Evolution of a Commercial Solid Waste Facility located on Native American Lands

SWANA Northern Lights Conference & Tradeshow 2018

Richard Allen, CEO
Salt River Landfill

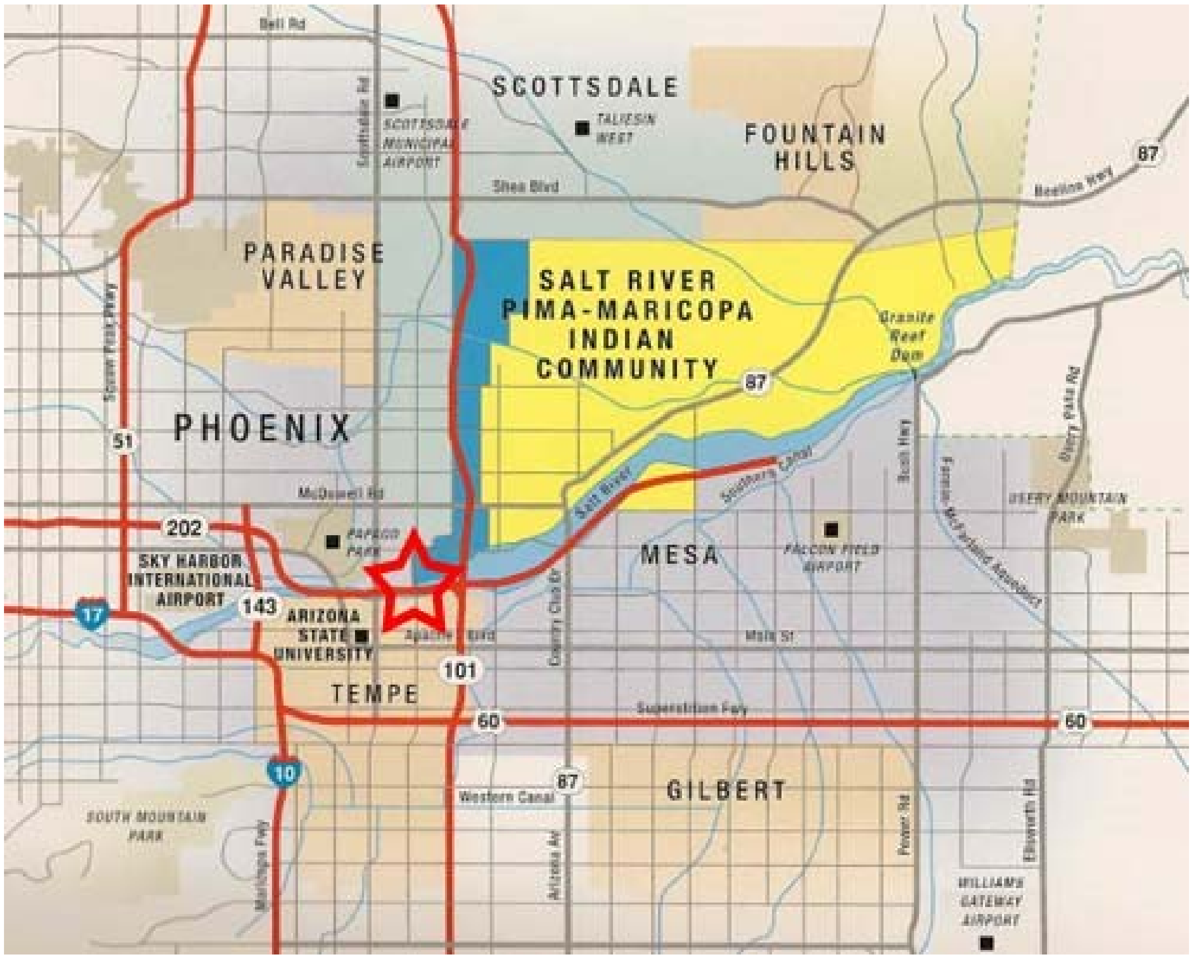
History

- Salt River Pima-Maricopa Indian Community (SRPMIC) is comprised of two distinct Native American tribes: the Onk Akimel O'odham (Pima) and the Xalychidom Piipash (Maricopa).
- The two tribes have been allies for many generations and eventually formalized a confederation and acted as a single political power. Such was the case when establishing relations with the United States. Hence They are now recognized as one tribe by the US Government.

