

Cave Creek Landfill Groundwater Investigation

March 2, 2011 - Public Meeting



Overview



- The County has heard the Community's concerns and is striving to address those concerns
- Public Health & Safety is the County's highest priority
- Completing this project quickly benefits everyone
- Our approach is designed to complete this project quickly and limit the impact on the Community

Meeting Organization



- This public meeting will last approximately one hour and will be conducted in two parts, that will include:
 - **A technical presentation** that is intended to:
 - address concerns already expressed by residents
 - clarify the details of the project
 - **A Question & Answer session** will be offered at the end of the presentation to field additional questions and comments

What we've heard so far...



- Stop work at TB-7
- Communication on the project as a whole could be more complete and more frequent
- Information on the most recent activity could have been delivered with greater notice.
- Concerns about physical and chemical safety
- Concerns about possible chemical exposures and risks from
 - Groundwater
 - Groundwater brought to the surface
 - Chemicals in the air

What we've heard so far...



- Why test at all the different sites?
- Why not remediate now?
- Is the County committed to remediate the problem once the plume is identified?
- Why is it important to do it [investigate] now?

The County is Listening



- We've stopped work at TB-7
- We are conducting this informational meeting
- We are creating website that will serve as an online document repository
- Email additional questions to Cari Gerchick at:
gerchickc@mail.maricopa.gov



A Culture of Safety

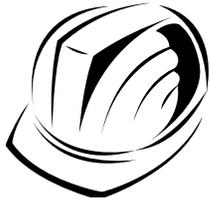


Construction Risks

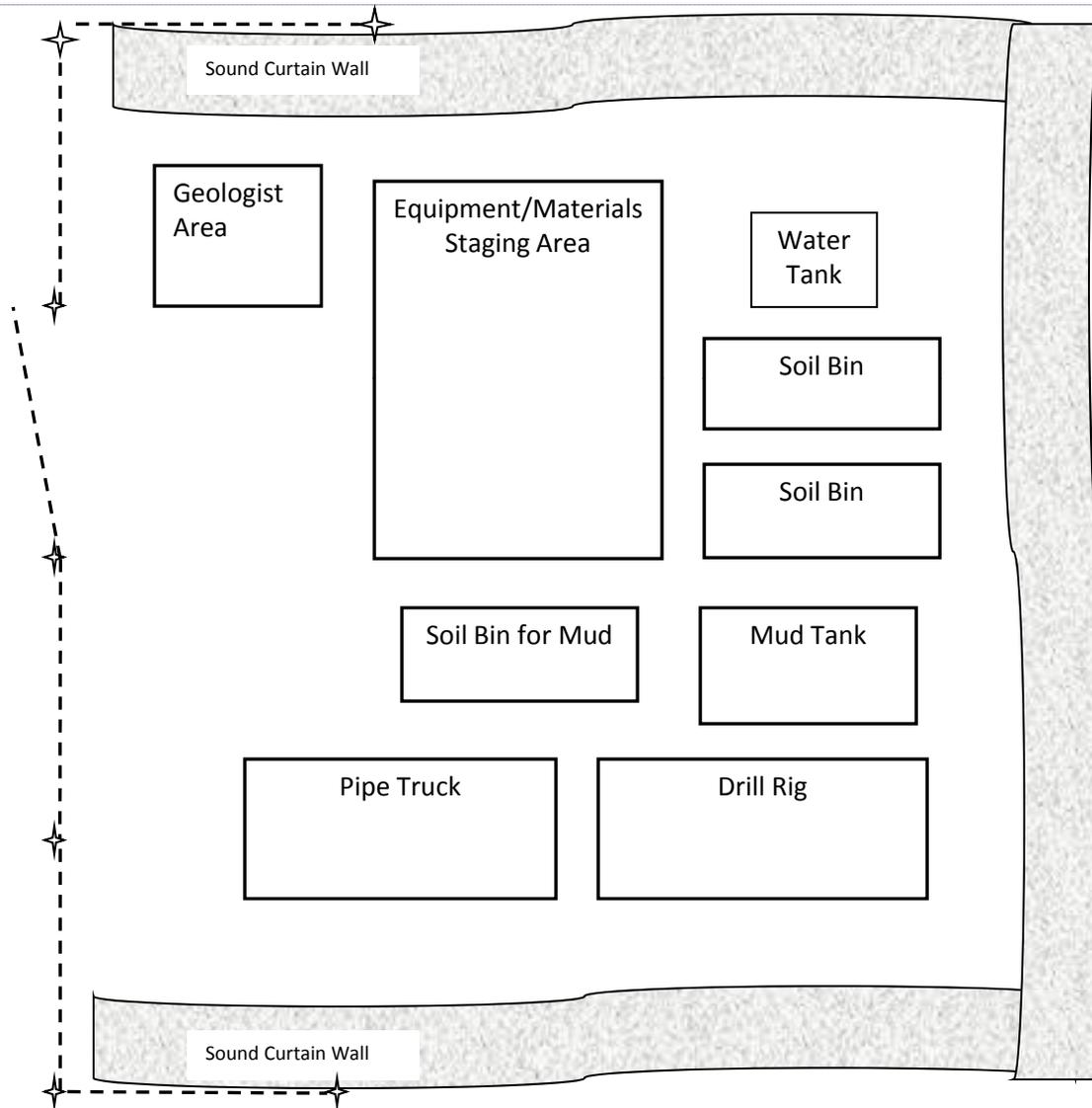


Chemical Exposure Risks

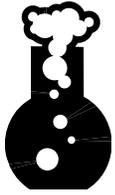




Construction Safety



- Lockable fabric covered, chained-link fence (100 x 100 feet, variable)
- Security
- Noise control
- Dust control permit
- Fluid and solids containment
- Spill prevention and control
- Vibration
 - Structural risk & pests



Chemical Safety Groundwater/Soil



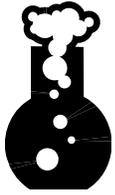
- Groundwater / soil brought to the surface will be containerized
- Nearest observed concentration is 16 $\mu\text{g/L}$



