



Poway Community Meeting

Jack Miller
County of San Diego
Solid Waste Local Enforcement Agency

March 30, 2006



Who are we?



- County of San Diego
Department of Environmental Health
Solid Waste Local Enforcement Agency
- California Environmental Protection Agency
Regional Water Quality Control Board
- County of San Diego
Department of Public Works
Landfill Management



What are our roles?



Regulators:

- County LEA regulates landfill gas, health and safety
- Regional Board protects water quality

Operator:

- County Public Works maintains the landfill and control systems



Why are we here?



- Share information about Poway Landfill
- Discuss what has been found
- Inform you what is being done and answer your questions
- Share with you future actions and how you will kept informed





Garden Road Neighborhood



- Drinking water is piped in under pressure from the Poway City water services
- Public drinking water is safe to drink
- Groundwater under this neighborhood is not used for household purposes
- Landfill gas (primarily methane) is extracted from the landfill and burned off in the flare system
- Methane has not been found offsite and does not pose a fire or explosion risk in the neighborhood



Background on Poway Landfill

- Operated by the County of San Diego Public Works (DPW) from 1949 -1975
- Landfill occupies 14 acres, contains 165,000 tons of waste, averages 30 feet deep
- Accepted residential, commercial and agricultural waste
- Industrial, chemical or liquid wastes were not permitted



