



# Broadway Pantano WQARF Site Community Advisory Board Meeting July 9, 2019

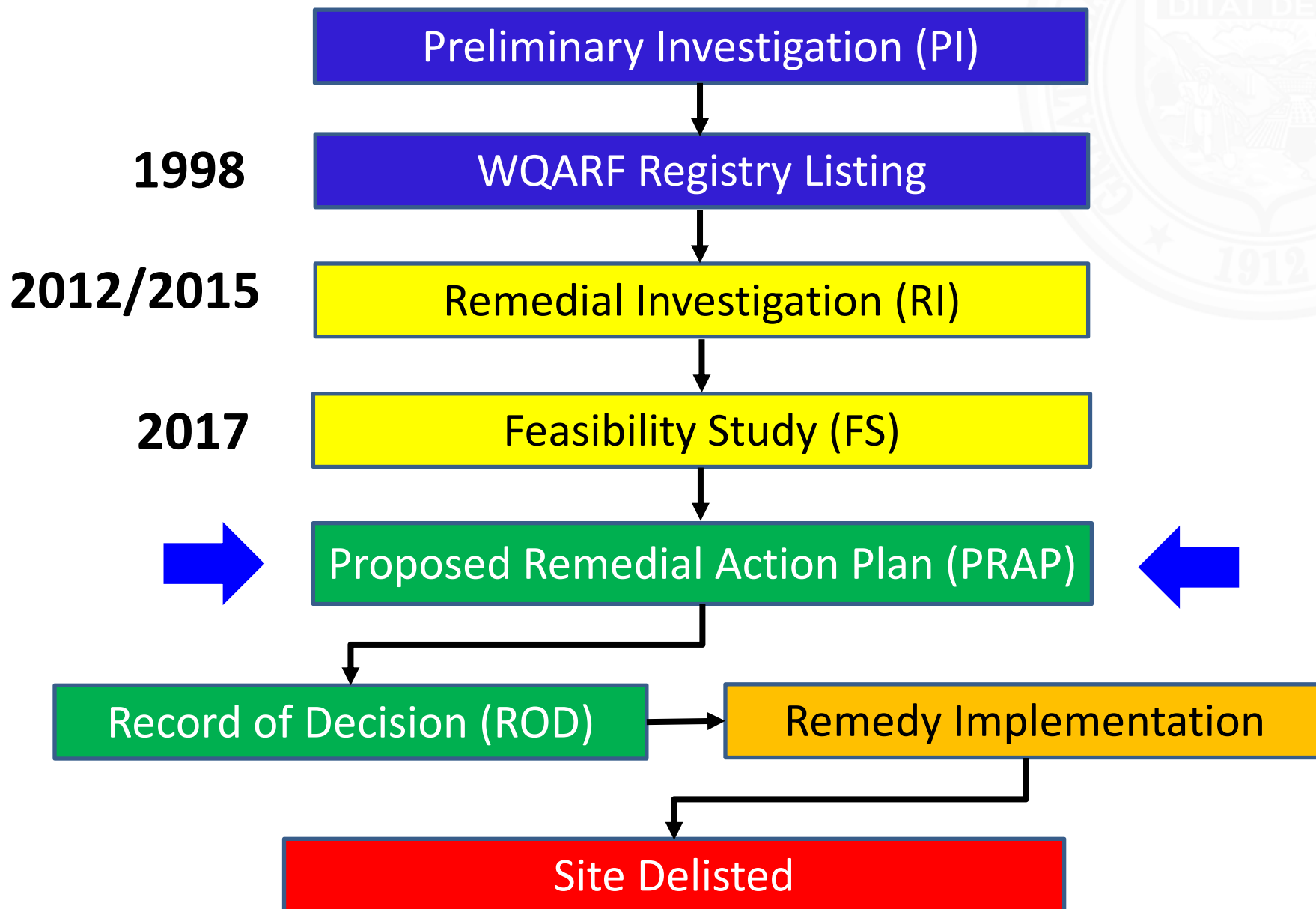
Proposed Remedial Action Plan (PRAP)