Description	Regulatory Limit TCE*
Drinking Water	5 $\mu\text{g/L}$
Full Body Contact (submergence)	29 $\mu\text{g/L}$
Partial Body contact (no submergence)	280,000 $\mu\text{g/L}$



*Source: www.azsos.gov/public_services/title_18/18-11.htm



Chemical Safety Air/Vapor



- Breathing zone monitoring is performed
- 16 $\mu\text{g}/\text{L}$ at TB-1 = 7 ppb in air/vapor

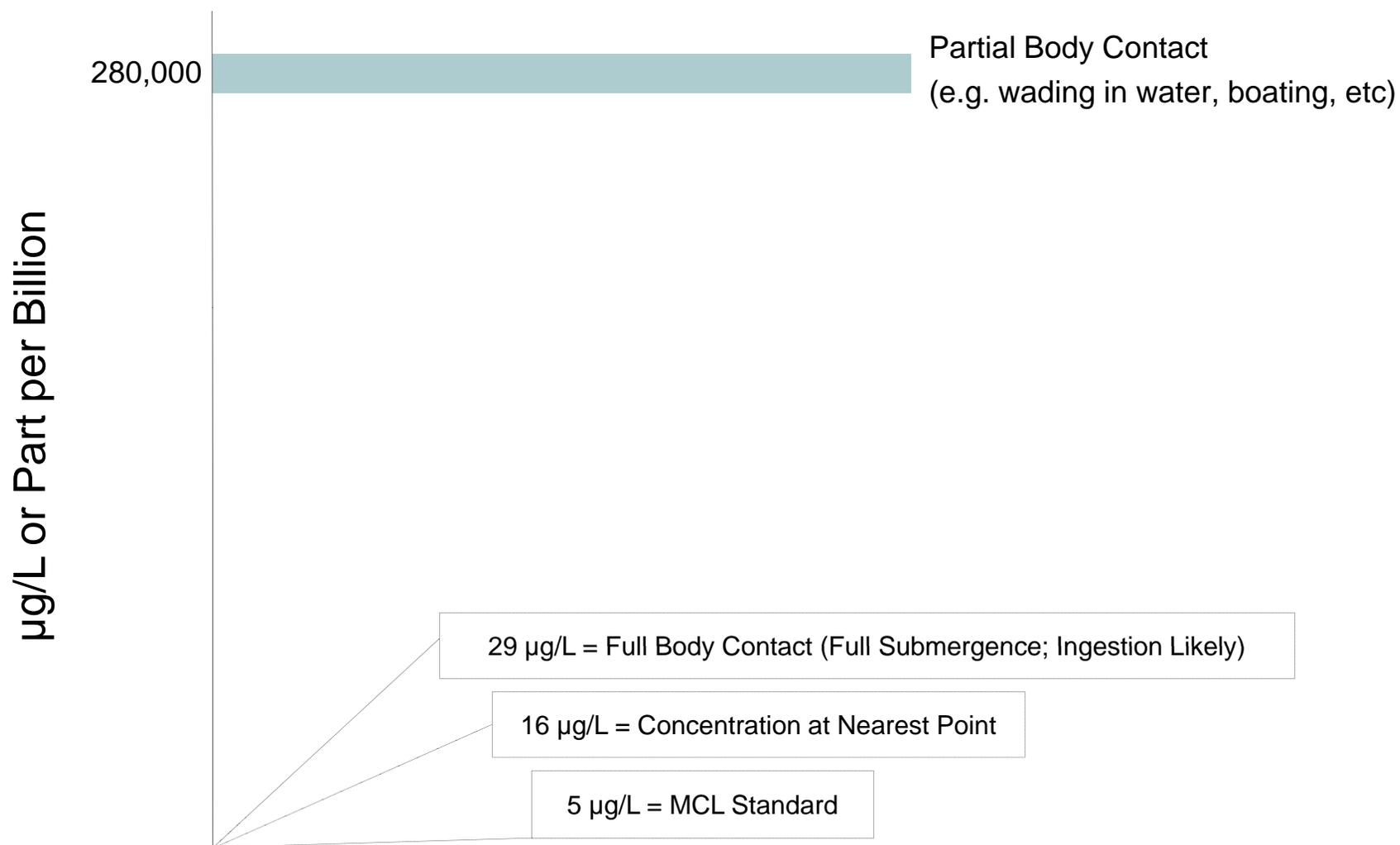
Description	Regulatory Limit TCE*
Permissible Exposure Limit	100,000 ppb, 8-hour TWA (8hr/day-46wk/yr-45 yr)
Occupational Safety and Health Administration	300,000 ppb, 5-minute maximum peak in any 2-hour period