History

- The territory of O'odham and Piipash was originally recognized by the US government on January 10, 1879. Unfortunately, a subsequent executive order on June 14, 1879 reduced the reservation from approximately 680,000 acres to just 46,627 acres and separated the Salt River O'odham-Piipash from their relatives living along the Gila River.
- 1940 SRPMIC adopted a constitution and bylaws and is now governed by a President, Vice-President and Tribal Council

SRPMIC Map



SCOTTSDALE
FOUNTAIN HILLS
PARADISE VALLEY
SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY
PHOENIX
MESA
TEMPE
GILBERT
SKY HARBOR INTERNATIONAL AIRPORT
ARIZONA STATE UNIVERSITY
SCOTTSDALE MUNICIPAL AIRPORT
TALIESIN WEST
PAPAGO PARK
FALCON FIELD AIRPORT
USERY MOUNTAIN PARK
SOUTH MOUNTAIN PARK
WILLIAMS GATEWAY AIRPORT
Granite Reef Dam
Bell Rd
Shea Blvd
McDowell Rd
Scottsdale Rd
Squaw Peak Pkwy
Beeline Hwy
Salt River
Southern Canal
Main St
Superstition Fwy
Western Canal
Country Club Dr
Arizona Av
Power Rd
Ellsworth Rd
Usery Pass Rd
Bush Hwy
Maricopa Fwy
202
143
17
51
87
101
60
10

SRPMIC Seal

Salt River Landfill

Salt River Landfill

- Salt River Landfill was developed in 1993 in response to the US Environmental Protection Agency's new regulation for Municipal Solid Waste Landfills that went into effect on October 9, 1993.
- Originally designed to last 10 years
- Operates as an enterprise of SRPMIC
- Board of Directors selected by Tribal Council
- Board consists of the President, one council member, technical and financial representatives, CEO of landfill and various Community members
- Board reports to the SRPMIC Council

Salt River Landfill

- Budgets are approved by the Board of Directors and ultimately by Tribal Council
- The landfill is self funded through its revenues
- Profits are distributed to the Community to be used for tribal government needs such as police, fire, public works, education, etc.
- The landfill provides valuable employment for Community members and their families (approximately 80% of employees).

Salt River Landfill

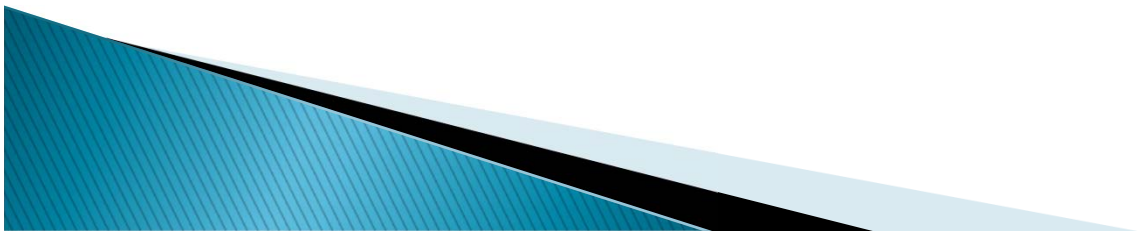
- The landfill serves the Cities of Mesa and Scottsdale, the Salt River Pima-Maricopa and Fort McDowell Indian Communities and is open to the general public
- The landfill operating hours are Monday-Saturday 6 am – 5 pm
- The landfill receives approximately 1600 tons/day

Salt River Landfill
Extension of Site Life

- Variety of methods have been employed to extend the site life
- These include design changes, operational changes and diversion
- Presently the landfill projected site life based on existing tonnages is 2043

Salt River Landfill
Extension of Site Life

- Design Changes
  1. Excavated cells originally were 80 feet deep. Beginning in 1995 all remaining cells were dug to 105 feet.
  2. 2 feet clay liner was replaced by Geosynthetic Clay liner.
  3. Surface area of landfill grew from 100 acres to 144 acres.
  4. Final Grades were increased approximately 90 feet.
  5. Final Phase (Phase VI) had steepened side slopes (2.5:1).



