



Vapor Intrusion at a Former Dry Cleaner in Southeast Wisconsin

When bad things
happen to good
people....

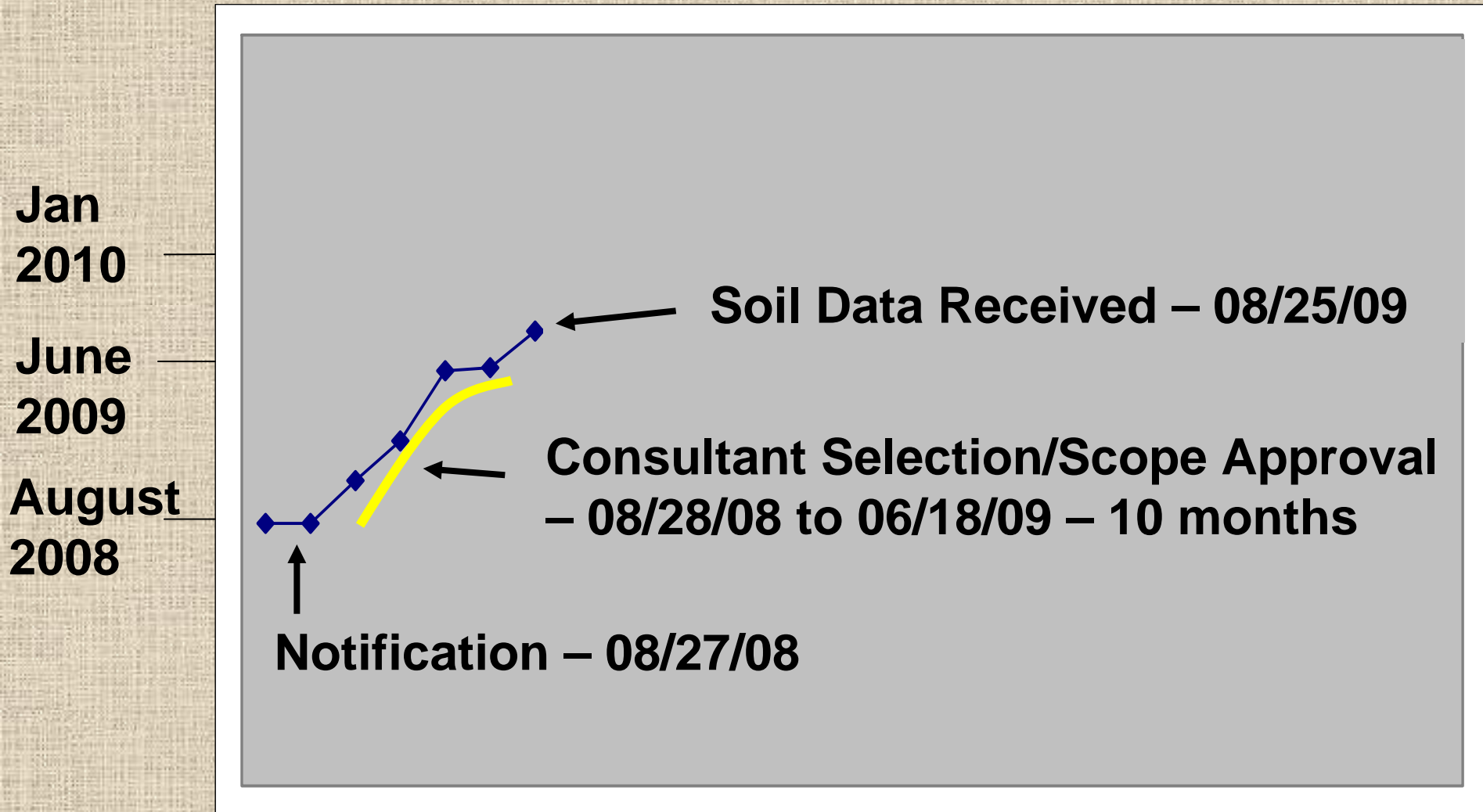
**Working with
State and Local
Health
Departments**