*Source: www.atsdr.cdc.gov/csem/tce/tcestandards_regulations.html



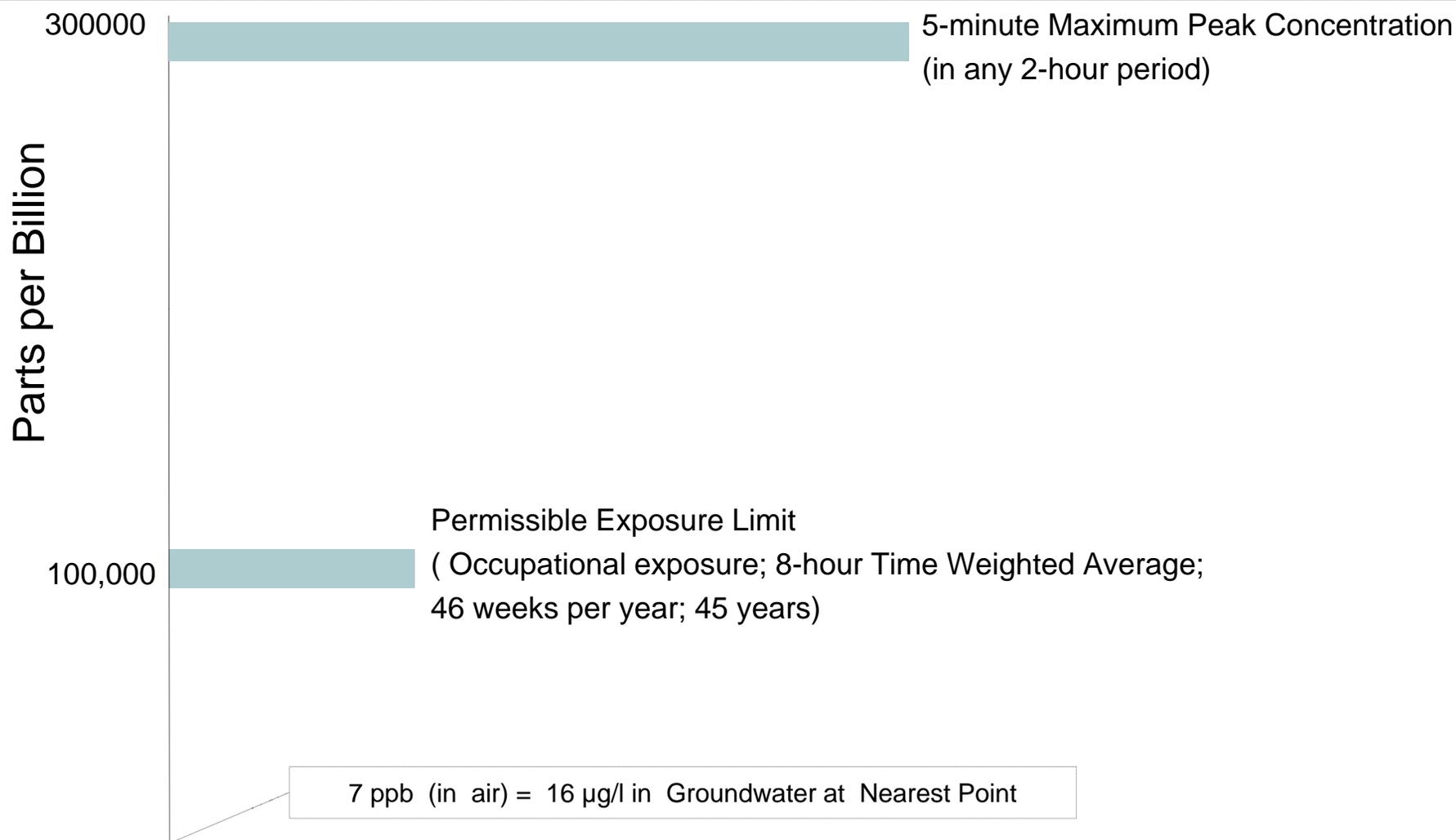
Air Monitor

Regulatory Levels in Groundwater v. Concentration Observed at TB-1



*Source: www.azsos.gov/public_services/title_18/18-11.htm

Regulatory Levels in Air v. Concentration Observed at TB-1



*Source: www.atsdr.cdc.gov/csem/tce/tcestandards_regulations.html



Why do we need to do this now?

- Public health & safety is the County's highest priority.
- Required by legal order
- Groundwater moves over time; therefore the problem and solution get bigger over time
- Doing this now prevents the problem from worsening

AOC

1
2
3
4

 BEFORE THE DIRECTOR OF THE
ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

5 In the Matter of: CONSENT ORDER

6 Cave Creek Closed Municipal Solid Waste Landfill located at 8.3 miles east of I-17
7 approximately 1/4 mile south of Carefree Highway, Phoenix, Maricopa County, Arizona
8
9 ADEQ Identification Number 30604 Docket No. _____

10 To: Maricopa County Solid Waste Management Department (MCSWMD) in its capacity as owner
11 and operator of Cave Creek Closed Municipal Solid Waste Landfill (Cave Creek Landfill) located
12 at 8.3 miles east of I-17 approximately 1/4 mile south of Carefree highway, Phoenix, Maricopa County,
13 Arizona.

14 **RECITALS**

15 MCSWMD acknowledges that no promise of any kind or n
16 induce it to enter into this Consent Order, and MCSWMD has do
17 MCSWMD acknowledges that by entering into this Conser
18 liability it may have for civil penalties for violations of any State
19 By entering into this Consent Order, MCSWMD does not admi
20 or waive any right including but not limited to the assertion of any defens
21 applicable law. Further, MCSWMD does not admit, and both
22 Environmental Quality ("ADEQ") and MCSWMD retain the right t
23 proceeding except a proceeding to implement or enforce this Consent O
24 of Fact or Conclusions of Law contained in this Consent Order.
25 The undersigned representative of MCSWMD certifies that h
26 this Consent Order on behalf of MCSWMD and to legally bind M
27
28



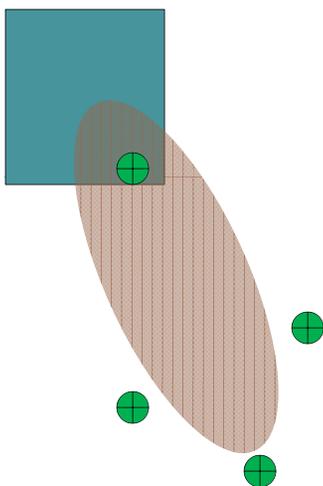
Why do we need to do this now? (Cont'd)

