off-site Dose Calculation Manual