- **2 story, stand-alone building**
- **1st level now vacant – formerly occupied by dry cleaner**
- **2 apartments occupy second level**

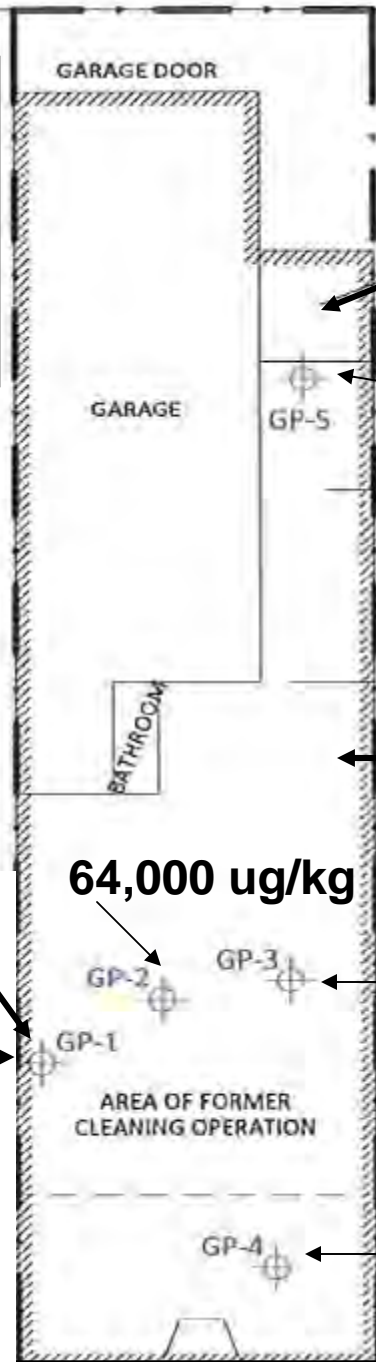


- **Concrete block**
- **Slab on grade**
- **Garage under north apartment**

Timeline of Actions



Shallow soil – PCE concentrations



Boiler room – former drum storage

18,000 ug/kg

Staining on floor

Hole in floor

64,000 ug/kg

1,900 ug/kg

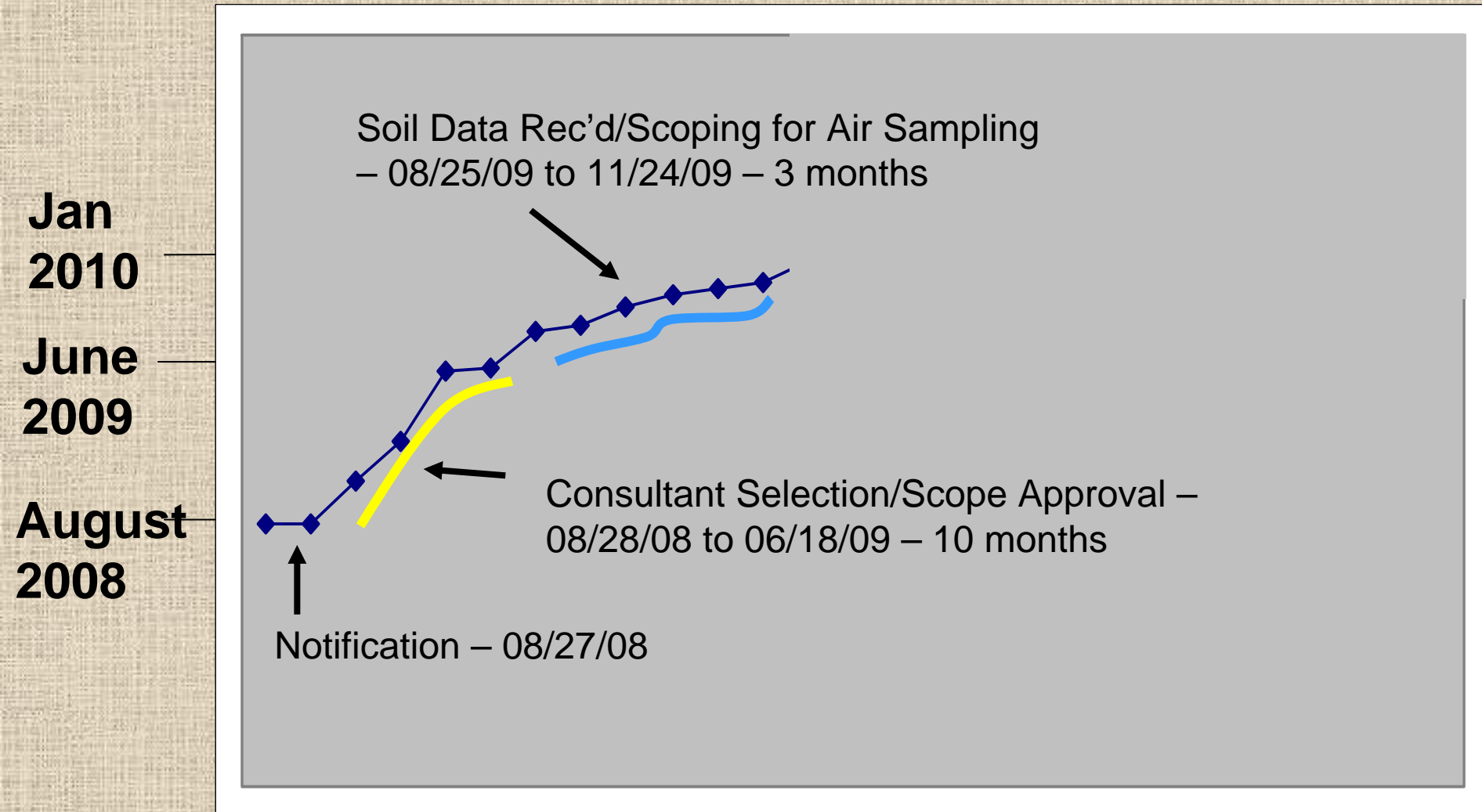
48 ug/kg

AREA OF FORMER CLEANING OPERATION

32 ug/kg



Timeline of Actions



First Level – former drycleaner space – now vacant



**East wall – floor stained
– GP3 in bottom left
corner (1,900 ug/kg PCE)**



**South end – front of
store**

Standing on the approximate location of GP-5

(18,000 ug/kg PCE)

Looking south towards store front area



Looking north into boiler room



Sewer Repair resulted in floor opening – direct pathway for vapor migration



West wall, beneath the south apartment



Close-up of hole

Indoor air sample locations - apartments



Outdoor (Background) Sample



Air Sample Results – Tetrachlorethylene (ppbv)

DNR Target Level = .603 ppbv

Health Department Action Level = **6.03 ppbv**

Date	South Apartment	North Apartment
12/09/09	52	264
1/11/10	11.5	26.1
Date	Main Level – Former DC space	
12/09/09	40	
01/11/10	1.5	

Outside
ND
ND

January 11 to 25th, 2010

**Building owner personally
undertakes intervention
measures**



Installed vent fan to vent the sub-slab airspace on the first floor

01.26.2010

Sealed concrete block spaces in back part of first level



01.26.2010


A photograph showing the interior corner of a boiler room. The walls are made of light-colored concrete blocks. The floor is a dark, smooth material. A row of small, yellowish, circular seals or fasteners is visible along the base of the walls, indicating a sealing process. The left side of the image shows a metal door frame with some rust. The right side shows a white wall or door frame.