- WQARF Process
- Background
- Remedial Objectives
- Proposed Remedial Technologies
- Proposed Contingencies
- Summary

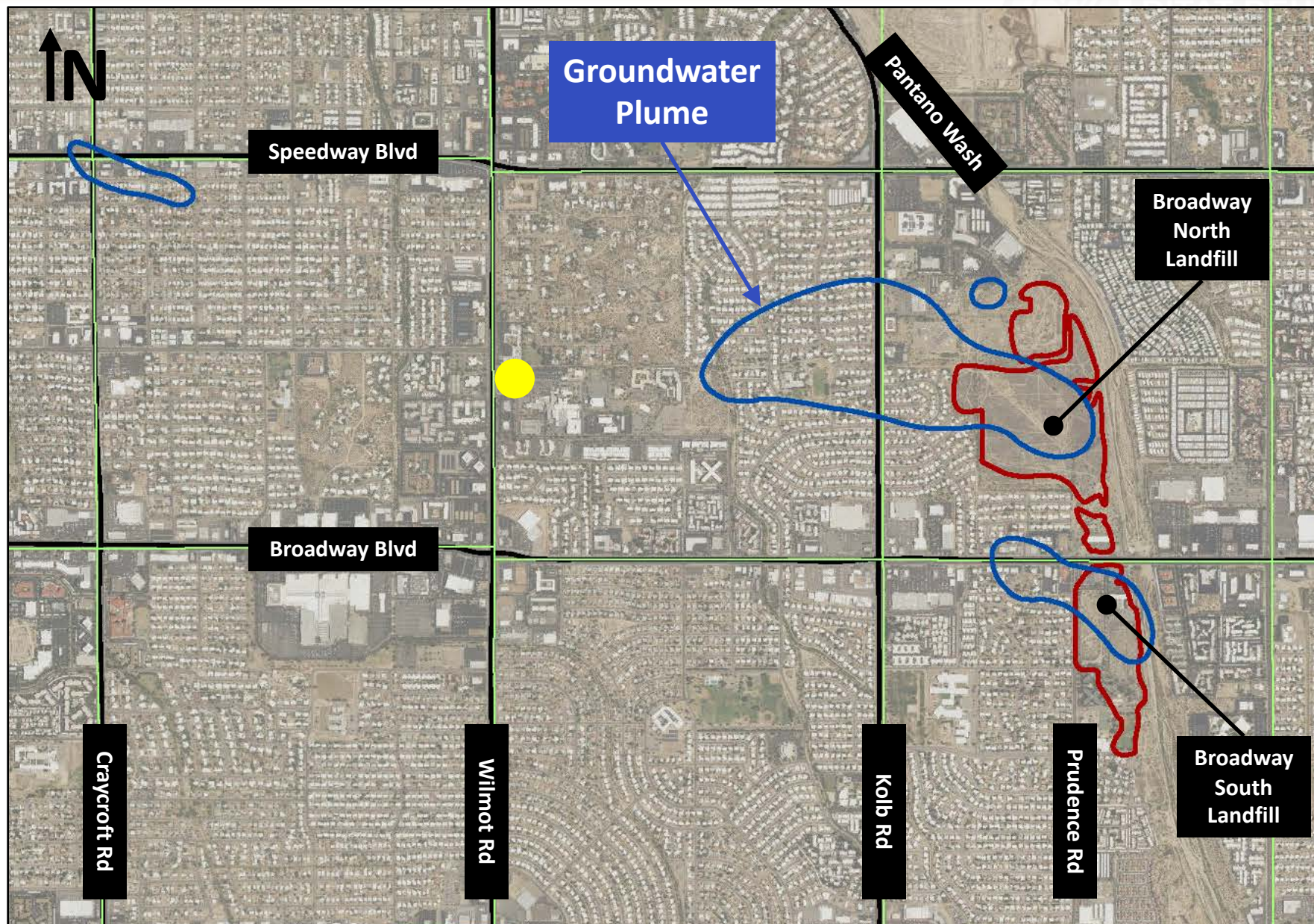


# WQARF Process



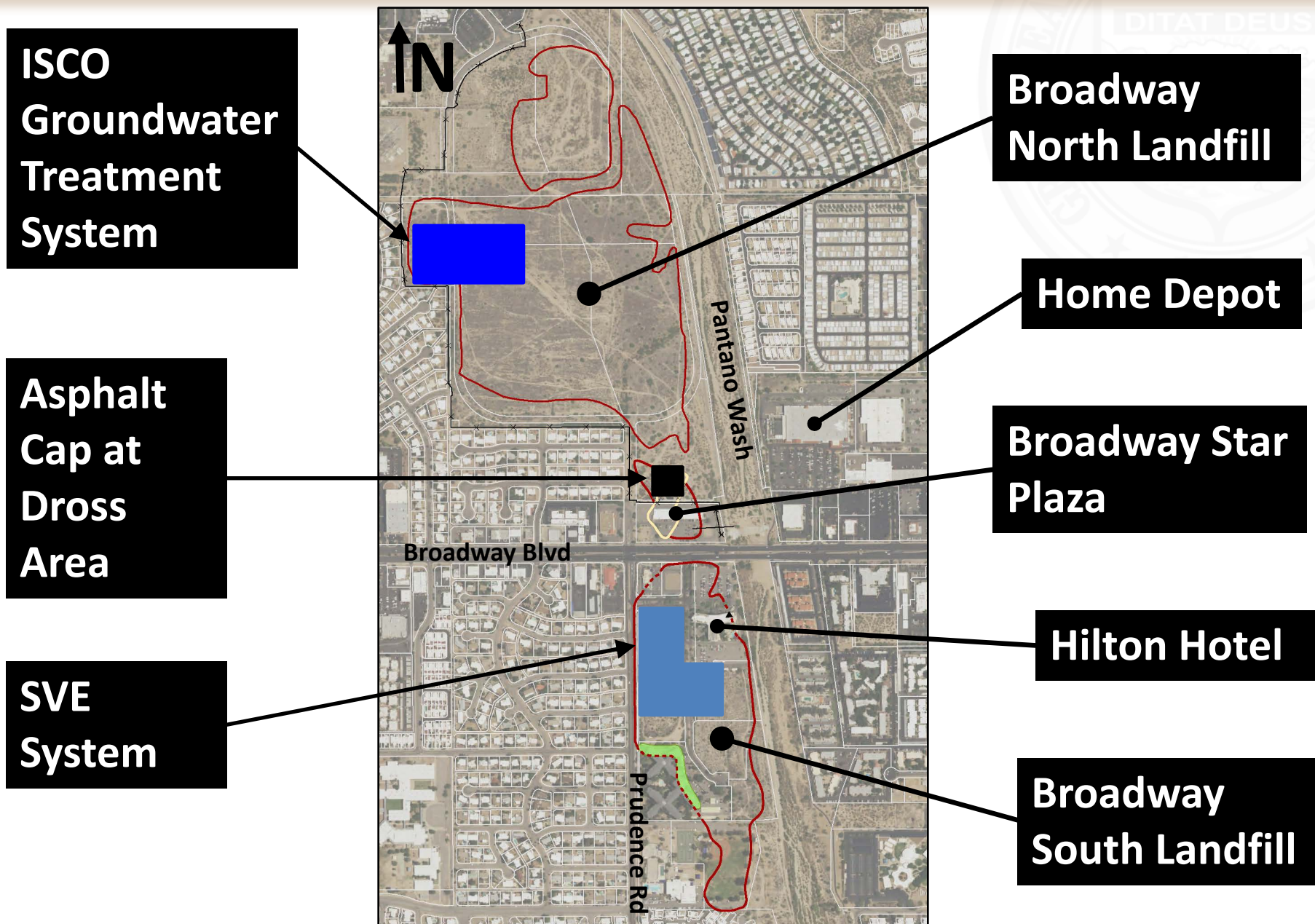


# Site Location Map

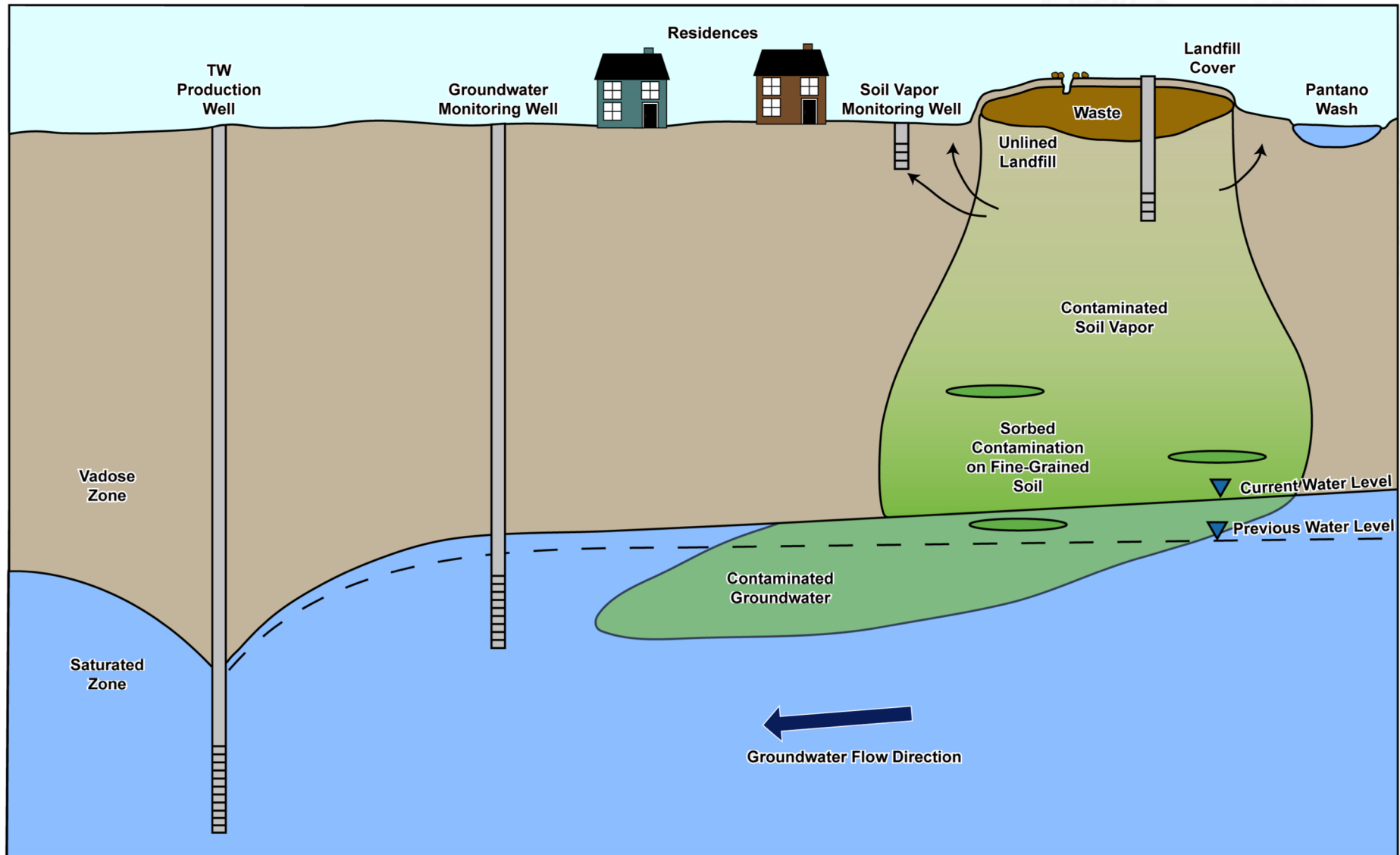




**ADEQ**  
Arizona Department  
of Environmental Quality



# Conceptual Site Model



- Soil = Protect Against Exposure to COCs Within or Released From the Landfill Waste
