



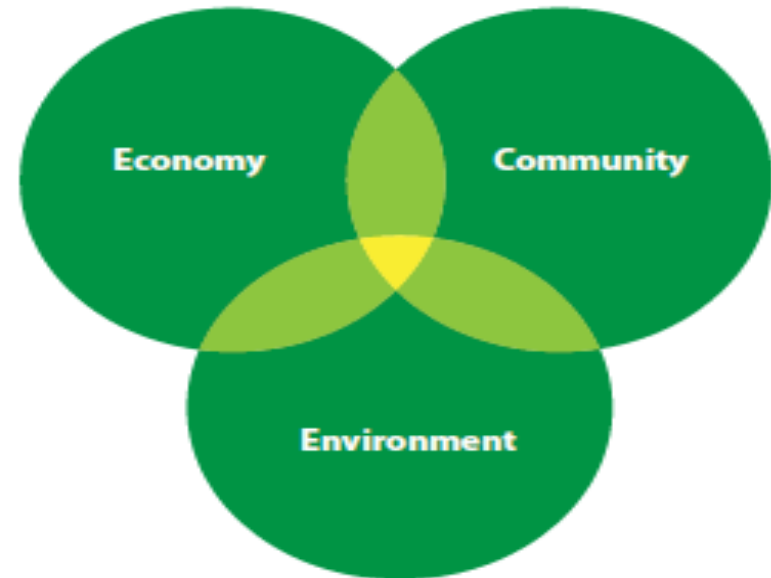
Voluntary Remediation Program (VRP)

Presented by
Scott Green, R.G. – VRP Manager

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Bringing
Contaminated Sites
into Productive Reuse



What is the VRP?

The main goal of VRP is to encourage the voluntary cleanup of environmental contamination.



Typical Voluntary Sites

- Dry cleaners (VOCs)
- Plating shops and other industrial/manufacturing (metals, VOCs)
- Mining sites; both active and closed (metals, radionuclides)
- Former agricultural land (pesticides and herbicides)
- Pipelines, gas stations, USTs/ASTs (petroleum)
- Former firing ranges (lead, metals)

Whatever problem a Volunteer has, no matter how big or small, the ADEQ VRP can likely handle it and has seen it before.

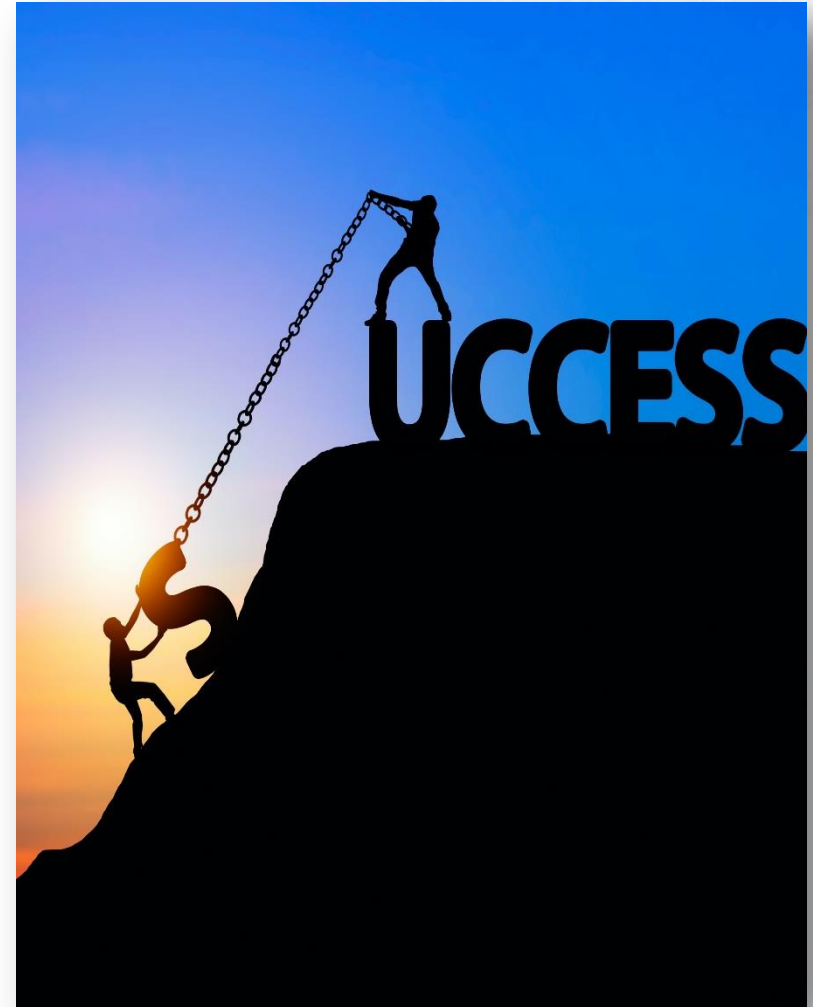
What sites are not eligible?