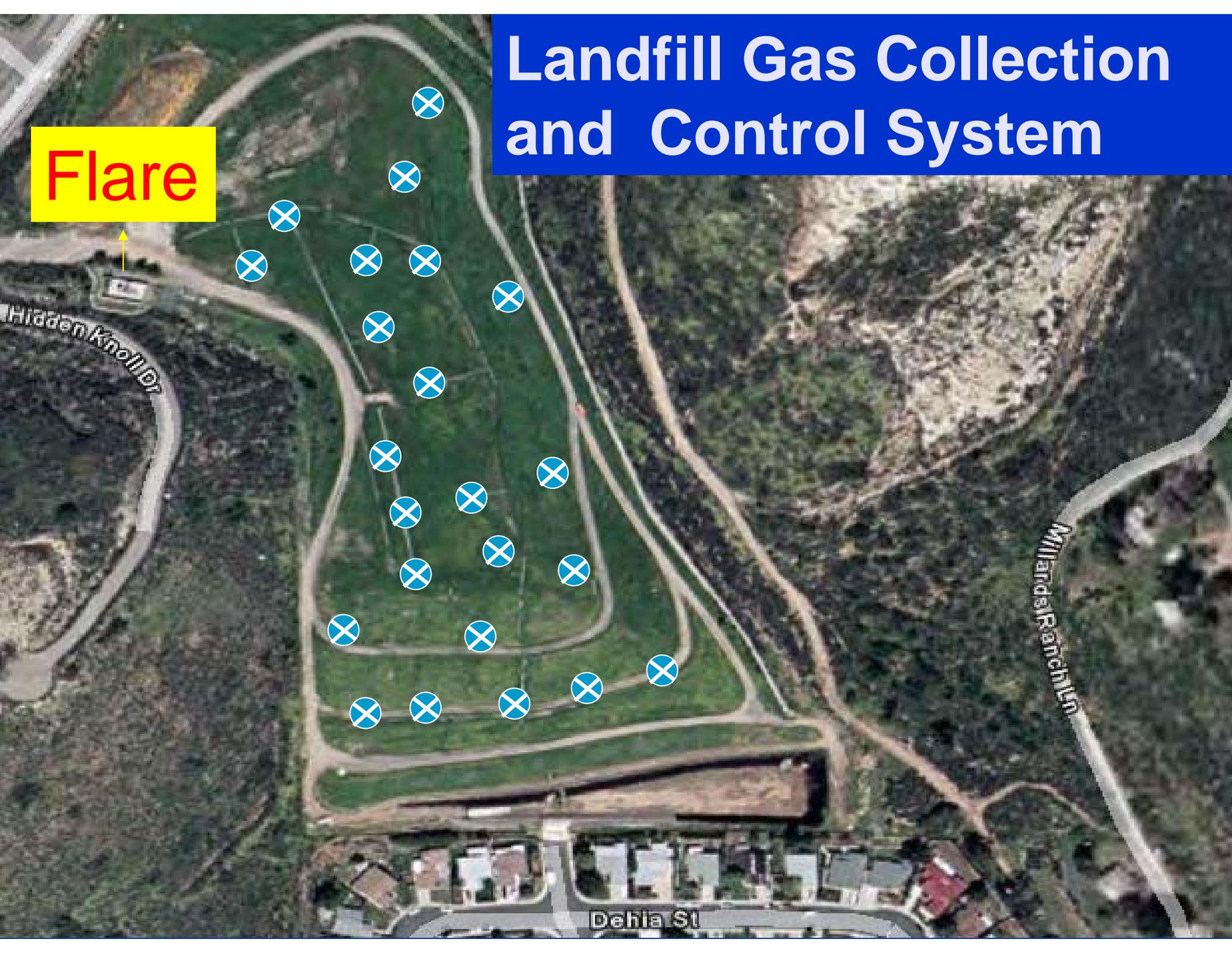
Design of the Landfill



- Has 3-5 foot clay and soil cover over trash
- Has a landfill gas collection and control system:
 - Gas collection wells
 - Piping and flare station
- Has Environmental Monitoring Systems:
 - Landfill Gas
 - Groundwater/Stormwater
 - Soil vapor

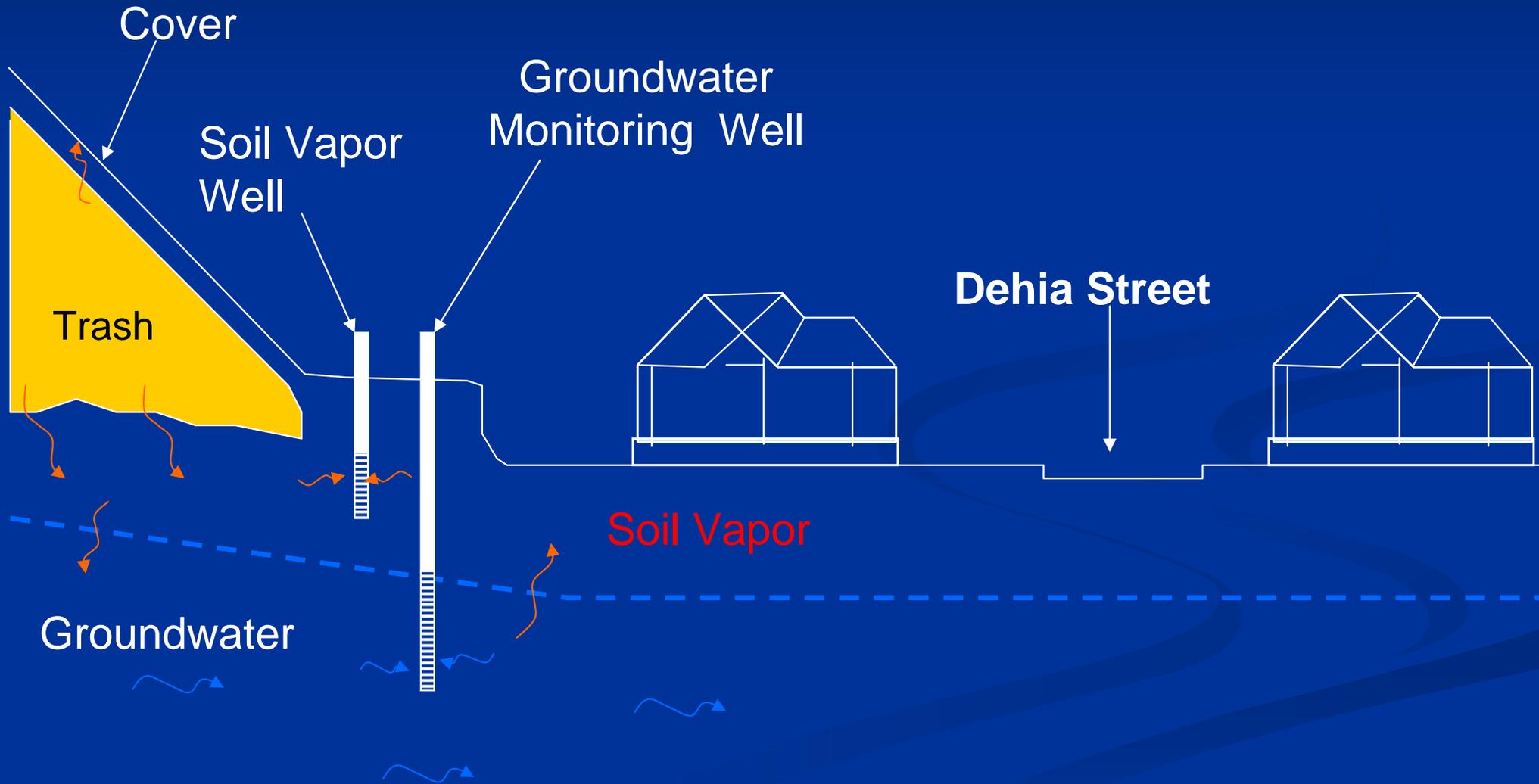
Landfill Gas Collection and Control System

