LA-UR-11-10925

Approved for public release; distribution is unlimited.

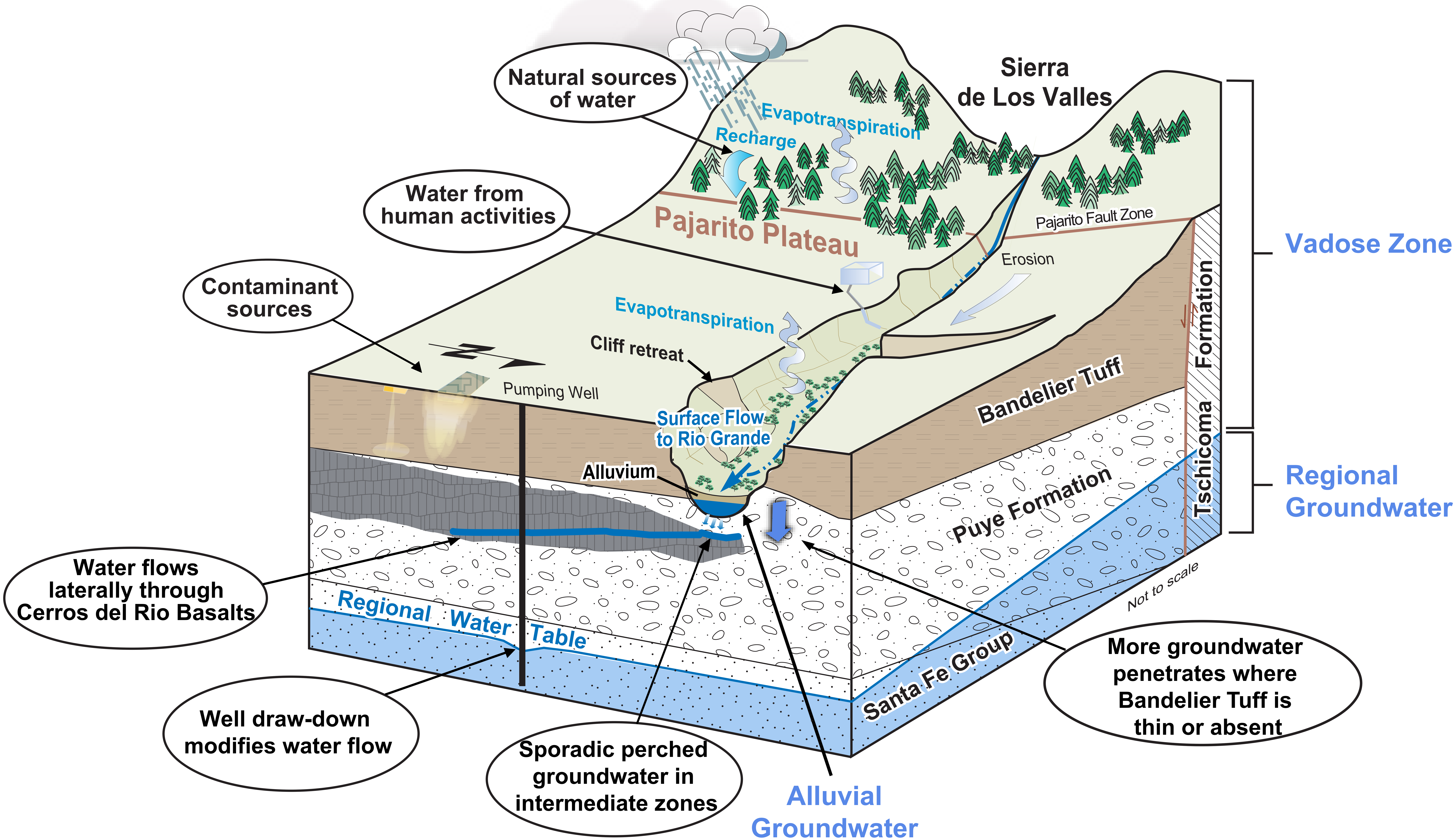
Title: Combined Watershed Posters

Author(s): Lopez, Lorraine B.
Birdsell, Kay
Broxton, Dave

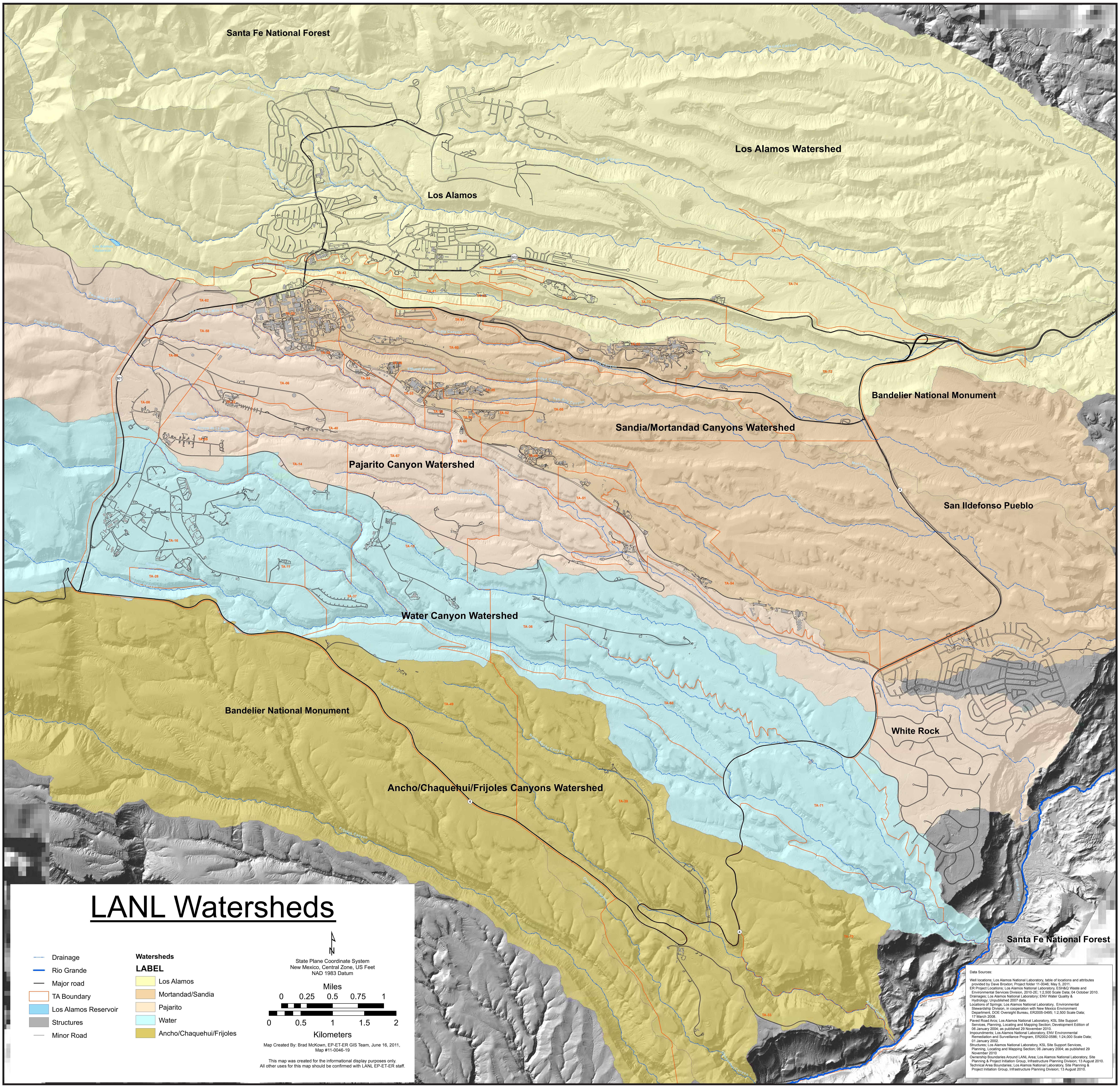
Intended for: DOE
NNMCAB Water Forum, 2011-06-22 (Santa Fe, New Mexico, United States)
Groundwater
Reading Room
Consent

Disclaimer:
Los Alamos National Laboratory, an affirmative action/equal opportunity employer,is operated by the Los Alamos National Security, LLC for the National NuclearSecurity Administration of the U.S. Department of Energy under contract DE-AC52-06NA25396. By acceptance of this article, the publisher recognizes that the U.S. Government retains nonexclusive, royalty-free license to publish or reproduce the published form of this contribution, or to allow others to do so, for U.S. Government purposes. Los Alamos National Laboratory requests that the publisher identify this article as work performed under the auspices of the U.S. Departmentof Energy. Los Alamos National Laboratory strongly supports academic freedom and a researcher's right to publish; as an institution, however, the Laboratory does not endorse the viewpoint of a publication or guarantee its technical correctness.

