

# The Pueblo of Sandia: Water Quality Standards, National Pollutant Discharge Elimination Systems (NPDES) Program, and the Clean Water Act

Scott Bulgrin  
Pueblo of Sandia

2011 National Tribal Water Quality Conference

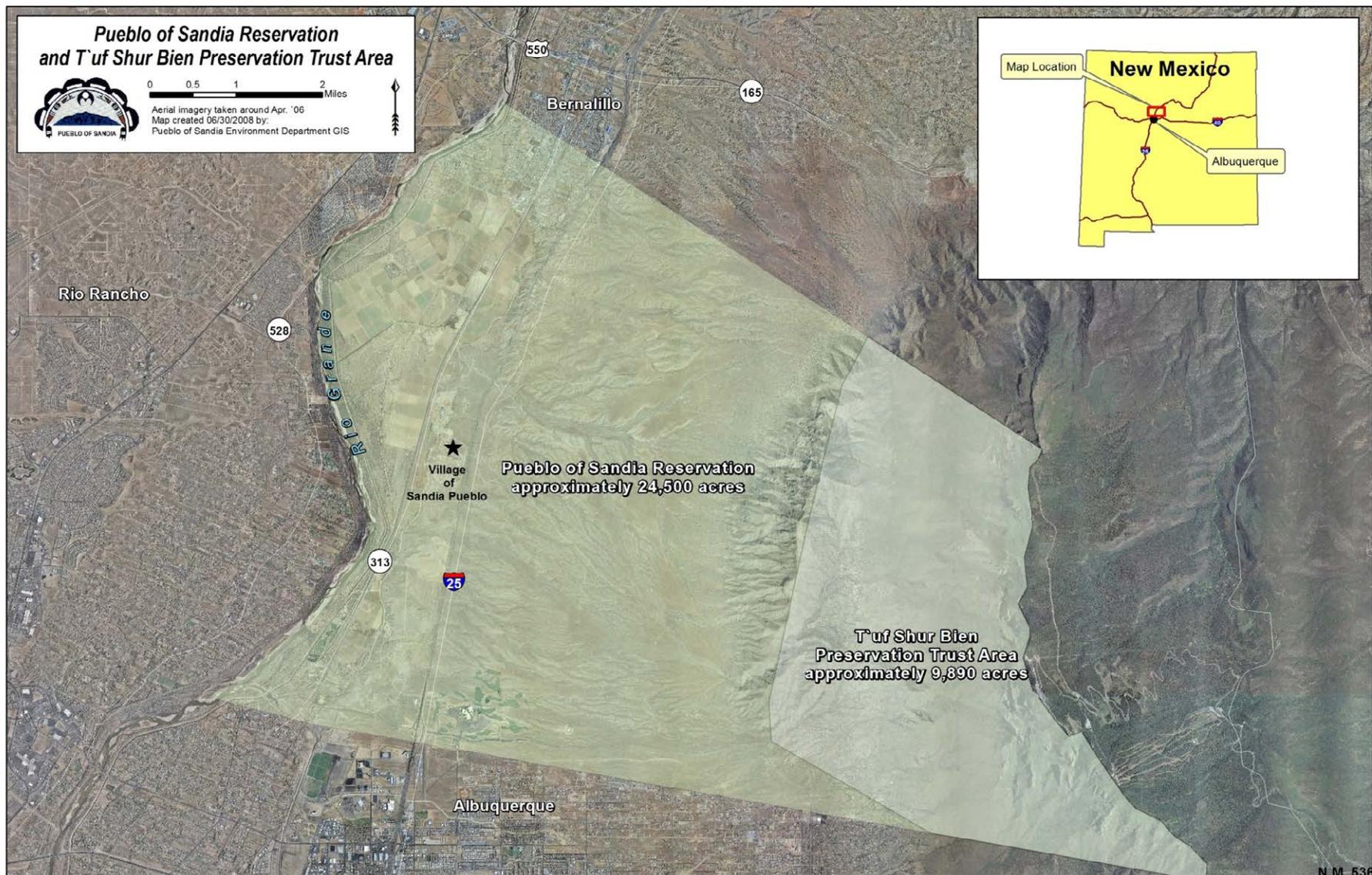


# Pueblo of Sandia Reservation and T'uf Shur Bien Preservation Trust Area



0 0.5 1 2 Miles

Aerial imagery taken around Apr. '06  
Map created 06/30/2008 by:  
Pueblo of Sandia Environment Department GIS