Flare



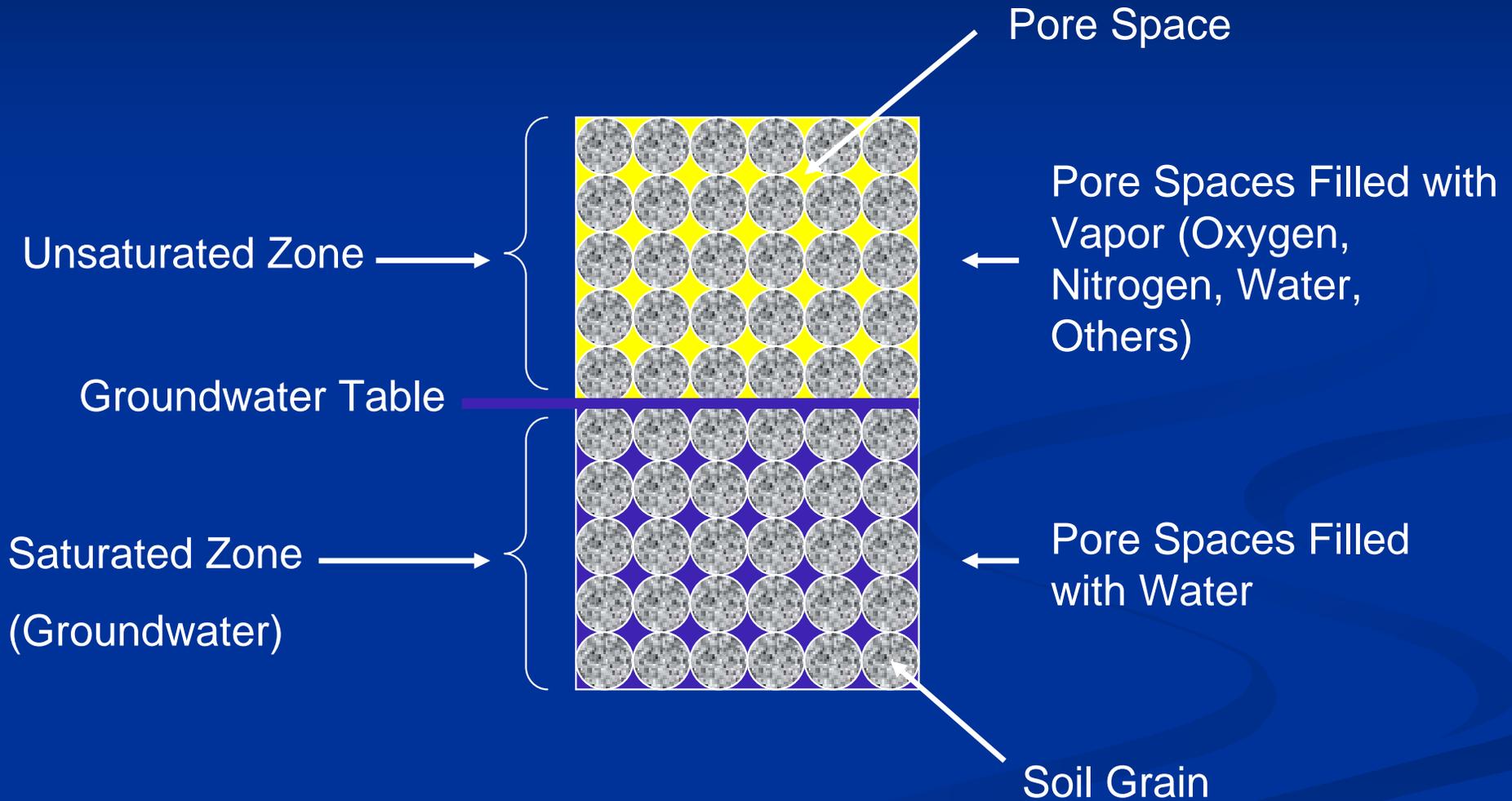


Where do we look for contaminates?





Groundwater and Soil Vapor





What is routinely monitored?



Water quality:

- Test wells at least twice per year
- Test surface water during storm events

Landfill gas:

- Monthly monitoring of gas levels
- Control of landfill gas on site



What was found?