Water Flow Model on the Pajarito Plateau Groundwater Zones

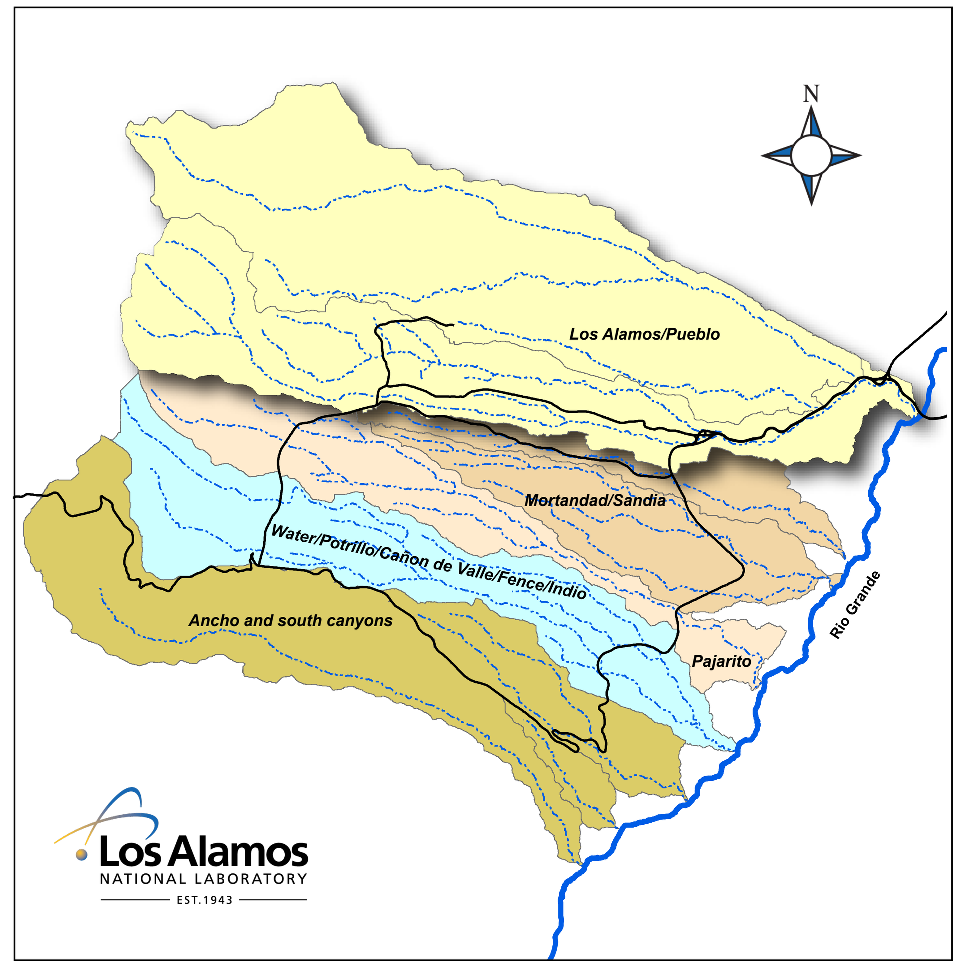


Los Alamos National Laboratory Watersheds



Los Alamos/Pueblo Canyon Watershed

Los Alamos National Laboratory Watershed Aggregates



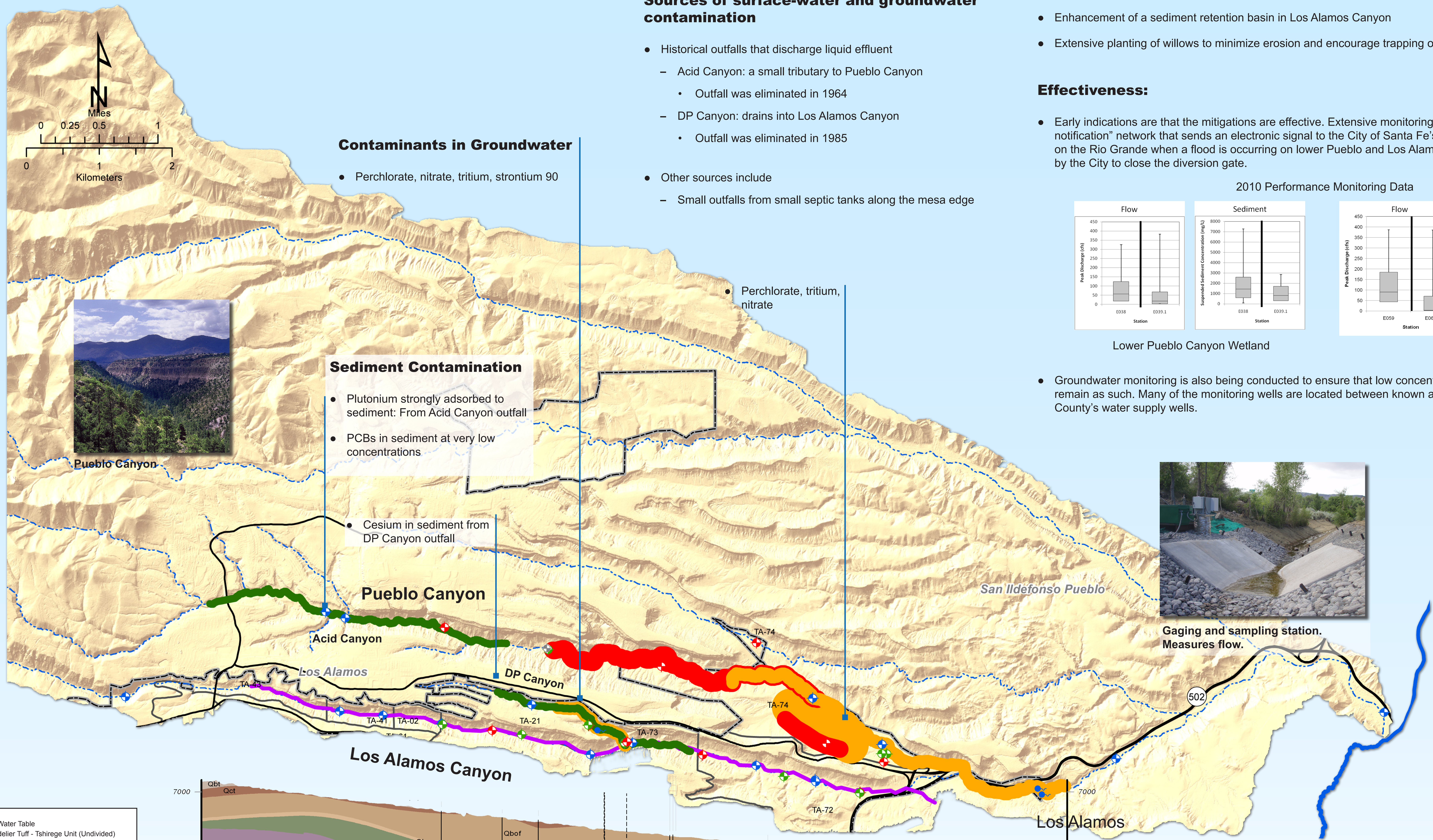
History of the Watershed

- Laboratory's earliest facilities starting in 1943
- Primary operations on the mesas surrounded by canyons
  - Plutonium processing
  - Uranium processing
  - Wastewater treatment facilities
  - Waste disposal (material disposal areas)

Contaminant Transport:

- Storm water runoff
  - Very short-lived (generally less than 2-4 hours),
  - Sometimes extends to the Rio Grande.
  - Increased after the Cerro Grande fire in May 2000 and has substantially lessened
  - Sometimes contains low concentrations of contaminants
  - Risk within regulatory limits

The retention basin in upper Los Alamos Canyon traps and settles sediment while allowing continued flow of storm water.