- Any site with interim status or RCRA permit
-have to be released from permit for acceptance
- Any site receiving reimbursement from UST fund
-waiving right to reimbursement allows acceptance
- Any site with an enforcement action
-need to be released from the action for acceptance
- Any site listed on WQARF Registry
-if a site is located within a listed WQARF site boundary it can be accepted if the contaminants are different than the WQARF site contaminants

What is the Benefit to Volunteers?

The VRP can provide the following:

- A roadmap through the regulatory gauntlet
- Facilitate communication among regulatory programs and agencies
- Documentation of compliance with statutory requirements
- Ability to develop site-specific cleanup levels
- Ability to implement institutional controls (Declaration of Environmental Use Restriction)
- A statutory closure document not offered by other regulatory programs (No Further Action)



Examples of Volunteer Successes



Auto Shredder Fluff - Phoenix



- 10-acre automobile salvage and shredder fluff (mixed hazardous waste) site
- Operated for 30+ years from 1960s to 1990s-abandoned
- 5900 tons of hazardous waste and 820 tons of solid waste
- Early 2000s - Early Response Action - excavation of contaminated materials and temporary engineering controls (CAP) to mitigate exposure to remaining contamination

Auto Shredder Fluff – Phoenix (cont.)

- 2007 Engineering Control (CAP) DEUR recorded to restrict land use to non-residential
- 2014 redevelopment of Site; raised elevation of land 7 feet to accommodate new utilities
- Utilized state of the art helical piers to construct foundations
- No additional waste was removed