- Low levels of trichloroethylene (TCE) and tetrachloroethylene (PCE) solvents in ground water on the landfill
- Low levels of solvents in the soil vapor, including benzene on and off the landfill
- Benzene was not found in outdoor air

County Public
Works
will discuss findings





County of San Diego Department of Public Works

Candace Gibson



What has been done?

- ***Groundwater***
 - ***1991 - Routine testing***
 - ***1994 – RWQCB requests additional testing and landfill gas collection system***
 - ***1994 – Additional testing***
 - ***1996 - Landfill gas collection system***
 - ***1999-2006***
 - ***15 wells***
 - ***Groundwater treatment system***



**Groundwater
Investigations
1991 - 2006**



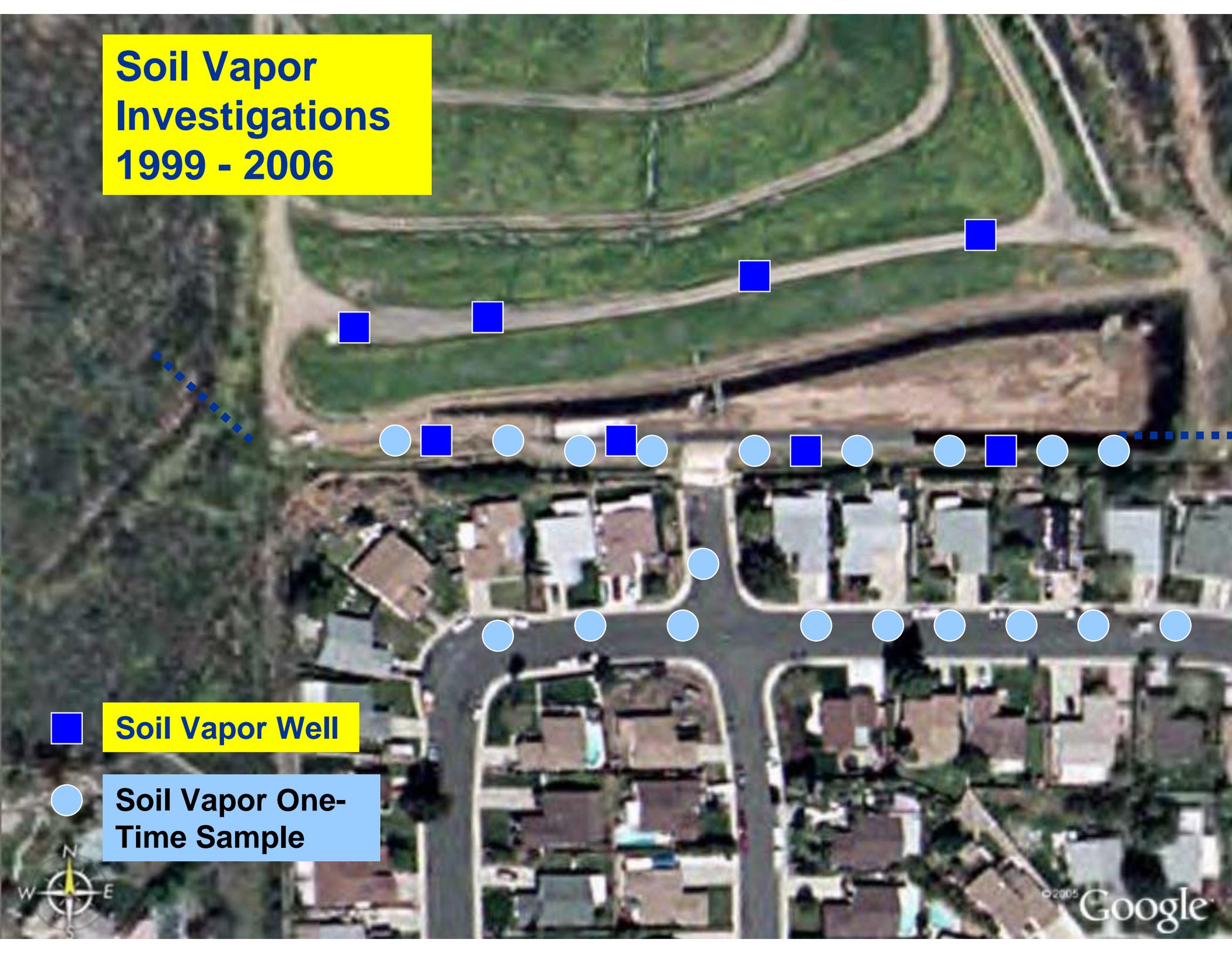
What has been done?