- Groundwater = Restore, Replace, or Otherwise Provide for Use of Regional Aquifer as Potable and Non-Potable Use (Groundwater Concentrations for Potable Use Must Meet Aquifer Water Quality Standards [AWQS])



# Proposed Remedial Technologies

Remedial Component	Duration (Years)	Future Cost
Engineering Controls (i.e., soil cover, asphalt cap, etc.)	Until Site Development	\$0*
Institutional Controls (i.e., DEUR)	Until Site Development	\$0*
SVE at BSL	1 Year	\$300K
Vapor Monitoring at BNL & BSL	20 Years	\$686K
ISCO Groundwater Treatment at BNL	7 Years	\$3.5M
MNA	30 Years	\$4.4M
Well & System Abandonment	--	\$1.1M
<b><i>SUBTOTAL</i></b>	<b><i>30</i></b>	<b><i>\$10.0M</i></b>

\*Responsibility of the Property Owner

- Existing Landfill Soil Cover
- Development Caps
- Asphalt Cap at Dross Area
  - Installed in Spring 2019 as Early Response Action (ERA)



- Declaration of Environmental Use Restriction (DEUR)
  - Limit Residential Use at Property
- DEUR Outline Property Owner Responsibilities
  - Annual Inspection
  - Maintenance of Soil Cover, Asphalt Cap, Fence, & Signage



# Soil Vapor Extraction (SVE)

- System Installed in Spring 2019 as Early Response Action (ERA)
- 8 SVE Wells Plus Treatment Compound
- Pilot Test and Operation to Begin in Summer 2019



# Soil Vapor Extraction (SVE)



- Soil Vapor Extraction Well
- SVE System Compound
- SVE Pipeline

- Soil Vapor Sampling
  - Conducted Every 5 Years for 20 Years
  - Confirm Soil Concentrations Remain Below Remediation Levels
  - Confirm Waste In Landfills Are Not A Continuing Source of Groundwater Contamination