Pueblo Canyon

Contaminants in Groundwater

- Perchlorate, nitrate, tritium, strontium 90

Sediment Contamination

- Plutonium strongly adsorbed to sediment: From Acid Canyon outfall
- PCBs in sediment at very low concentrations
- Cesium in sediment from DP Canyon outfall

- Perchlorate, tritium, nitrate

Sources of surface-water and groundwater contamination

- Historical outfalls that discharge liquid effluent
  - Acid Canyon: a small tributary to Pueblo Canyon
    - Outfall was eliminated in 1964
  - DP Canyon: drains into Los Alamos Canyon
    - Outfall was eliminated in 1985
- Other sources include
  - Small outfalls from small septic tanks along the mesa edge

Controls/Mitigations/Monitoring

To address storm water transport of contaminated sediment, engineered and other practical mitigations were placed in the watershed in 2009 and 2010.

- Grade Control Structures in DP and Pueblo Canyons
- Enhancement of a sediment retention basin in Los Alamos Canyon
- Extensive planting of willows to minimize erosion and encourage trapping of sediment

Effectiveness:

- Early indications are that the mitigations are effective. Extensive monitoring is underway and includes an "early-notification" network that sends an electronic signal to the City of Santa Fe's Buckman Direct Diversion project site on the Rio Grande when a flood is occurring on lower Pueblo and Los Alamos Canyons. This signal can be used by the City to close the diversion gate.

2010 Performance Monitoring Data

Flow — Sediment — Flow — Sediment (Station)

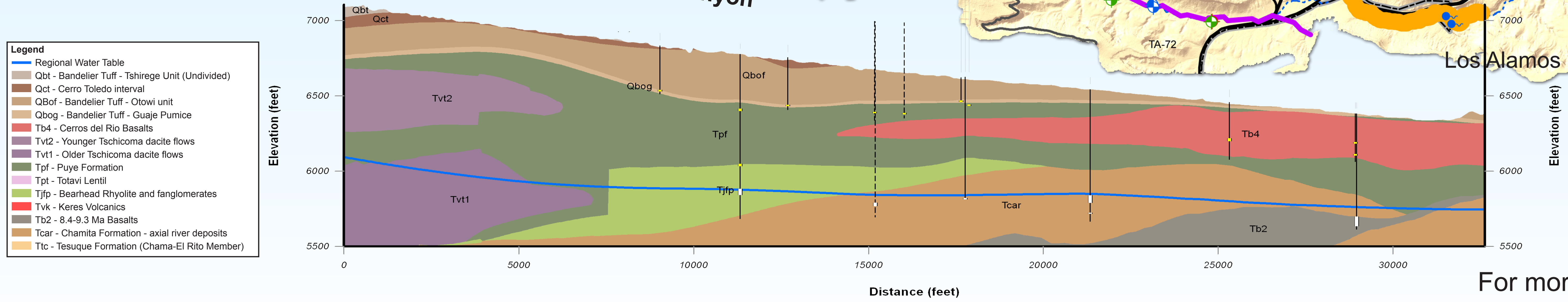
Lower Pueblo Canyon Wetland — DP Canyon

- Groundwater monitoring is also being conducted to ensure that low concentrations of groundwater contamination remain as such. Many of the monitoring wells are located between known areas of contamination and Los Alamos County's water supply wells.

Gaging and sampling station. Measures flow.

Legend:
- Planned
- Alluvial
- Intermediate
- Regional
- Spring

Contaminant distribution
- Alluvial
- Intermediate
- Regional
- Geologic cross-section extent
- Major road
- Rio Grande
- Watercourse
- LANL boundary
- TA boundary



Los Alamos
NATIONAL LABORATORY
EST.1943

Los Alamos National Laboratory is operated for the Department of Energy's National Nuclear Security Administration by Los Alamos National Security, LLC, a team of Bechtel National, the University of California, BWX Technologies, and Washington Group International.