**Boiler Room
floor and wall
sealing**

01.26.2010

**Removed
carpet –
Cleaned and
sealed floor
cracks on
first level**





**Sealed
hole
around
sewer
pipe on
first level**

01.26.2010

Sealed utility penetrations leading to the second floor apartments



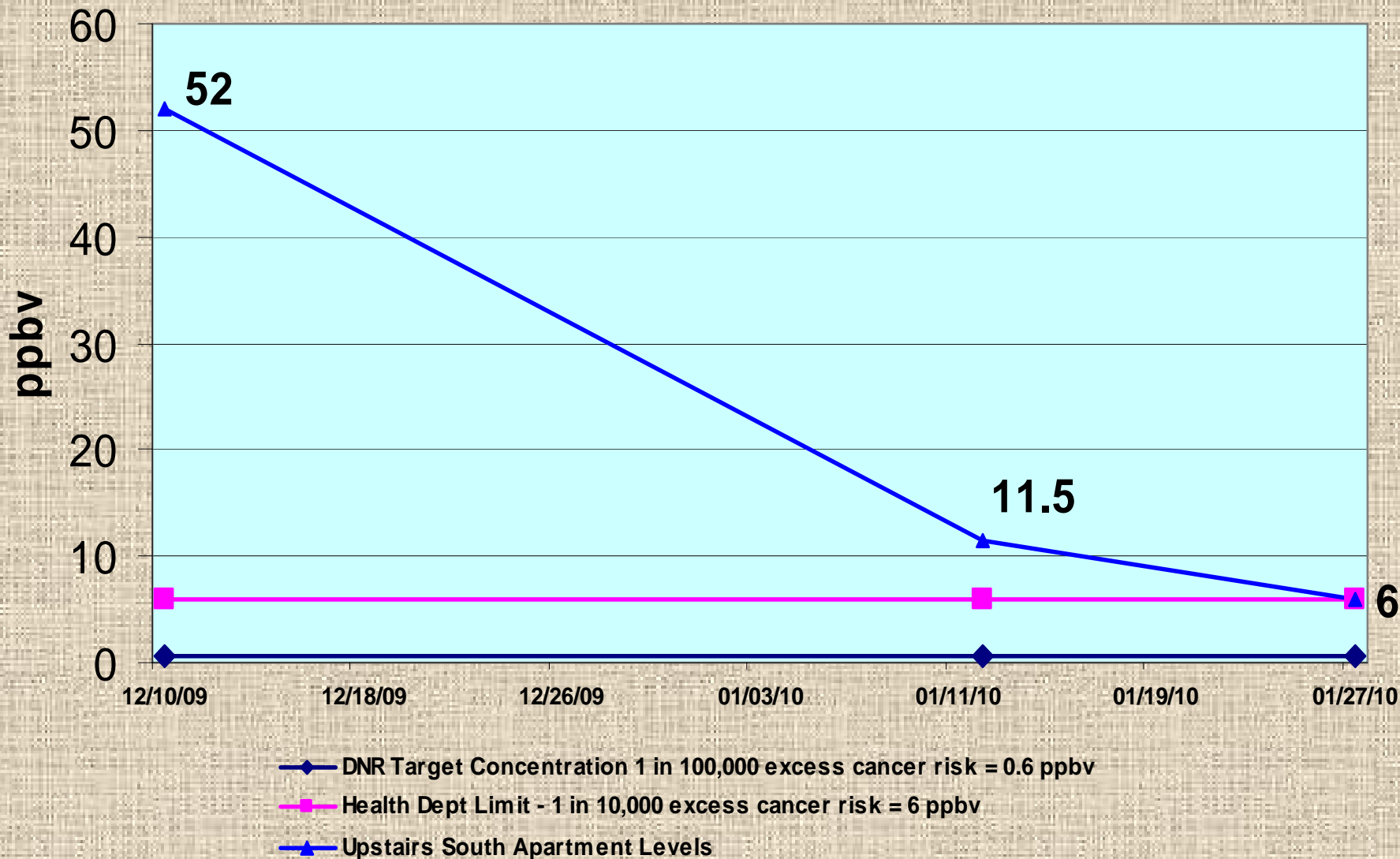
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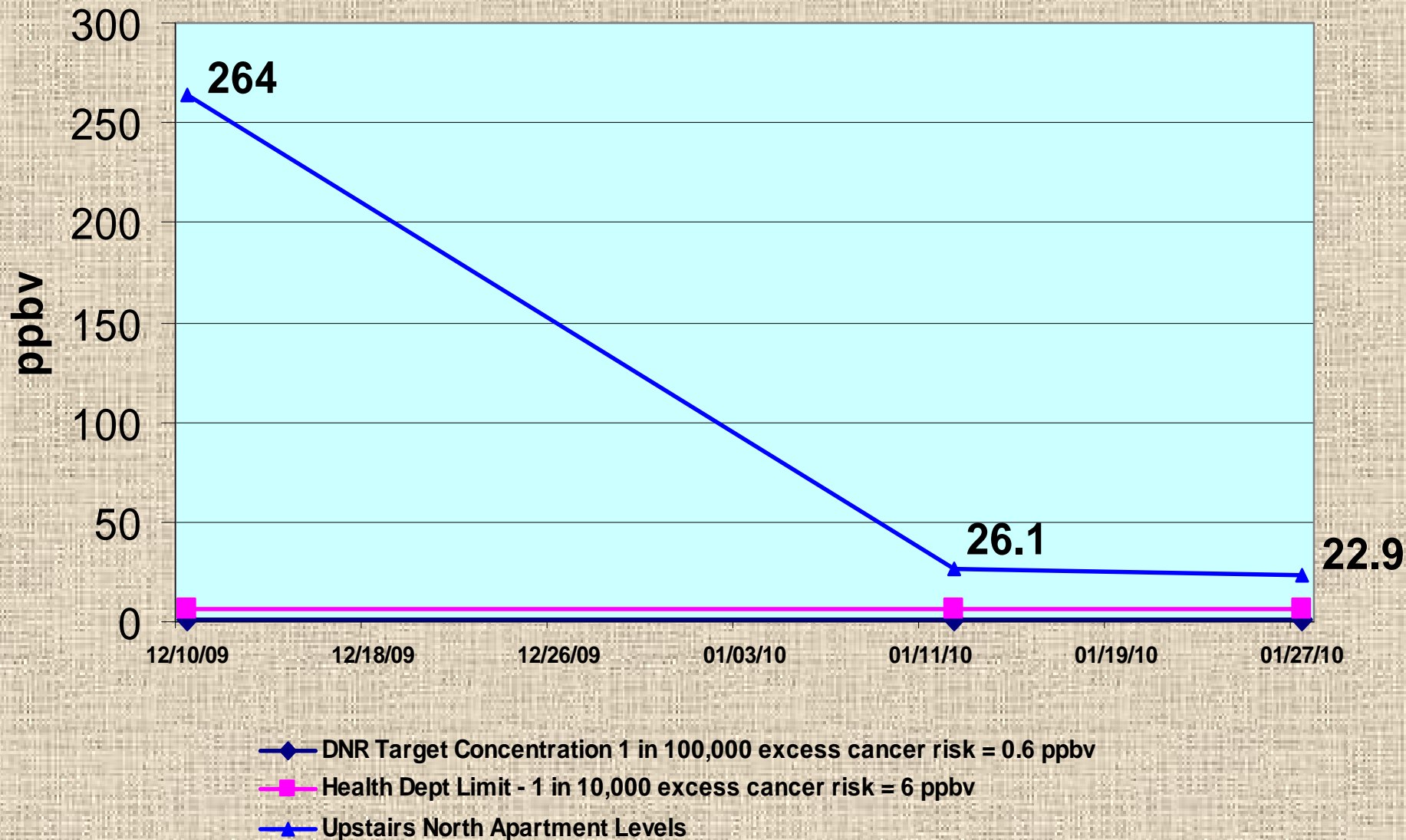
Health Department Action Level = **6.03 ppbv**