Groundwater moves over time

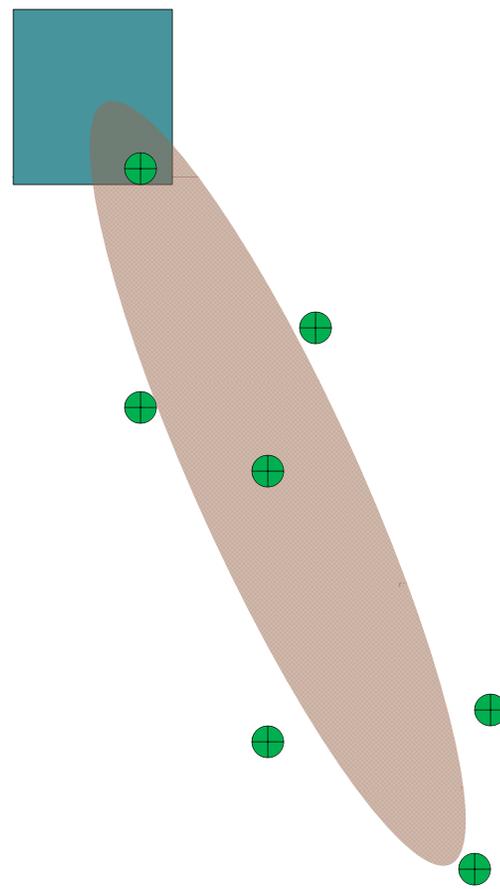


Why do we need to do this now? (Cont'd)

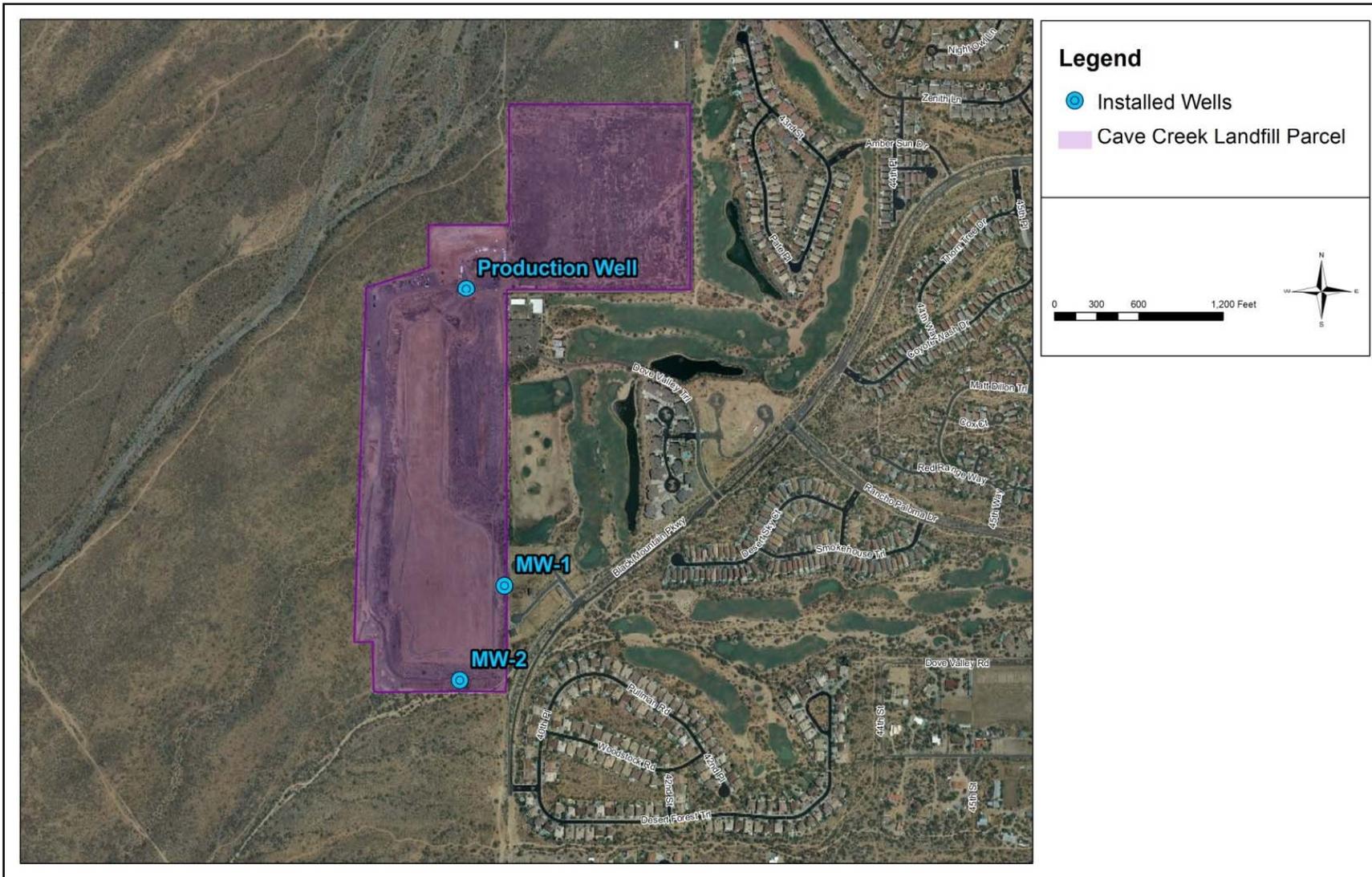
Hypothetical site with a hypothetical plume at time x



Hypothetical site with a hypothetical plume at time $x+y$



Project Description (History)