Map Location

New Mexico

Albuquerque

Rio Rancho

528

Rio Grande

313

25

★  
Village of Sandia Pueblo

Pueblo of Sandia Reservation  
approximately 24,500 acres

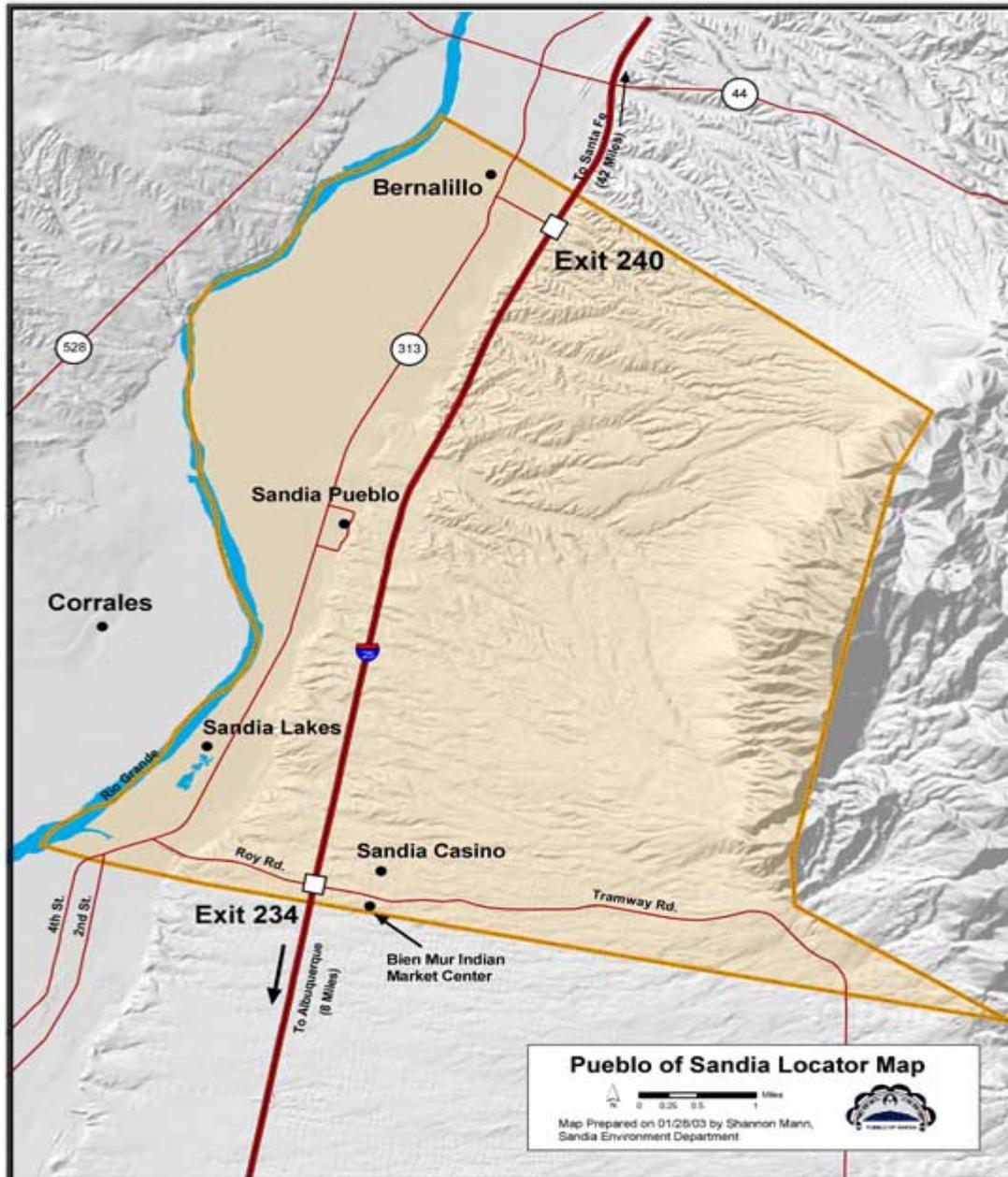
165

550

Bernalillo

Albuquerque

T'uf Shur Bien  
Preservation Trust Area  
approximately 9,890 acres



# The Pueblo of Sandia Environment Department

- Goal: To protect and manage the reservation environment through the application of sound scientific methods and cultural needs and to involve the members of Sandia Pueblo in this mission.
- Sixteen (16) people work in the Pueblo of Sandia Environment Department.
- Environmental programs include: air quality, water resources, water quality, GPS/GIS, solid waste, and Sandia Bosque restoration.

# Water Quality



# Water Quality Manager Job Duties

- Surface Water Monitoring (Biological, Chemical, and Physical)
- Ambient Toxicity Monitoring (Fish and Invertebrate)
- Endangered Species Monitoring (Rio Grande Silvery Minnow and Southwestern Willow Flycatcher)
- Water Quality Standards (EPA approved)
- Wetland Rehabilitation (Sandia Bosque Ponds)
- Fish Kill Investigations (WWTP spills)

# Water Quality Manager Job Duties

- Biological Assessments (National Environmental Policy Act [NEPA] Compliance, Fish, Wildlife, Bird and Vegetation Surveys)
- National Pollutant Discharge Elimination Systems (NPDES) Permitting and Compliance (3 Wastewater Treatment Plants, 1 Storm Water Channel)
- Bosque Restoration (Exotic Plant Removal)
- Dredge and Fill Activities and Storm Water Runoff Compliance (Section §401 and §404 of the CWA)

# Water Quality Standards (WQS)

- State and Tribes adopt Water Quality Standards to protect public health, enhance water quality, and meet the purposes of the CWA.
- EPA develops regulations and policies and provides program guidance.
- EPA reviews and approves State and Tribal-adopted Water Quality Standards.
- As of November 1, 2011, 39 Tribes have WQS approved by EPA.

# WQS Program Administration

- To Administer the WQS program an Indian Tribe must meet certain criteria:
  1. Recognized by the Department of Interior
  2. Have a Governing Body
  3. Specified Waters,
  4. Management Capability

# Pueblo of Sandia WQS

- The Pueblo of Sandia was first Tribe in Nation to apply for Water Quality Standards with the specific intention of protecting the environment and ceremonial use of surface waters.
- WQS approved by EPA on August 10, 1993.
- WQS revised January 31, 2008, adopted by Tribal Council Resolution on 2009-118 on November 13, 2009 and approved by EPA March 9, 2010.

# Pueblo of Sandia WQS

- Purpose:
  1. Designate existing uses for all surface waters at Sandia Pueblo.
  2. Prescribe Water Quality Standards (narrative and numeric) Designate existing uses for all surface waters at Sandia Pueblo to protect the uses.
  3. Impose the highest “statutory and regulatory requirements” for point sources and “best management practices” for non-point sources.
  4. Assure that degradation of existing water quality does not occur.
  5. Promote the social welfare, economic, and environmental well being of the Pueblo.

# NPDES and WQS

- NPDES Permits contain:
  1. Standard conditions, common to all permits;
  2. Site-specific discharge or effluent limits;
  3. Standard and site-specific compliance monitoring requirements; and
  4. Other site-specific conditions.

# NPDES and WQS

- NPDES permits have effluent limitations based on:
  1. National effluent limitation guidelines;
  2. Permit writers best professional judgment;  
and
  3. Water quality-based effluent limitations.

# Rio Grande



# NPDES and the Pueblo of Sandia

- Under CWA Section 402 National Pollutant Discharge Elimination System (NPDES) each point source discharger is required to obtain a permit that limits the pollutant discharged.
- Activities that require a NPDES permit are: major and minor municipal WWTPs, major and minor industrial facilities, mines, combined sewer overflows, sanitary sewer overflows, stormwater pollution, and concentrated animal feeding operations.