For more information, visit http://www.lanl.gov/environment/h2o/

Mortandad/Sandia Canyon Watershed

Los Alamos National Laboratory Watershed Aggregates

History of the Watershed

Sandia Canyon

Primary operations on the mesas surrounded by canyons:

- Laboratory's utilities located near head of Sandia Canyon in TA-03 since early 1950s
- Sanitary wastewater treatment facility
- Former storage area for electrical transformers and capacitors

Mortandad Canyon

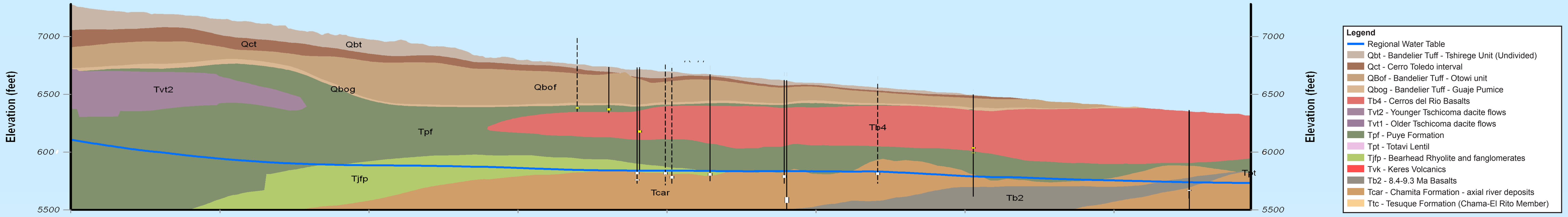
Primary operations on the mesas surrounded by canyons:

- Radioactive liquid waste treatment facilities at TA-35 (former) and TA-50 (current)
- Research laboratories, including chemistry and actinide research
- Waste Disposal (Material Disposal Area C)

Contaminants in Groundwater

- Chromium, nitrate – present beneath Sandia and Mortandad watersheds
  - Sources: historical TA-03 power plant cooling towers
- Perchlorate, nitrate and tritium – beneath Mortandad watershed
  - Sources: Historical releases from the RLWTF outfall

Sandia Canyon Cross Section



Sediment contamination

Sandia Canyon

- Large portion of the original chromium inventory present in sediments within the Sandia Canyon wetland: From TA-03 power plant cooling towers
- PCBs in sediment within the Sandia Canyon wetland: From electrical transformer storage areas

Mortandad Canyon

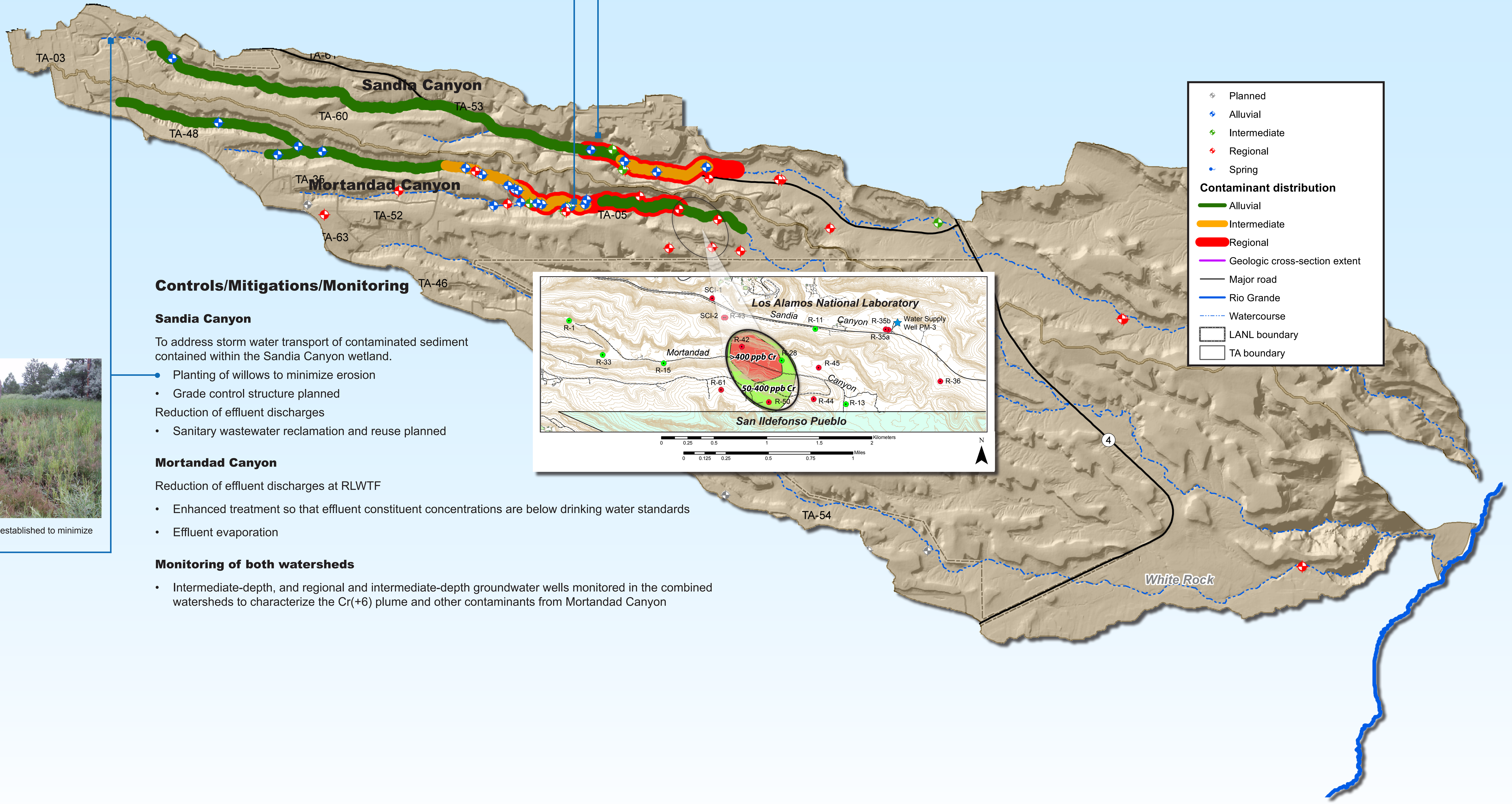
- Strontium adsorbed to sediment and in shallow groundwater: From RLWTF outfall
- Radionuclides strongly adsorbed to sediment in Mortandad Canyon: From RLWTF outfall