Winslow Property

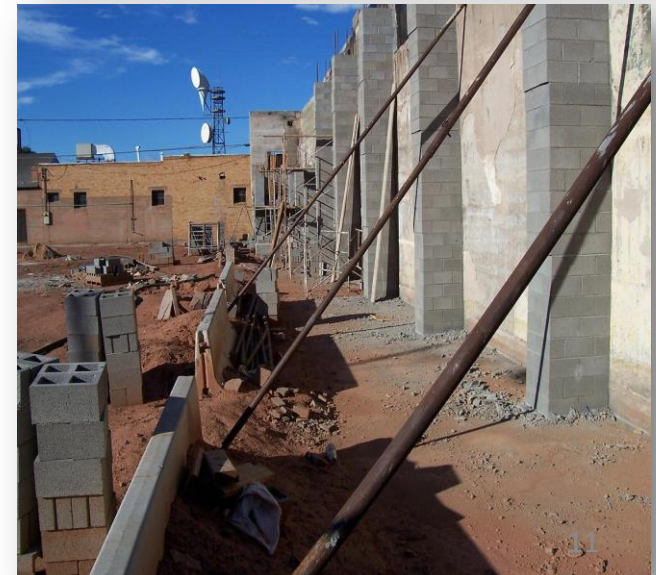


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Winslow Property

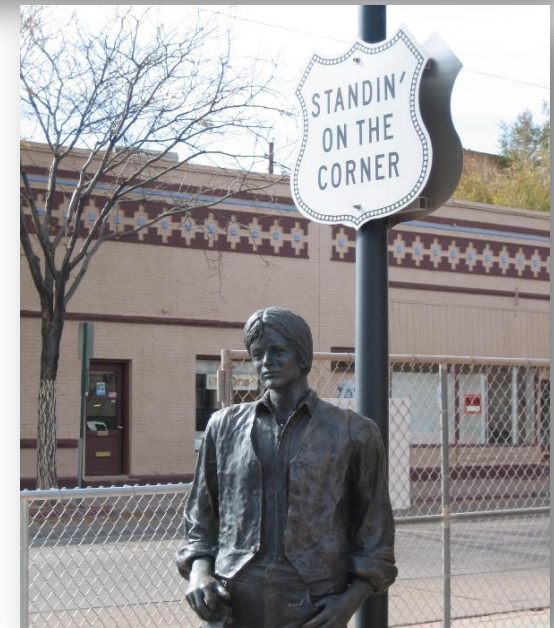
DURING



Winslow Property



AFTER



Misc. Waste/Municipal Landfills



- 120 acre Brownfield, consisting of former sand and gravel excavation pits, salvage yards, historic landfills, heavy industrial uses, vacant land, and dilapidated buildings
- PCB contamination of soils in the SE portion of the site

Misc. Waste/Muni Landfills (cont.)

- Institutional Control DEUR recorded and NFA issued; DEUR restricted land use to non-residential and allowed redevelopment of the property.
- Worked with EPA to partially delist a Superfund Site
- Property is now major entertainment district within the Phoenix metro area with over 100 shops and restaurants



Ag. Chem. Storage & Metal Plating

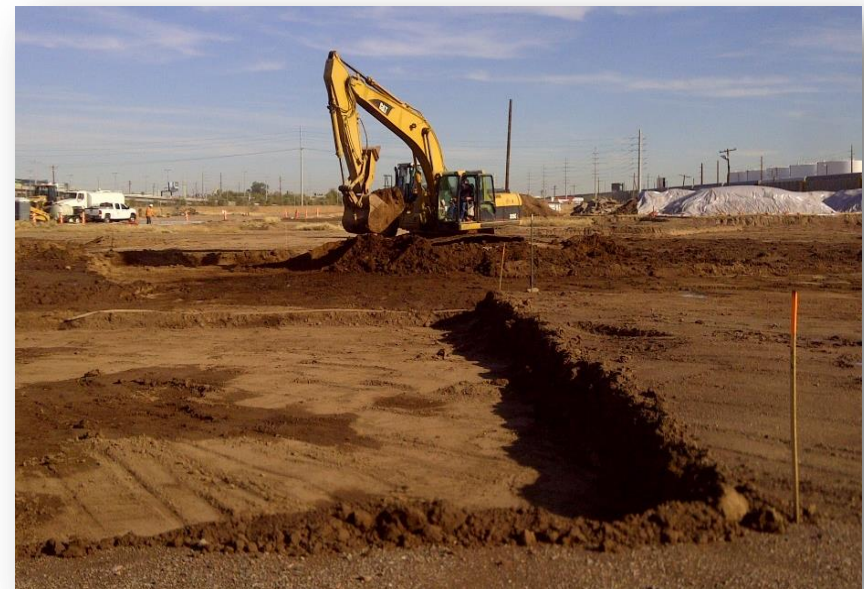
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Ag. Chem. Storage & Metal Plating



DURING



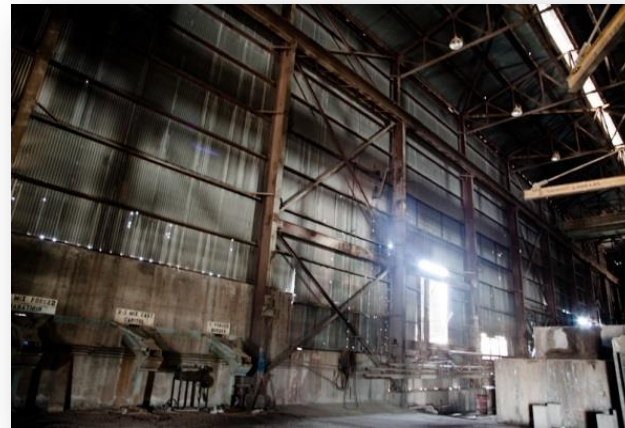
Ag. Chem. Storage & Metal Plating

AFTER



Former Mine

- Remediation of approximately 360 acres of tailings
- Demolition and remediation of mill structures containing lead based paint, asbestos and safety hazards
- Facilitating the successful transfer/sale of former mine property