Town of Bernalillo WWTP

Rio Rancho WWTP #3

Rio Rancho WWTP #2

AMAFCA North Diversion Channel

**NPDES Permittees  
on the Rio Grande  
In Pueblo of Sandia Stretch**



Map Prepared on 11/21/02 by Shannon Mann,  
Sandia Environment Department

# Wastewater Treatment Plants

- Three (3) wastewater treatment plants (WWTPS) discharge into the Pueblo's stretch of the Rio Grande.
- They are: Town of Bernalillo, Rio Rancho WWTP#2, and Rio Rancho WWTP#3.
- Biochemical oxygen demand (BOD5), nitrate, *Escherichia coli* and other WWTP parameters are sampled routinely at the discharge point of each facility.

# Town of Bernalillo WWTP

- NPDES Permit effective October 31, 2010, expiration October 31, 2015.
- Design flow of 1.2 MGD
- Facility upgraded in August 2008.
- Town of Bernalillo growing and expanding.



# Town of Bernalillo WWTP

- NPDES Permit requires reporting of the following: flow, pH, total residual chlorine, BOD<sub>5</sub>, total suspended solids, *Escherichia coli*, nitrate, total ammonia, total arsenic, and whole effluent lethality.
- NPDES Permit requires notification to Pueblo of Sandia on any noncompliance which may endanger health or the environment as soon as possible or within 12 hours.
- NPDES Permit also requires annual summary of data from whole effluent lethality testing, and Discharge Monitoring Reports (DMRs) to be sent to the Pueblo of Sandia.

# Town of Bernalillo WWTP

- Average flow of 0.7 MGD
- Nitrate and ammonia limits in noncompliance on a regular basis.
- Cannot meet the total arsenic limit. On a compliance schedule.
- EPA has Administrative Order on the facility.

# Rio Rancho WWTP #2

- NPDES Permit effective February 1, 2010, expiration January 31, 2015.
- Design flow of 5.5 MGD
- Facility is one of three WWTPs for city of Rio Rancho.
- WWTP almost to capacity and is in constant repair, lines and lift stations old.
- Rio Rancho growing and expanding.



# Rio Rancho WWTP #2

- NPDES Permit requires reporting of the following: flow, pH, total residual chlorine, BOD5, total suspended solids, *Escherichia coli*, nitrate, total ammonia, total arsenic, and whole effluent lethality.
- NPDES Permit requires notification to Pueblo of Sandia on any noncompliance which may endanger health or the environment as soon as possible or within 12 hours.
- NPDES Permit requires annual summary of data from whole effluent lethality testing, and Discharge Monitoring Reports (DMRs) to be sent to the Pueblo of Sandia.
- NPDES permit also requires submittal of an approvable pretreatment program.

# Rio Rancho WWTP #2

- Average flow of 3.9 MGD
- Line breaks, lift station overflows, and other infrastructure problems are constantly occurring on a regular basis.
- Cannot meet the total arsenic limit. On a compliance schedule.
- EPA has Administrative Order on the facility.



# Rio Rancho WWTP #3

- NPDES Permit effective January 1, 2010, expiration December 31, 2015.
- Design flow of 0.85 MGD
- Rio Rancho WWTP #3 historically was in noncompliance so often the city of Rio Rancho diverted the flow to Rio Rancho WWTP #2.
- No discharge currently to the Rio Grande

# AMAFCA's North Diversion Channel

- The Albuquerque Metropolitan Arroyo Flood Control Authority's (AMAFCA's) North Diversion Channel diverts approximately 67% of Albuquerque's storm water into Tribal waters of the Rio Grande.
- The North Diversion Channel is one of two main channels that diverts storm water into the Rio Grande.



# AMAFCA's North Diversion Channel

- The Pueblo has established three (3) water quality monitoring sites on the North Diversion Channel.
- Sampling for ambient toxicity, turbidity, *Escherichia coli*, nutrients, metals, and other parameters is conducted routinely after storm events.