Sources of contamination

Historical outfalls that discharge liquid effluent to

- Sandia Canyon
  - Early 1950's to today —cooling towers and treated sanitary wastewater
  - TA-03 power plant cooling towers discharged Cr(+6) from 1956 to 1972, estimated mass is 69,000 to 160,000 lb
  - Currently receives liquid effluent from LANL's sanitary wastewater system, cooling towers and steam plant totaling > 200,000 gal/day
- Mortandad Canyon
  - 1963 to today – releases effluent from the Radioactive Liquid Waste Treatment Facility (RLWTF)
  - Currently most wastewater is evaporated

Sandia wetland with willows established to minimize erosion.



Controls/Mitigations/Monitoring

Sandia Canyon

To address storm water transport of contaminated sediment contained within the Sandia Canyon wetland.

- Planting of willows to minimize erosion
- Grade control structure planned

Reduction of effluent discharges

- Sanitary wastewater reclamation and reuse planned

Mortandad Canyon

Reduction of effluent discharges at RLWTF

- Enhanced treatment so that effluent constituent concentrations are below drinking water standards
- Effluent evaporation

Monitoring of both watersheds

- Intermediate-depth, and regional and intermediate-depth groundwater wells monitored in the combined watersheds to characterize the Cr(+6) plume and other contaminants from Mortandad Canyon

Los Alamos
NATIONAL LABORATORY
EST.1943

Los Alamos National Laboratory is operated for the Department of Energy's National Nuclear Security Administration by Los Alamos National Security, LLC, a team of Bechtel National, the University of California, BWX Technologies, and Washington Group International.

For more information, visit http://www.lanl.gov/environment/h2o/

Pajarito Canyon Watershed

Los Alamos National Laboratory Watershed Aggregates

History of the Watershed

- Laboratory operations in watershed began in 1943 and include some of the earliest Manhattan Project experimental sites
- Laboratory operations occurred on mesas and on the canyon floor:
  - Development of explosives
  - Explosive firing sites
  - Radiochemistry laboratories
  - Nuclear criticality experiments
  - Waste Disposal (MDAs)
  - Wastewater treatment facilities

Area G looking eastward with Pajarito Canyon to the right.