Date	South Apartment	North Apartment	Outside
12/09/09	52	264	ND
1/11/10	11.5	26.1	ND
1/26/10	6	22.9	ND
Date	Main Level – Former DC space		
12/09/09	40		
01/11/10	1.5		
01/26/10	4.3		

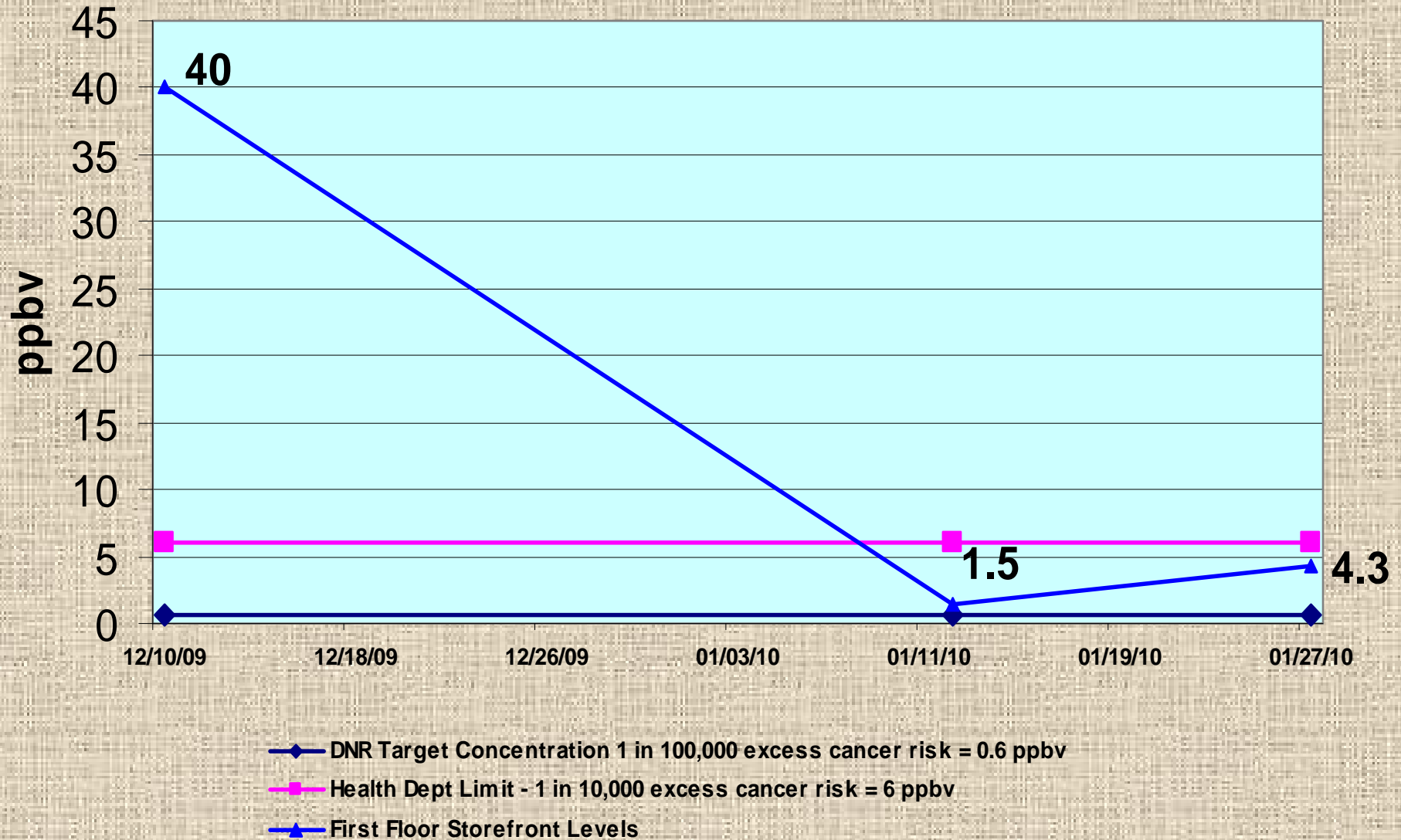
PCE concentrations in indoor air vs. Agency targets (Upstairs South Apartment)