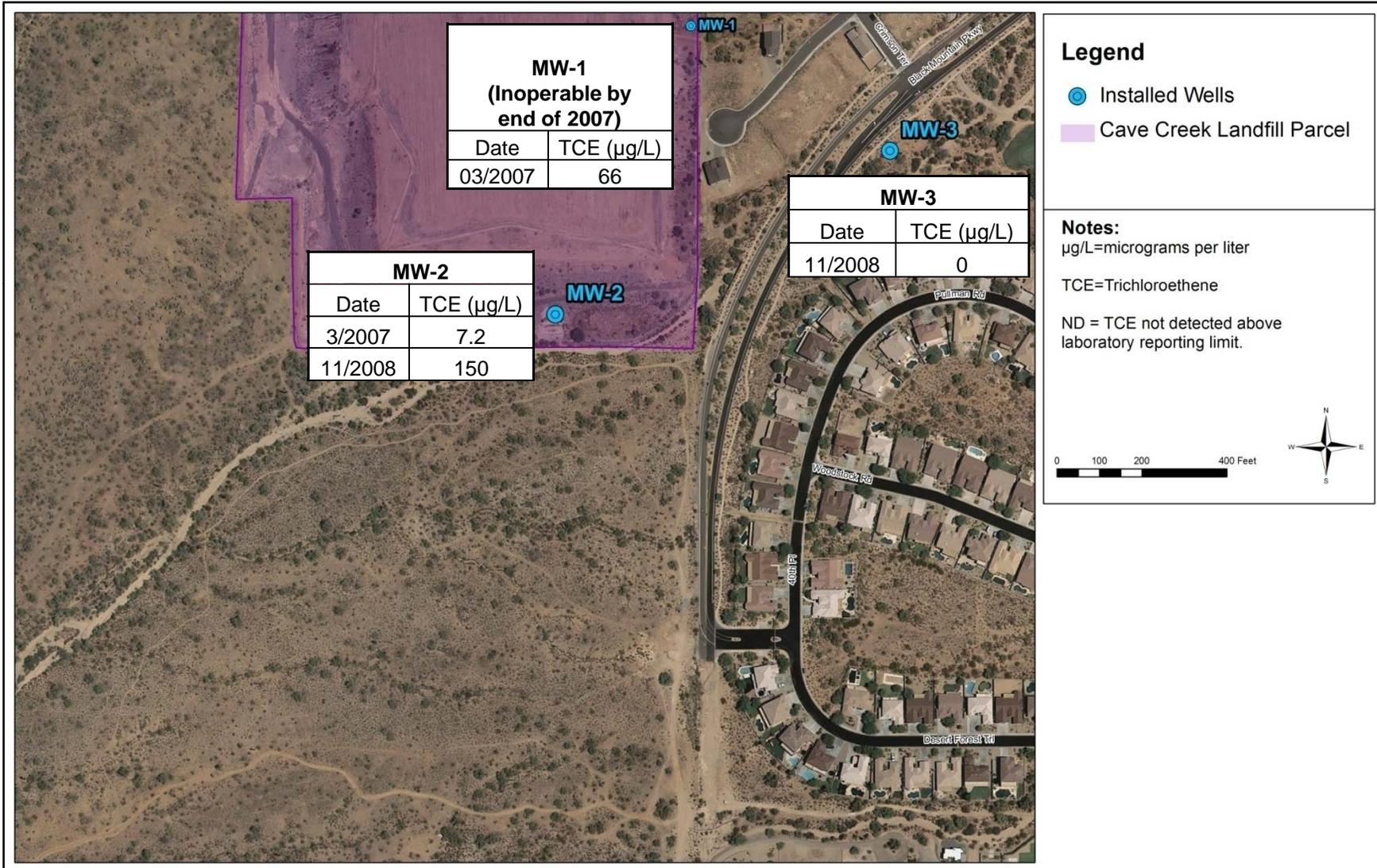


Legend

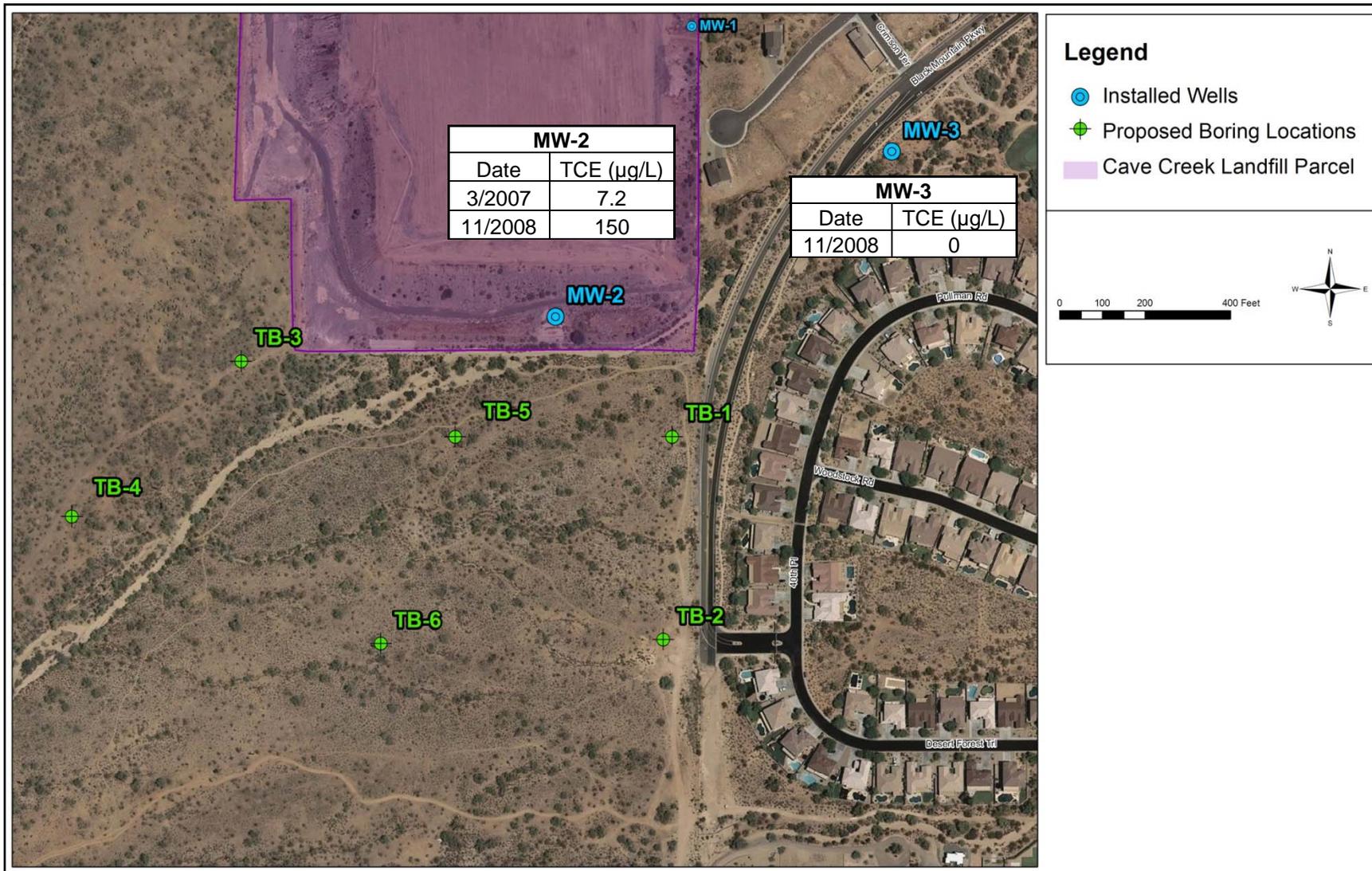
- Installed Wells
- Cave Creek Landfill Parcel