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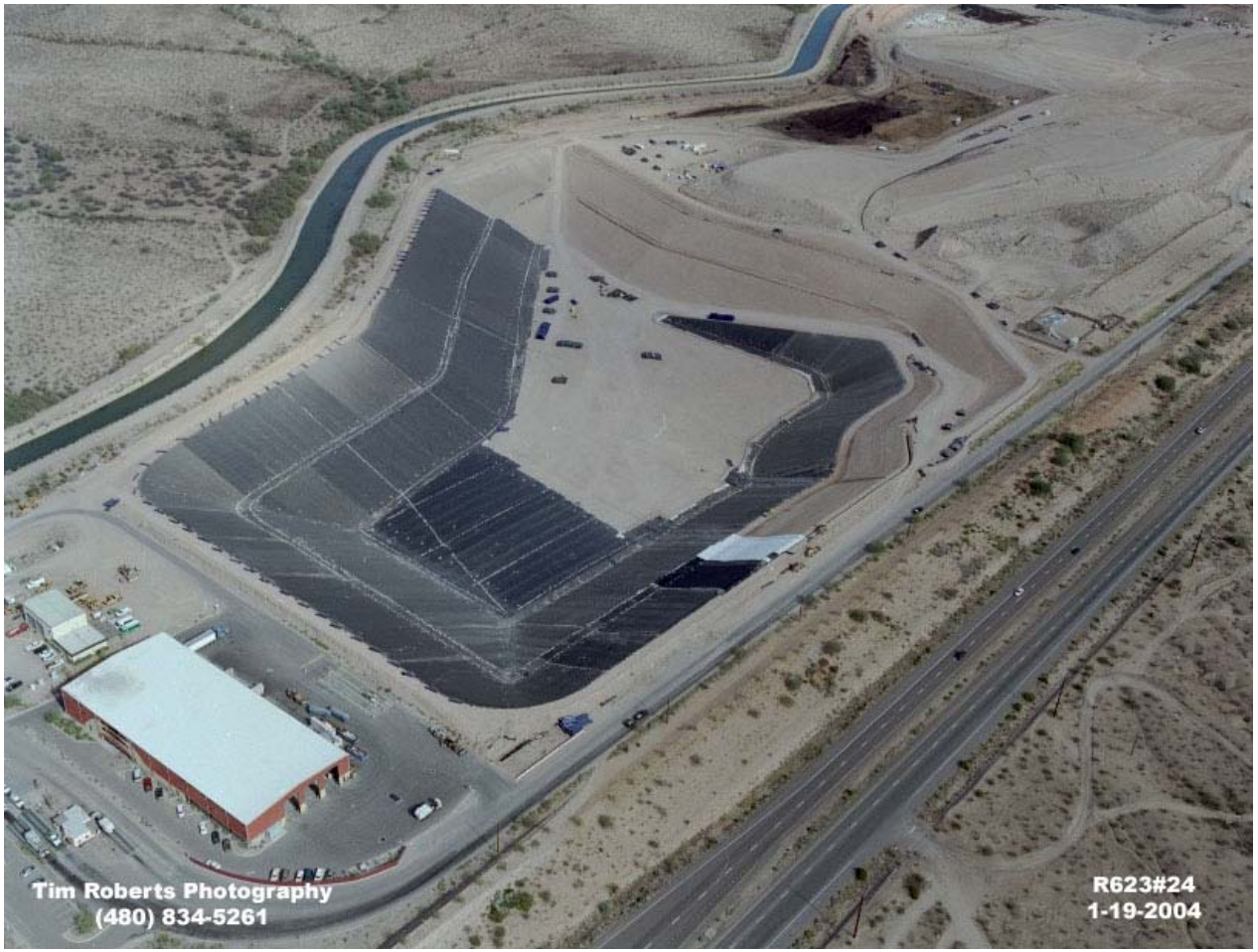
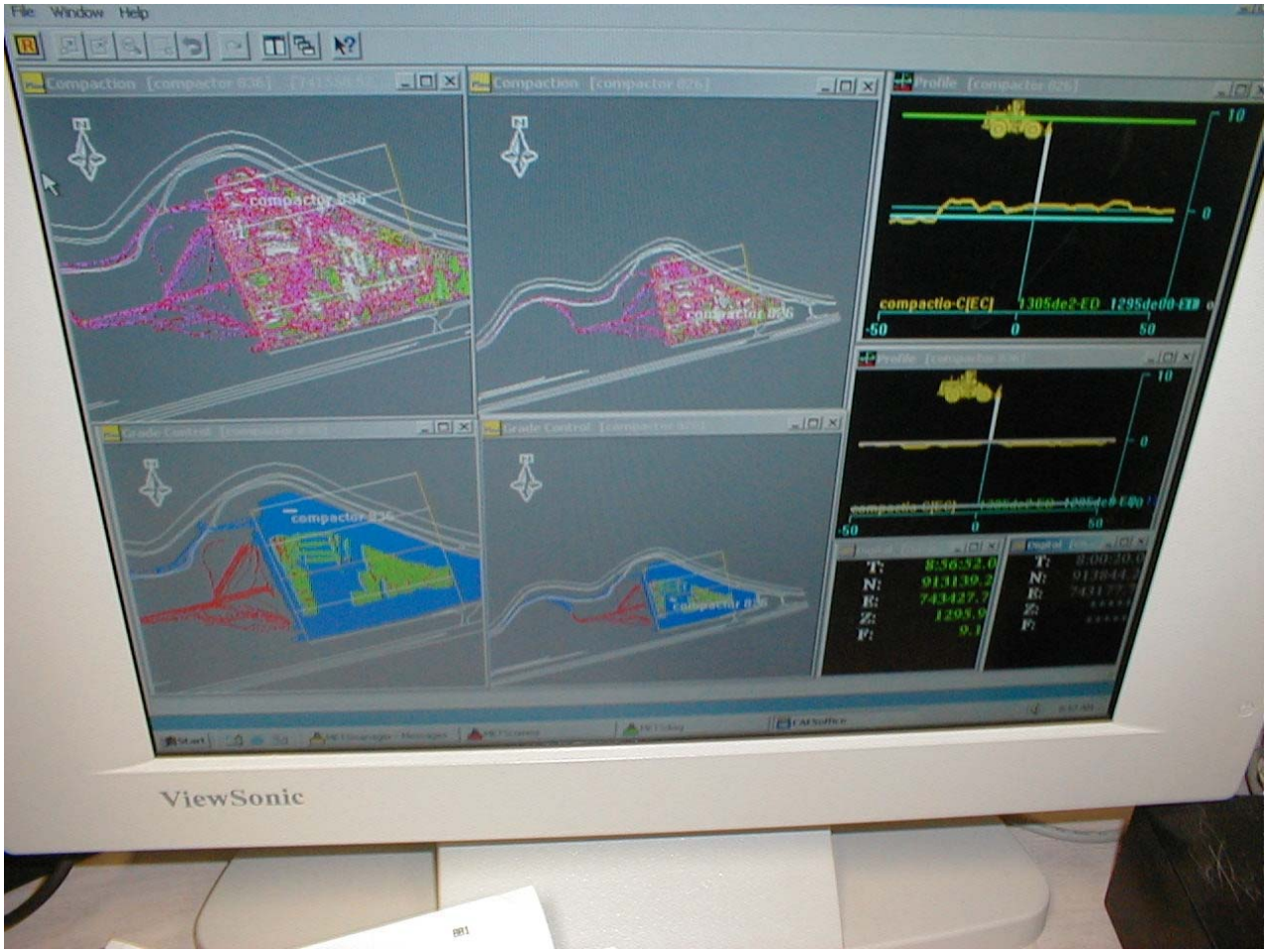