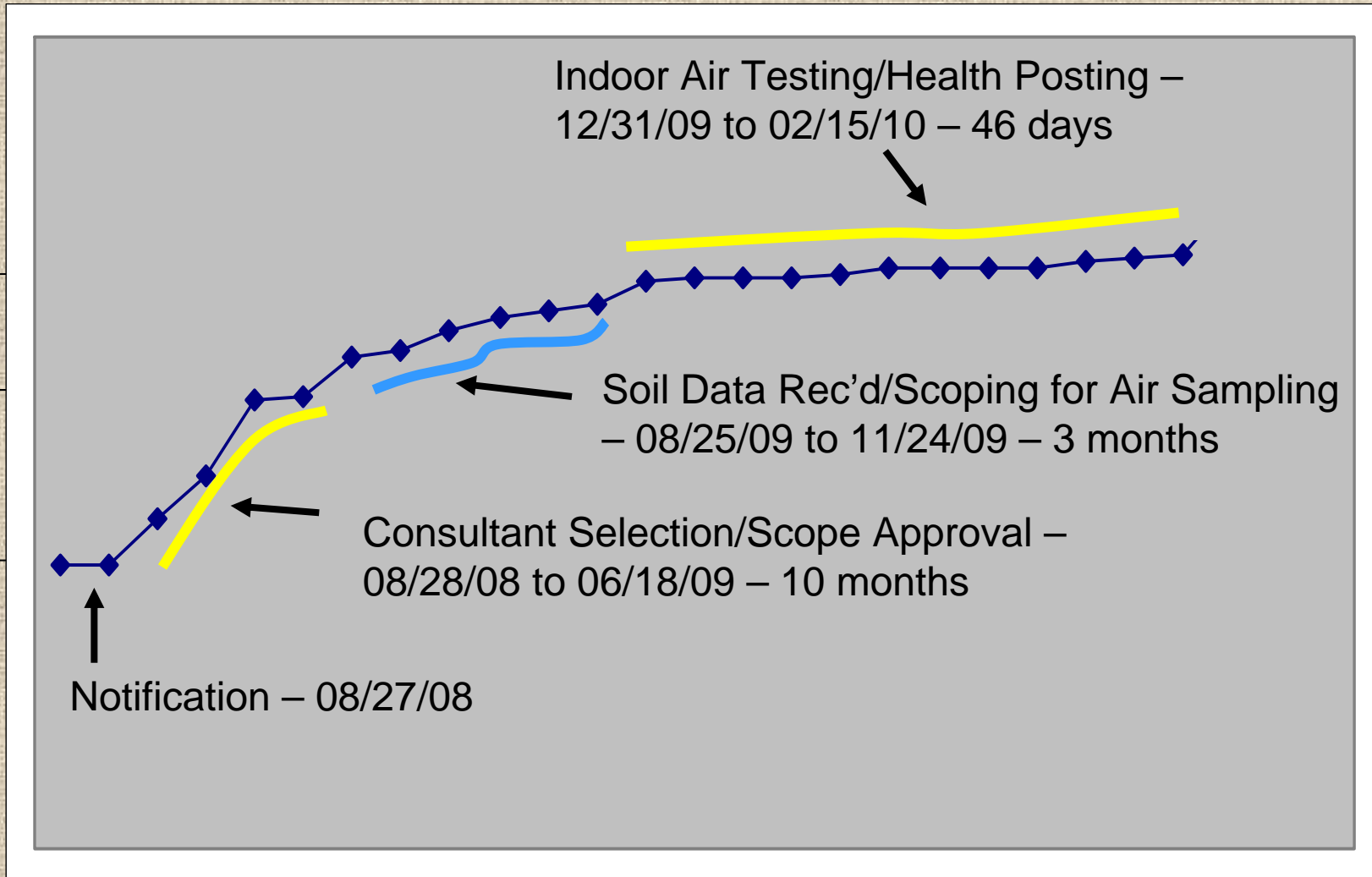
PCE concentrations in indoor air vs. Agency targets (Upstairs North Apartment)



PCE concentrations in indoor air vs. Agency targets (First Floor Storefront)



Timeline of Actions



2011 Update

- **Owner has received DERF reimbursement for investigation and mitigation actions taken through February 2010**
- **Building remains unoccupied since February 2010**
- **Mitigation fan has been running since installation**
- **Owner has cleaned, sealed and painted floor in first level**
- **Added a small fan to vent sub-floor space below boiler room**
- **Cleaned interior walls of apartments (carpet cleaned or replaced)**

Special Thanks to:

- Henry Nehls Lowe – for responsive, calm, thoughtful approach
- Terry Evanson – for providing a sounding board for technical and policy issues
- South Milwaukee Health Department – for willingness to learn, cooperative actions and taking the lead on health department response