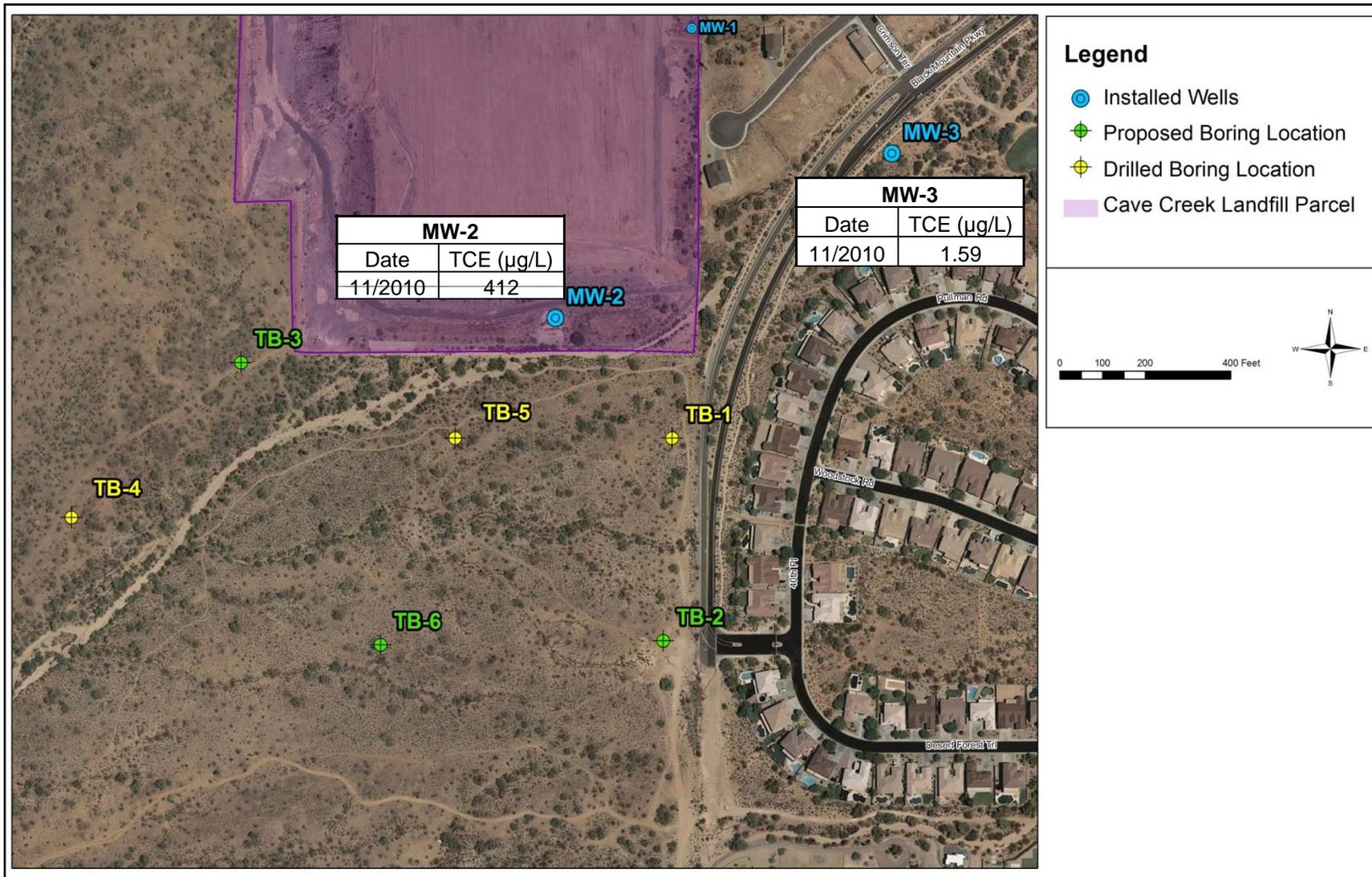
Project Description (History)