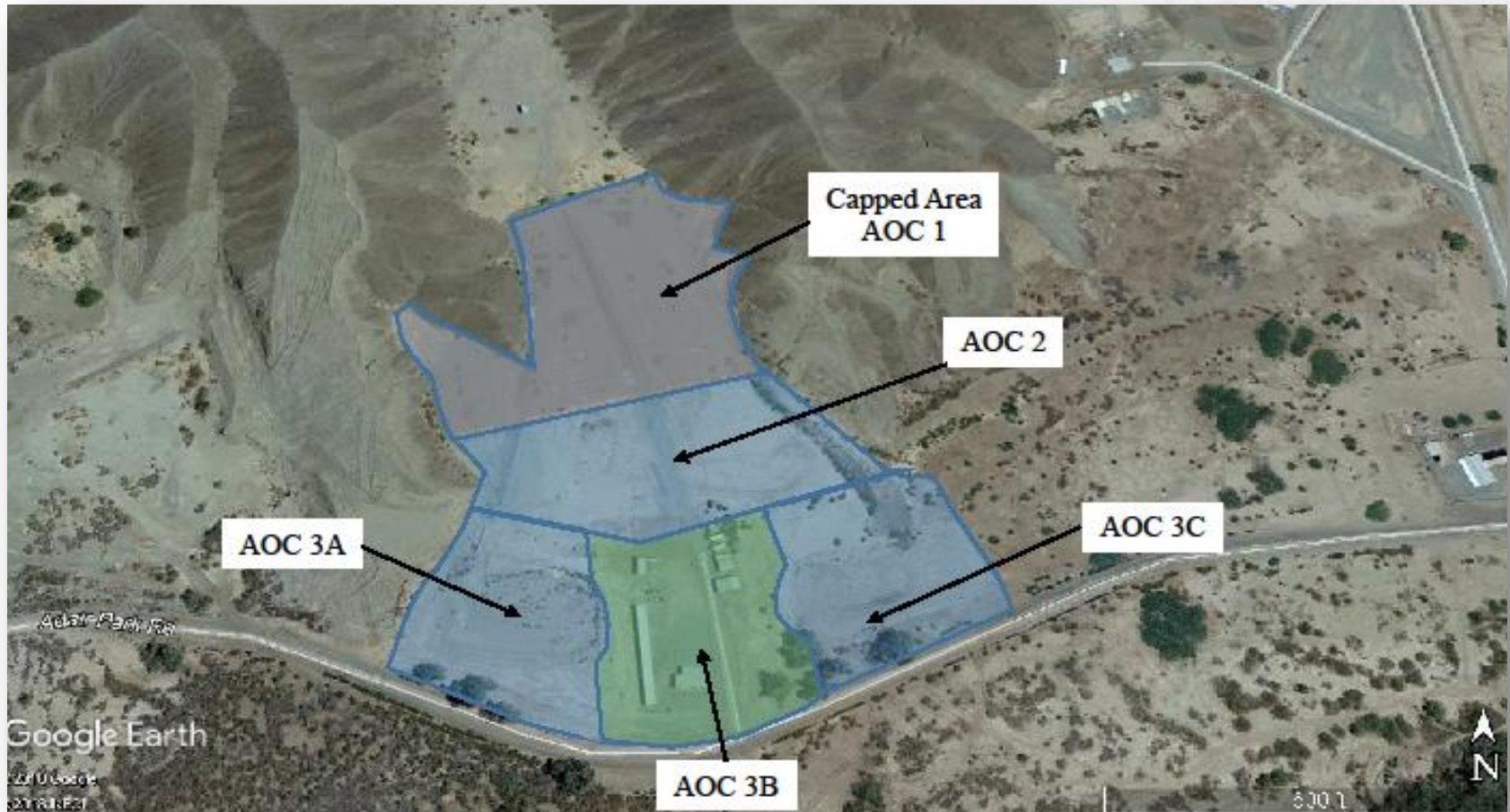
Misc. Mine Waste Remediation

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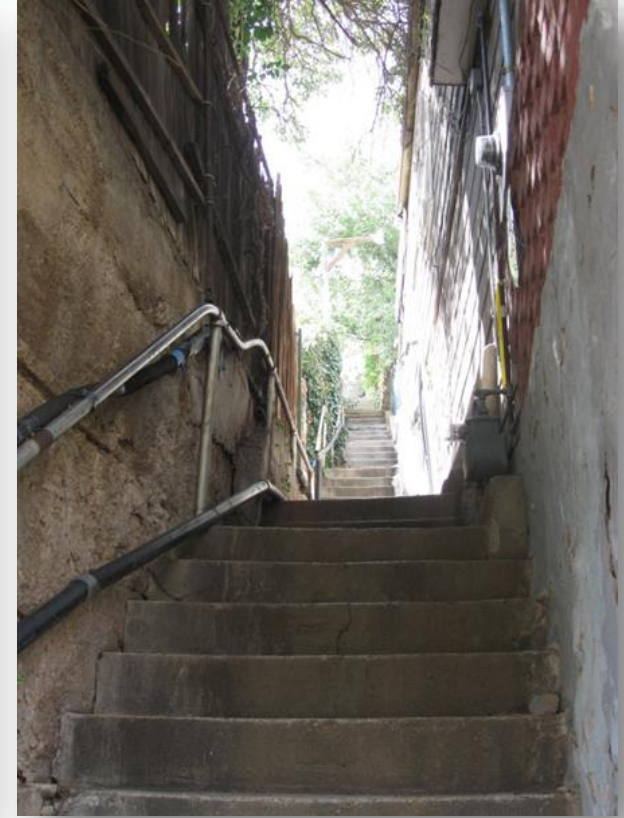


Misc. Mine Waste Remediation

AFTER



Town Cleanup



-
- Assessed over 4,000 properties over 10 square miles
- Remediated over 1,500 properties in very difficult terrain
- Removed over 100,000 cubic yards of impacted soil
- Project characterization and remediation took approximately 8 years
- Remediation focused on windblown smelter emissions

“Bucket Brigade”