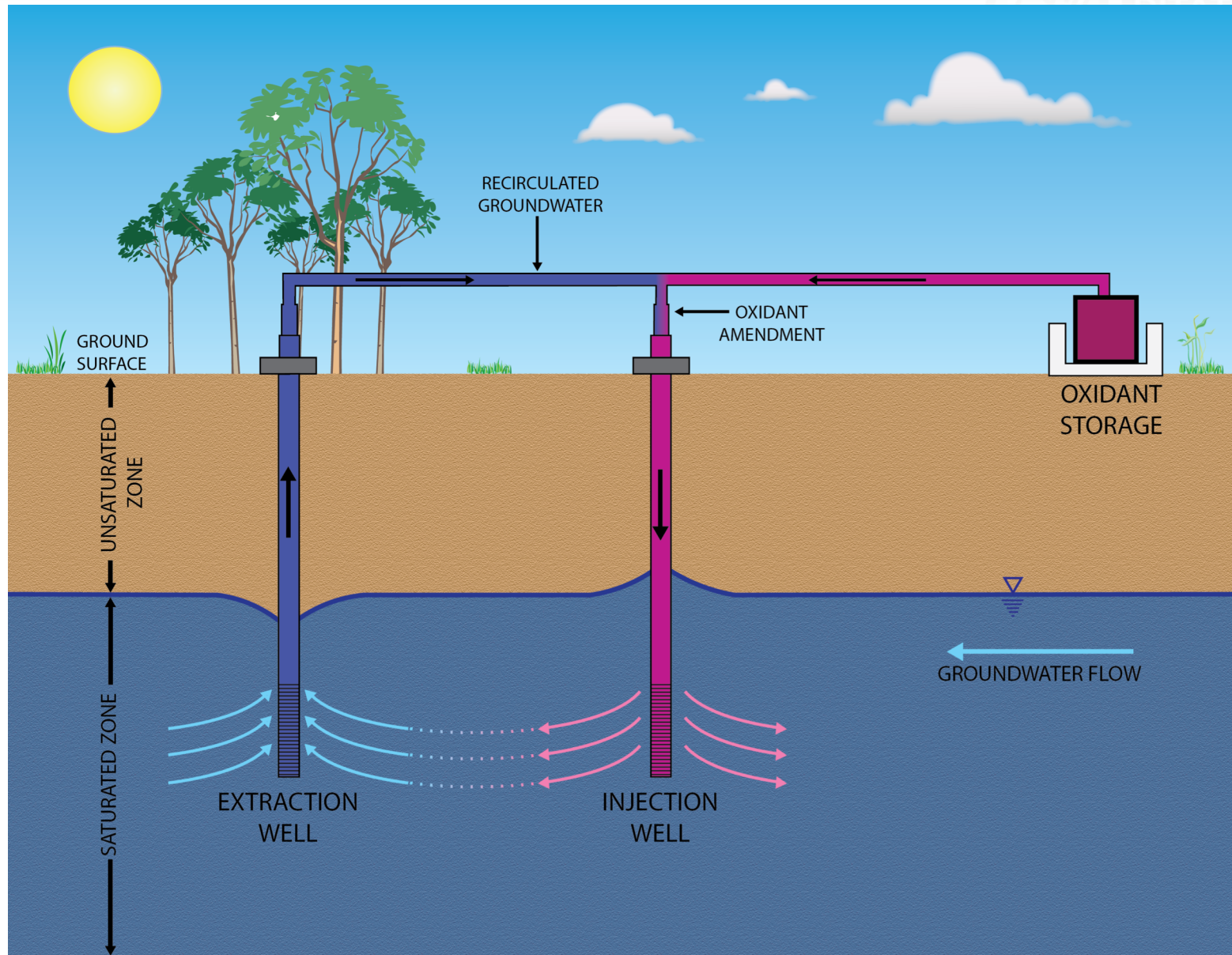


# ISCO Groundwater Treatment

- In-Situ Chemical Oxidation (ISCO)
- Injection & Circulation of Oxidant to Remediate Groundwater
- Implemented in 2019 as ERA