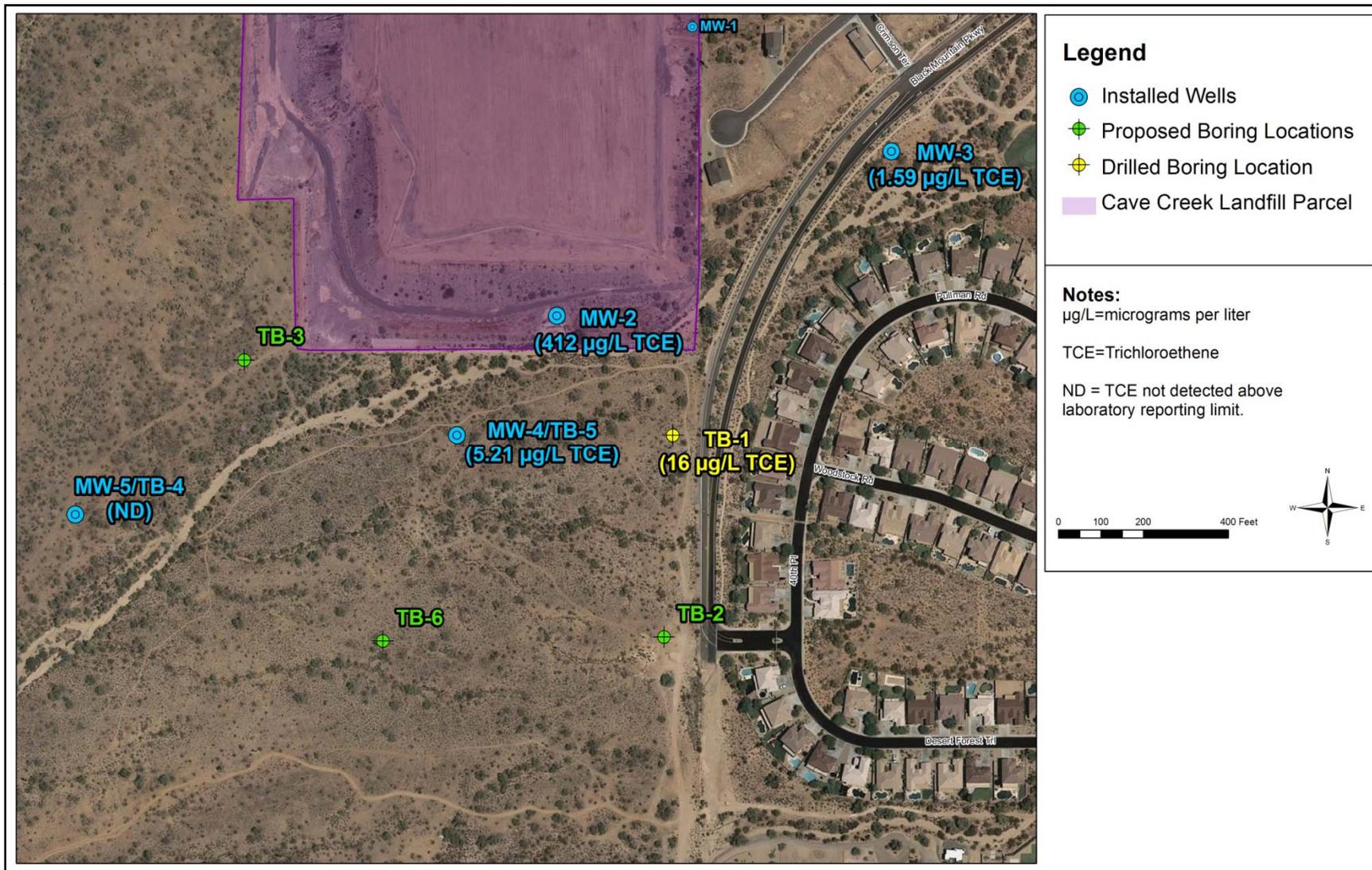
Project Description (History)



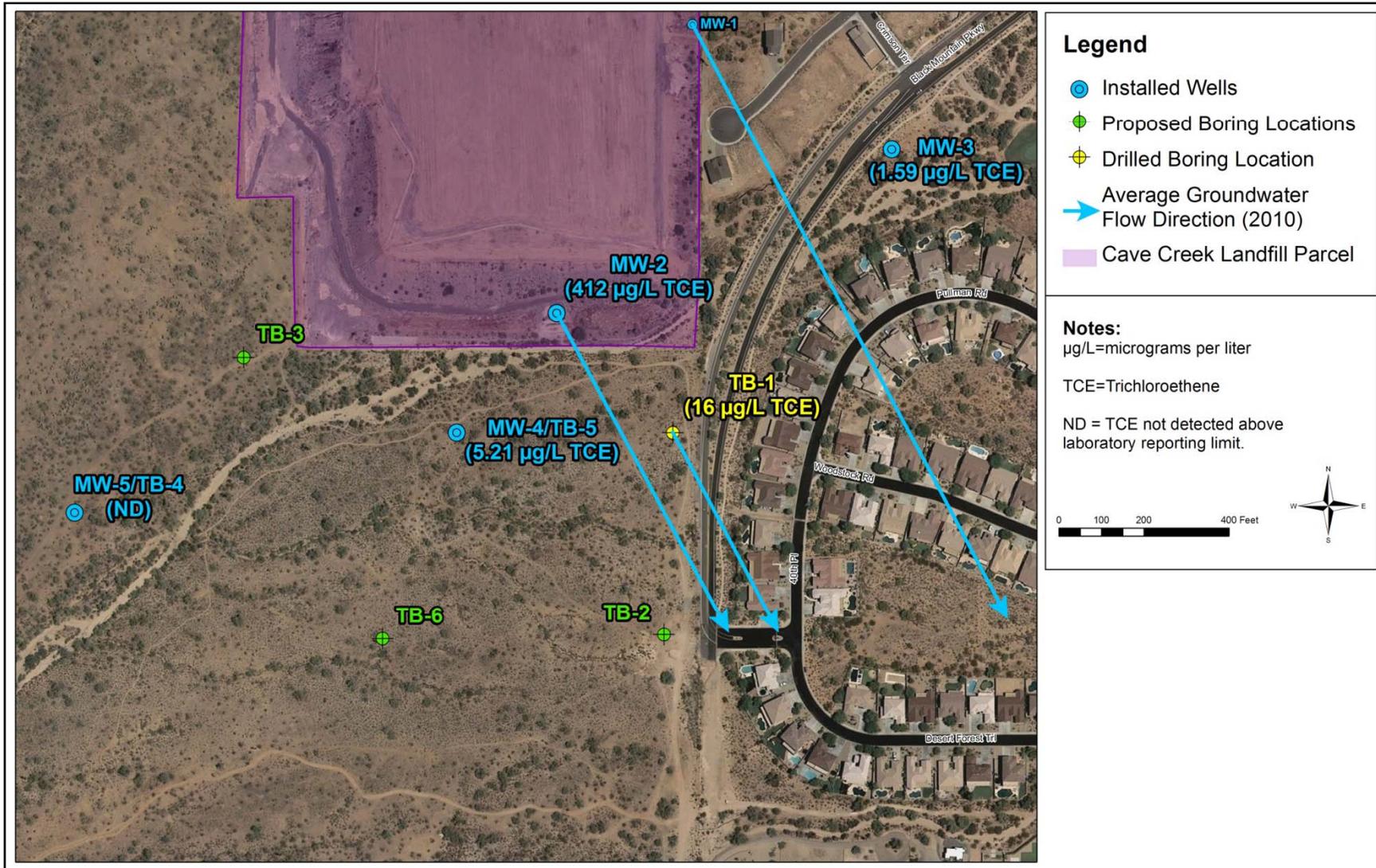
Project Description (History)