- ***Soil Vapor***
 - ***1988 – 1996***
 - ***Air study on landfill***
 - ***Landfill gas collection system***
 - ***1999 - Soil vapor samples***
 - ***2000 – Seven gas collection wells***
 - ***2004 – 2006***
 - ***35 one-time soil vapor samples***
 - ***ambient air samples***
 - ***8 soil vapor test wells on property***

Soil Vapor Investigations 1999 - 2006

■ Soil Vapor Well

○ Soil Vapor One-Time Sample





What are we doing right now?

- Testing groundwater treatment system
- Reviewing landfill gas collection system
- Reviewing new data from new wells installed last week.
- Scheduling additional work
- Responding to regulatory agency requirements



What happens next?

More testing

- o 22 new soil vapor wells in street

WITH PROPERTY OWNERS PERMISSION:

- o One-time soil vapor samples on private properties
- o Possible indoor air sampling

**Proposed
Additional Soil
Vapor Wells**





What are some options?

- **Improve Landfill Gas System**
- **Soil Vapor Extraction**
- **Air Curtain**
- **Other**



When will this happen?

- April 17 – Installation of soil vapor wells in street
- April 24 – Testing new wells
- May 1 - Private property testing (if permitted)
- June 30 - Report completion





What do we know now?



- **Air:** No benzene or other chemicals in outdoor air samples
- **Soil Vapor:** Samples collected below street had low levels of benzene and solvents
- **Ground Water:** No benzene, TCE or PCE were found in the offsite ground water wells in the neighborhood during recent testing



What is benzene?



It is:

- solvent
- component of gasoline and found at gas stations
- found in vehicle exhaust
- found in cigarette smoke
- used to make plastics, resins, glues, detergents, paints and furniture wax
- by-product of forest fires



Exposure to Benzene



- In the U.S., average benzene in outdoor air ranges from 0.02 to 34 parts per billion
- 49 parts per billion of benzene found in soil vapor beneath Dehia Street
- One part per billion equal to one drop in 40,000 gallon swimming pool
- People in cities exposed to higher levels of benzene than rural areas and smokers are exposed to 10 times more benzene than nonsmokers
- Benzene levels are generally higher inside homes than outside



What are health impacts of Benzene?



- Exposures to high concentrations of benzene cause detrimental health effects.
- Long-term exposure to high levels can cause leukemia
- Informational bulletin from Agency for Toxic Substances and Disease Registry
- More testing needed to determine actual levels of chemicals and location to better define risk



Health Risk Assessment

- Two health risk models were run using the available preliminary data
- The data indicates risk below generally accepted risk levels with one model and a slightly elevated risk with the other model



Risk Model Assumptions

- The highest concentration of each chemical detected was used in the models
- These concentrations were assumed to be 5-feet directly below a hypothetical residence
- The models assumed no or very limited protection was provided by the foundation slab
- The models use very conservative, health protective assumptions: such as a 30-year, 24-hour a day, 350-days per year exposure to the chemicals at the highest detected concentrations



Risk Model Results

- A less than one in a million (1 in 1,000,000) excess cancer risk is generally considered to be below levels of concern
- Using the collected data and conservative assumptions:
 - One model showed less than a 1 in 1,000,000 excess cancer risk
 - One model showed up to a 4 in 1,000,000 excess cancer risk



Risk in Perspective

- The American Cancer Society has estimated the lifetime risk of developing cancer from all causes is:
 - American Female : 1 in 3
 - American Male 1 in 2



What can you do?

- Educate yourself
- Web page at www.sdcdeh.org will be updated with information as it is received
- Complete form so we can send e-mail alert when new information is available
- Attend future meetings
- Allow sampling on your property, if asked



When will we know more?



- Sampling and analysis of the results should be available in June
- Follow up meetings will be held when we have the results



For more information visit:

- Poway Library will have copies of all reports, and the information and will be kept current
- LEA web site www.sdcdeh.org
 - Links to the Regional Water Quality Control Board system where the current reports are posted
 - Updated information
 - Frequently asked questions



County of San Diego

Solid Waste

Local Enforcement Agency

POINTS OF CONTACT:

Kerry McNeill: 858-694-2629

kerry.mcneill@sdcounty.ca.gov

Melissa Porter: 858-694-2801

melissa.porter@sdcounty.ca.gov



California Regional Water Quality Control Board San Diego

POINT OF CONTACT:

Kelly Dorsey

858-467-2980

kdorsey@waterboards.ca.gov



County of San Diego Department of Public Works Landfill Management

POINTS OF CONTACT:

Candace Gibson: 858-495-5447

candace.gibson@sdcounty.ca.gov

Barry Pulver: 858-495-5480

barry.pulver@sdcounty.ca.gov