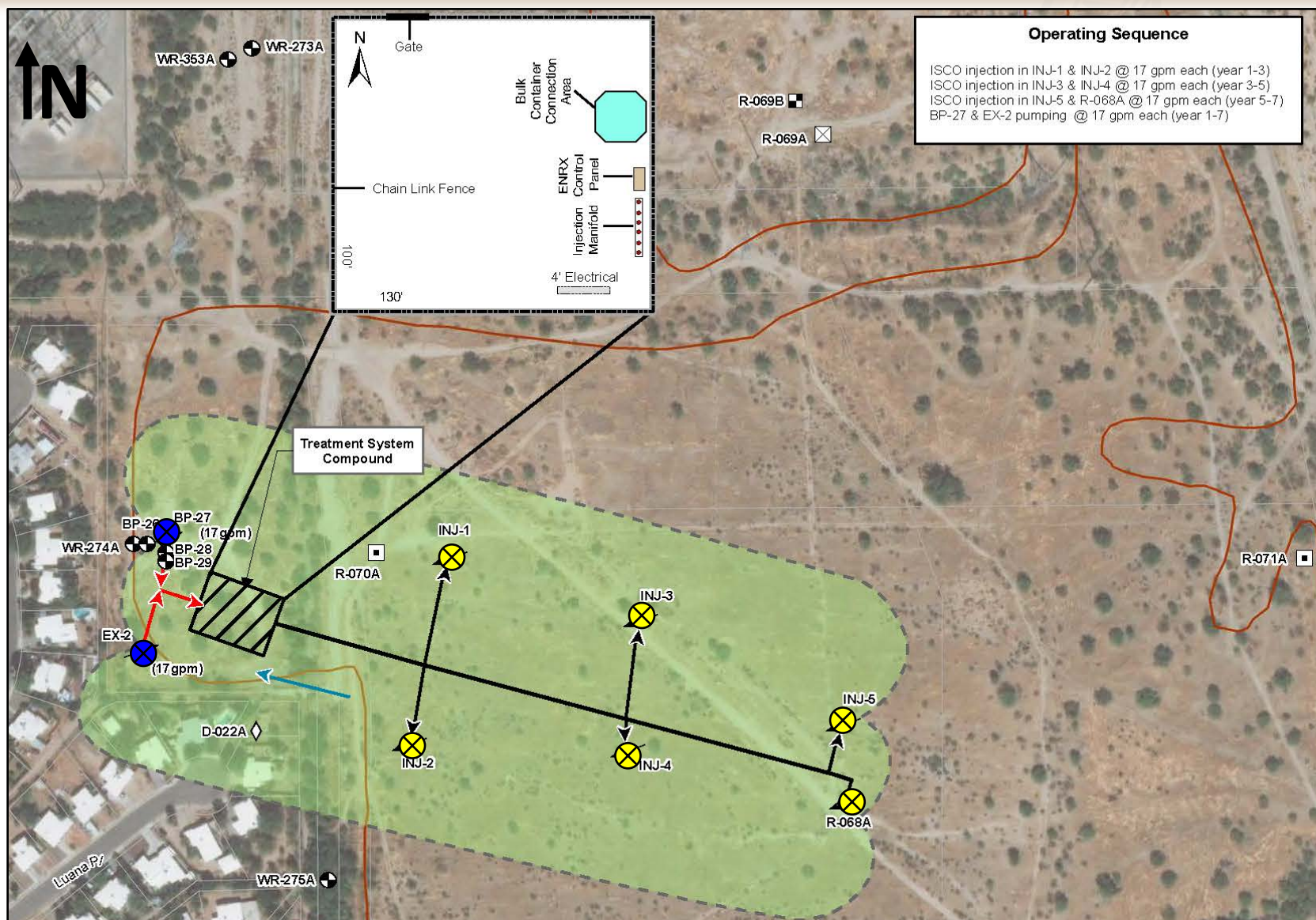


# ISCO – Conceptual Design





# ISCO System (As-Built)





- Groundwater Monitoring & Sampling
- Data Used to Evaluate Plume Migration, Plume Stability, & Natural Attenuation of Plume
- Data Used to Trigger Proposed Contingency Action(s)

# Proposed Contingencies

Remedial Component	Duration (Years)	Future Cost
Groundwater Pump & Treat (i.e., Re-Start Western Containment System [WCS])	20	\$12.2M
Wellhead Treatment (Public Supply Well)	20	\$4.8M
Water Replacement (Private Supply Well)	20	\$57K
Additional SVE	4	\$1.2M
<b><i>SUBTOTAL</i></b>	<b><i>30</i></b>	<b><i>\$18.3M</i></b>

- Proposed Remedy:
  - Meets Remedial Objectives
  - Consistent with Current & Future Land & Water Use
  - Protects Public Health & the Environment
  - Provides Control, Management, & Cleanup of Contamination to Allow Maximum Beneficial Use of the Waters of the State
  - Is Reasonable, Necessary, Cost-Effective, & Technically Feasible

## *ADEQ Community Involvement Coordinator*

Barbara Boschert

[Boschert.Barbara@azdeq.gov](mailto:Boschert.Barbara@azdeq.gov)

602.771.8149

## *ADEQ Project Manager*

Tom Titus

[Titus.Thomas@azdeq.gov](mailto:Titus.Thomas@azdeq.gov)

602.771.0102