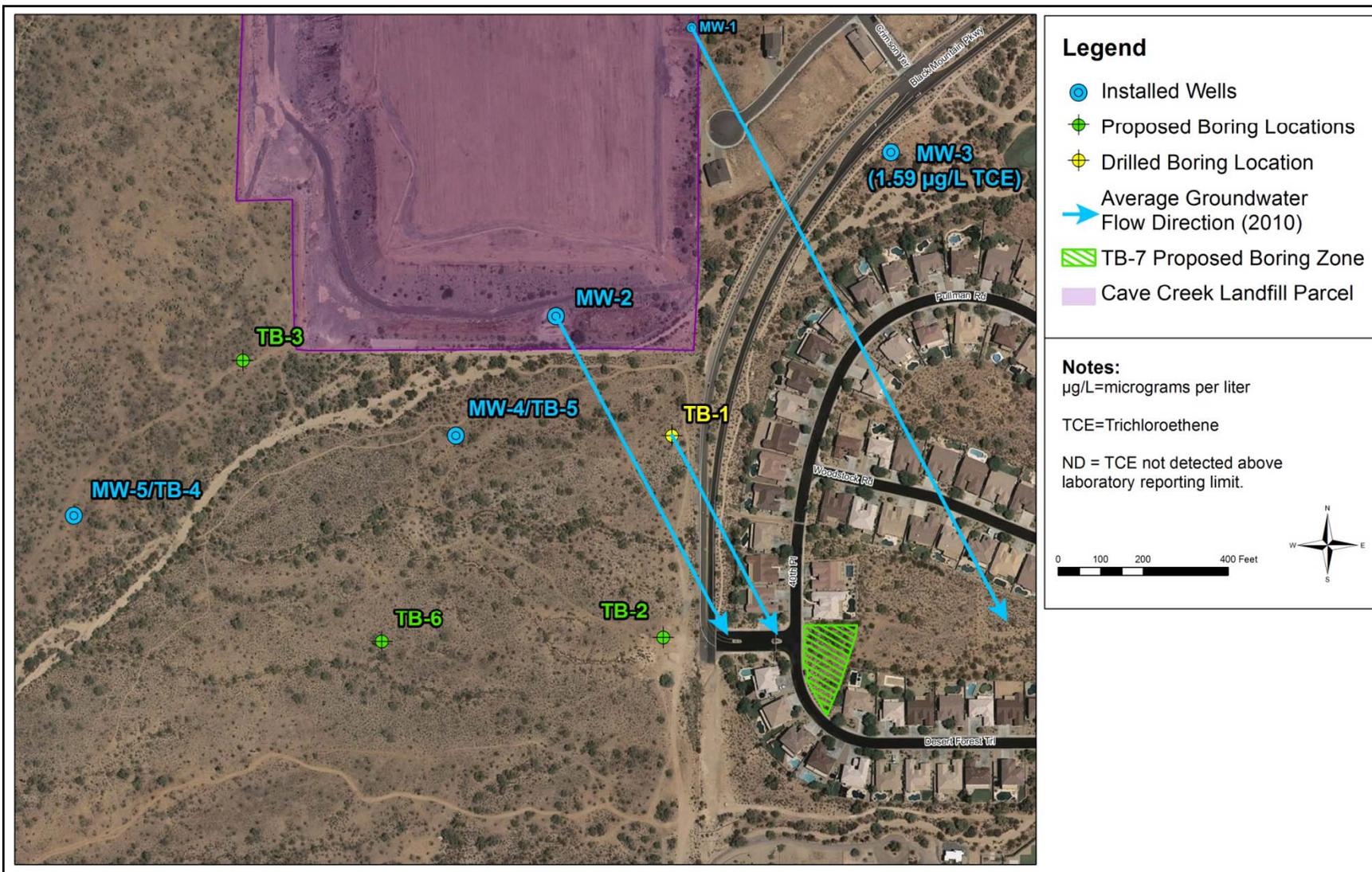
Project Description (Current Status)



Project Description (Current Status)



Project Description (Locating TB-7)



Project Description - Future



- Remediation
 - Follows characterization (must know what the problem is, before fixing it)
 - Evaluate remedy alternatives
 - Select the “best alternative”
 - Design the system
 - Operate the system

- ADEQ is involved in each step of the process

- The County and ADEQ view the health and safety of its citizens as a primary responsibility

Questions?



- For more information, please go to:
www.maricopa.gov/groundwater

Or email gerchickc@mail.maricopa.gov

What is a $\mu\text{g}/\text{L}$ or a part per billion?



- One silver dollar in roll stretching from Detroit to Salt Lake City,
- One sheet in a roll of toilet paper stretching from New York to London,
- One second in nearly 32 years, or
- One pinch of salt in 10 tons of potato chips.
- One 4-inch hamburger in a chain of hamburgers circling the earth at the equator 2.5 times
- One kernel of corn in a 45-foot high, 16-foot diameter silo
- One drop in a railroad tanker car
- $1/1000^{\text{th}}$ of a part per million