Salt River Landfill
Extension of Site Life

- Operational Changes
  1. Approved to use alternative daily cover. First in Arizona to utilize Tarp-O-Matic Tarping system.
  2. 826 Compactors replaced with 836 Compactors (73,000 lbs vs. 118,000 lbs).
  3. First in Arizona and only second in North America to utilize Caterpillar's Computer Aided Earthmoving System (CAES). A GPS based system to improve compaction.
  4. Approved to operate a portion of landfill as a Bioreactor. First and only Bioreactor approved in Arizona and on tribal lands.

Salt River Landfill
Extension of Site Life



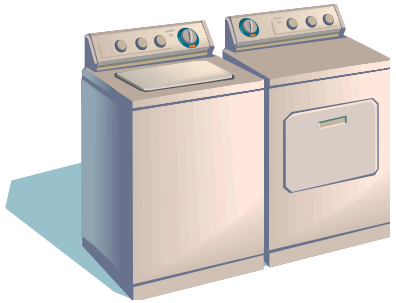
CAES

Salt River Landfill
Extension of Site Life

- Diversion
  1. White Goods have been recycled since inception
  2. Green waste program began in late 1990s
  3. Material Recovery Facility opened in 2001 and sorts single stream residential and commercial recyclables
  4. E- waste program began in 2009
  5. Gently used furniture is given to local non-profit

Salt River Landfill

The “White Goods” program diverts approximately 250 tons/year. White goods are old appliances such as refrigerators, washers, dryers, ovens and water heaters.

Salt River Landfill

The Green Waste program began in late 1990s

The green waste diverts approximately 40,000 tons/year

Salt River Landfill

The Material Recovery Facility (MRF) began operation in early 2001

The MRF processes 85,000 tons/year

Salt River Landfill

The electronic waste (ewaste) drop-off program began in 2009. Those materials are picked up periodically for recycling and proper disposal.

Landfill Gas Projects

- In the late 1990s the Community was looking for a solution to landfill gas migration issues at their closed Tri-Cities Landfill. The Salt River Landfill worked with the Community to find a developer willing to install a landfill gas collection system at Tri-Cities Landfill and another small closed landfill within the Community as well as install landfill gas infrastructure at the Salt River Landfill
- The local utility then built a landfill gas to energy facility at Tri-Cities Landfill

Landfill Gas Projects

- The Tri-Cities Landfill 4 MW Gas Generating Plant opened in summer of 2001.
- A pipeline connecting the Salt River Landfill to the Tri-Cities Plant was completed in Spring of 2008. This allowed plant to get back to capacity of 4 Megawatts.
- In 2014 Salt River Project (SRP) the utility that owns and operates the plant stated it was too costly to continue operating the plant. In April of 2015 they shut down the gas generating plant.

Landfill Gas Projects

- The landfill gas developer made several attempts to take over ownership and/or operation of the plant but was unsuccessful. SRP continued to pay for the gas until the end of 2016 per its contract with the developer.
- Salt River Landfill put out a request for proposals in late summer of 2016 for a beneficial use of the landfill gas from the two closed landfills and the Salt River Landfill.
- A developer of a high BTU project was selected and the Salt River Landfill and SRPMIC are presently in negotiations for a long term gas rights agreement.

Salt River Landfill

The Landfill Gas To Energy plant at Tri-Cities Landfill opened in June 2001

The pipeline connecting the Salt River Landfill with the energy plant at Tri-Cities Landfill began operation in 2008

Salt River Landfill

- In addition, the landfill is recognized by it's peers for its excellence

Salt River Landfill

- Selected by Caterpillar to test their future products.

Salt River Landfill

- The first and only landfill in the state to be approved to utilize bioreactor technology. This technology adds moisture to the waste to speed up decomposition thereby reducing the volume of the waste and creating more airspace.

Salt River Landfill

The landfill conducts numerous tours with schools, girl and boy scout groups and other interested parties. On average approximately 1,000 people tour the facility each year. Tours can be scheduled through our website at saltriverlandfill.com.

Salt River Landfill

The landfill is always looking at alternative solid waste technologies that can reduce the amount of waste going into the landfill. These technologies are explored for their feasibility, economics and scalability.

Salt River Landfill

Any Questions ?????????

If you think of any questions later please feel free to contact me at the following:

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