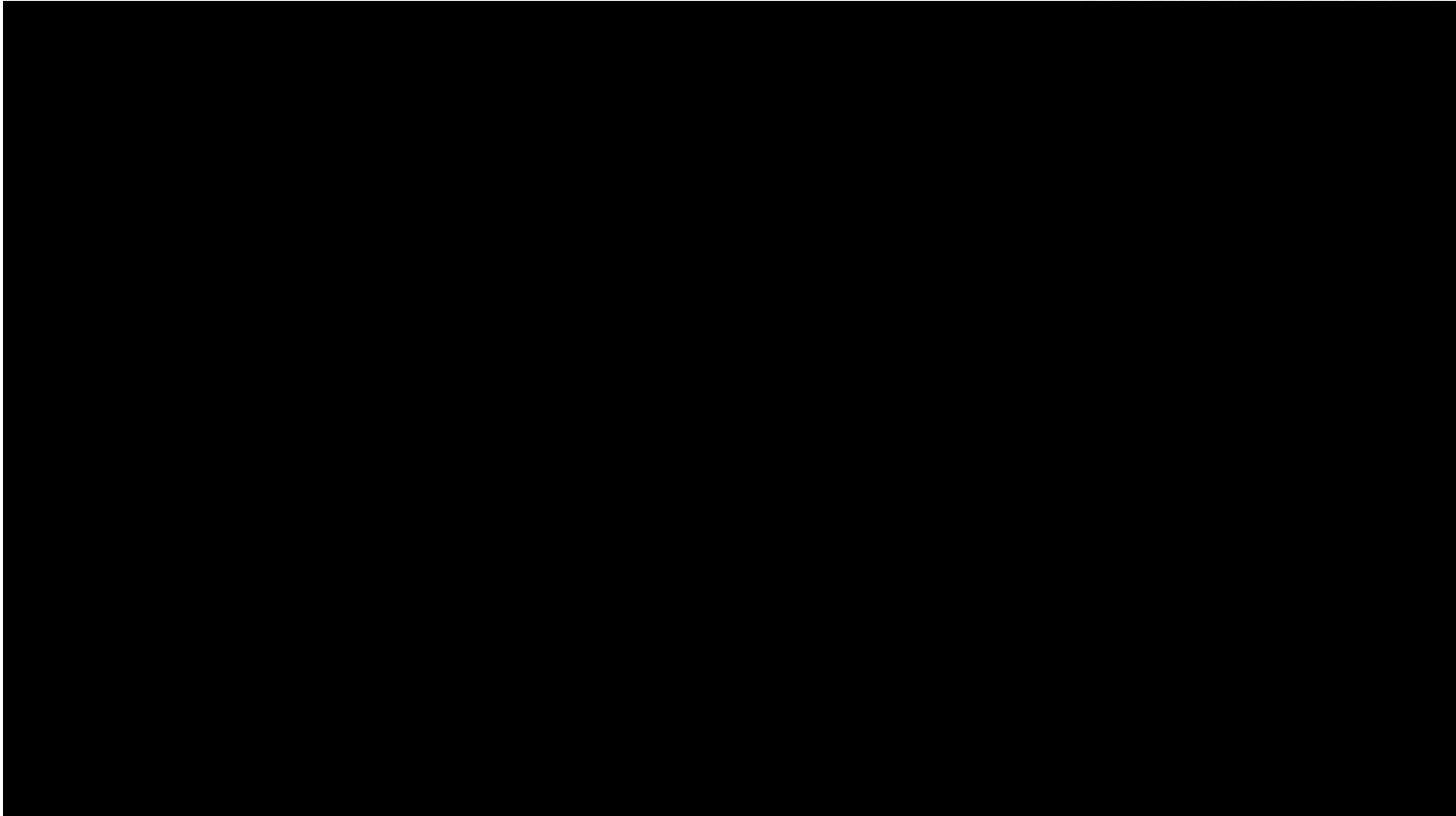
VRP Facilitation of Mine Remediation

BEFORE



VRP Facilitation of Mine Remediation

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VRP Facilitation of Mine Remediation

AFTER



Cost Associated with VRP

Cost to Closure in VRP*

Type of Site	Cost Range	Average Cost	Number of Sites in Average and Range
Asbestos &/or Lead Paint	\$1,221 to \$14,927	\$3,223.85	13
Dry Cleaner	\$1,375 to \$14,762	\$6,221.29	14
Firing Range	\$4,015 to \$9,768	\$6,497.33	3
Groundwater	\$19,723 to \$33,028	\$23,593.66	6**
Industrial Soil	\$1,210 to \$39,853	\$9,475.33	17
Landfill	\$5,445 to \$52,162	\$17,314.00	6
Manufactured Gas Plant	\$27,422 to \$35,332	\$31,377.11	2
Mine	\$50,369 to \$131,194	\$90,781.66	2**
Pesticide	\$3,443 to \$35,783	\$19,613.00	2
Pipeline	\$19,129 to \$55,134	\$30,805.40	4
Spills or AST	\$2,871 to \$12,122	\$6,605.49	7
Surface Water	\$14,751	\$14,751.00	1
Town Cleanup	\$11,440 to \$131,193	\$64,131.28	5

Time Associated with VRP

Time to Closure in VRP		
Type of Site	Average Time to Closure (Years)	Number of Sites in Average
Asbestos &/or Lead Paint	1.00	14
Dry Cleaner	1.13	15
Firing Range	1.38	8
Industrial Groundwater	11.38	7
Industrial Soil	3.62	29
Landfill	4.45	6
Manufactured Gas Plant	12.99	4
Mine (Reclamation Project)	5.08	3
Pipeline	14.42	5
Spills or AST	6.51	7
Town Cleanup	10.10	5

Voluntary Remediation Program

Arizona Department of Environmental Quality

Program Phone: **(602) 771-4189**

Program Email: **vrp@azdeq.gov**

Program Website: **azdeq.gov/VRP**

DIRECT

Scott Green (602) 771-1612

Green.Scott@azdeq.gov

Frequently Asked Questions:

<https://azdeq.gov/VRP/FAQ>