# Albuquerque Municipal Separate Storm Sewer System (MS4)

- NPDES Permit effective December 1, 2003, expiration November 30, 2008. Currently under an Administrative Continuance. Pueblo of Sandia co-certifies the NPDES permit with the State of New Mexico.
- Joint permit for: Albuquerque, AMAFCA, New Mexico State Highway and Transportation Department and the University of New Mexico.
- The city of Albuquerque was the last city in the United States to be issued a medium and large separate storm sewer systems (MS4) permit.

# MS4 Six Minimum Control Measures

- Public Education and Outreach
- Public Involvement/Participation
- Illicit Discharge Detection and Elimination
- Construction Site Runoff Control
- Post-Construction Storm Water Management in New and Redevelopment
- Pollution Prevention/Good Housekeeping for Municipal Operations

# Albuquerque Municipal Separate Storm Sewer System (MS4)

- NPDES permit also specifies the implementation of Storm Water Management Programs (SWMPs) that include: SWMP document, monitoring dry and wet weather, and implementation of a fecal coliform Total Maximum Daily Load (TMDL).
- NPDES permit specifies that the Annual Report, discharge reports and SWMP updates be sent to the Pueblo for review and comments.

# Dredge and Fill Activities

- Under the Clean Water Act (CWA) - Section 404 whenever a project (usually construction) occurs that would affect waters of the United States a Dredge or Fill Permit is required and applied for through the Army Corps of Engineers.
- Through agreement with the Army Corps of Engineers, the Pueblo of Sandia is notified on all projects that may influence arroyos and water ways within and outside of the Pueblo.

# Dredge and Fill Activities

- Under provisions of the CWA, tribes with WQS have the authority to protect their waters through a §401 Water Quality Certification.
- This §401 Water Quality Certification is required from the Pueblo of Sandia Environment Department on all projects that may influence arroyos and water ways within and outside of the Pueblo.



# Storm Water Program Timeline

- The 1987 Amendments to the CWA set the process of controlling storm water pollution into motion.
- 1990 – Phase I Rule
  - Larger MS4s (100,000+ pop.)
  - Industrial Activity
  - Construction 5+ acres
  - NPDES permit needed
- 1999 – Phase II Rule
  - Smaller MS4s in Urbanized Areas (combined pop. 50,000+ and pop. density in core 1000/sq. mile)
  - Construction 1-5 acres
  - Waivers for low erosivity and no exposure
  - NPDES permit needed

# Section 402(p) of the CWA

- Storm water discharges associated with industrial activity that discharge to waters of the United States must be authorized by a NPDES permit.
- Two types:
  - Multi-Sector General Permit (MSGP)
  - Construction General Permit (CGP)

# Multi-Sector General Permit (MSGP)

- Authorizes storm water discharges associated with industrial activity from sectors/categories.
- Industries are divided into Sectors (A-AD) These include:
  - Timber Products
  - Paper & Allied Products
  - Automobile Salvage Yards
  - Metal Mining
  - Coal Mining & Related Facilities
  - Oil & Gas Extraction & Refining
- Some facilities are subject to monitoring

# Construction General Permit (CGP)

- Any construction activity that results in land disturbances of one (1) acre or more needs coverage under NPDES CGP.
  - “Large” construction activities (1990) – 40 CFR §122.26 (b) (14)
  - “Small” construction activities (2003) - 40 CFR §122.26 (b)(15) (ii)



# Storm Water

- The Pueblo of Sandia Environment Department reviews all storm water projects that occur on the Pueblo and those that are off tribal land that may influence the tribal waters. Notice of Intent (NOI), Storm Water Pollution Prevention Plans (SWPPs), Notice of Termination (NOT) are reviewed, and commented on. General construction sites are inspected to minimize disturbance and comply with Phase II Storm Water Regulations and the Pueblo's WQS.



# What has the Pueblo learned dealing with WQS, NPDES and CWA?

- Communication between Federal, State and Tribal agencies needs to occur
- Regulated community needs to be familiarized with Federal, State and tribal regulations
- Increased outreach to regulated community
- Enforcement concerns

**For Further Information  
Please Contact:**



**Pueblo of Sandia Environment Department  
481 Sandia Loop  
Bernalillo, NM 87004  
(505) 867- 4533  
[sbulgrin@sandiapueblo.nsn.us](mailto:sbulgrin@sandiapueblo.nsn.us)**