View from top of Pajarito Canyon

Contamination in Groundwater

- Volatile organic compounds
  - Source is former vacuum repair shop
- Chloride and barium
  - Source may be related to application of road salts
- No definitive groundwater contamination from TA-54

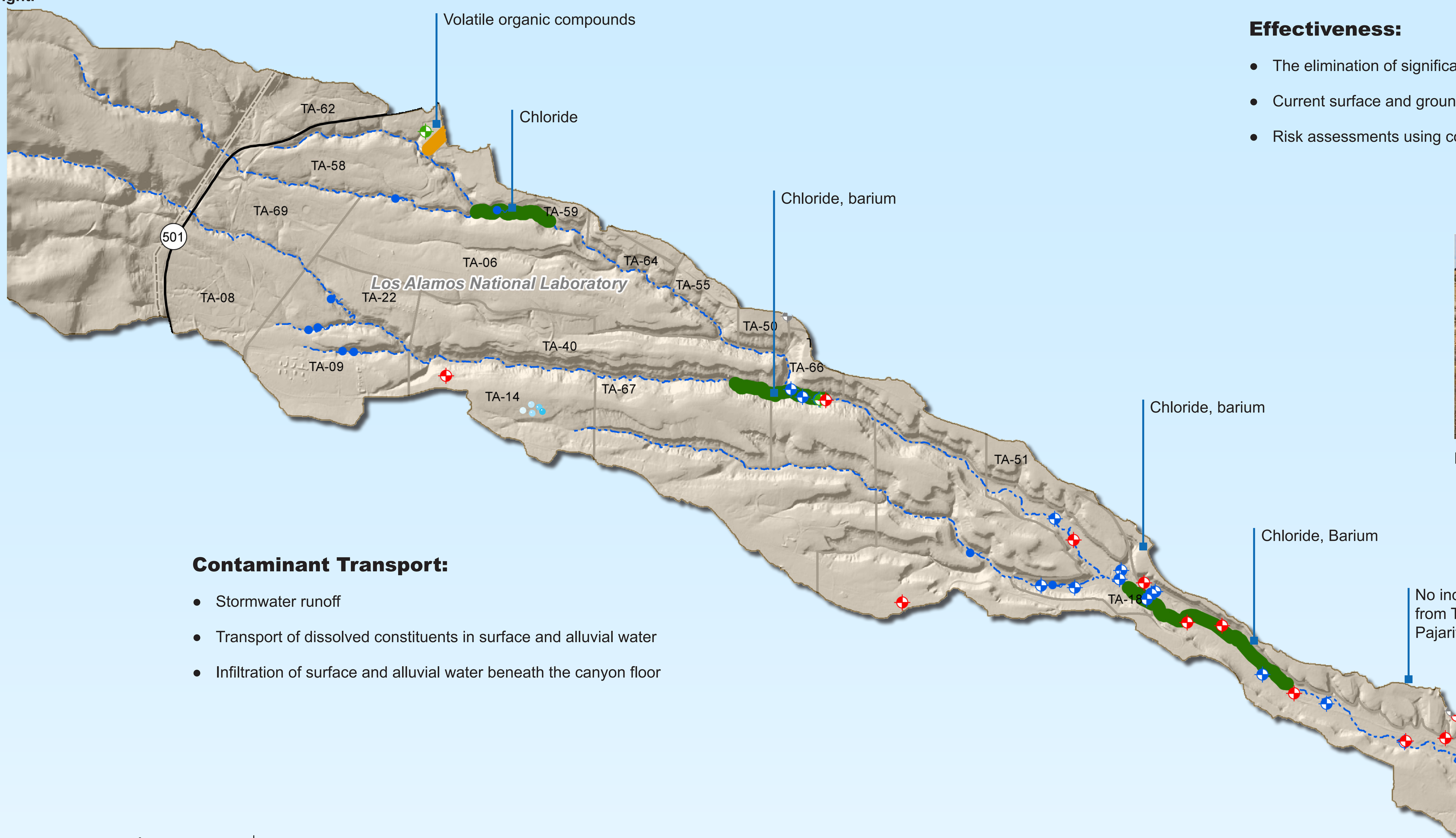
Controls/Mitigations/Monitoring

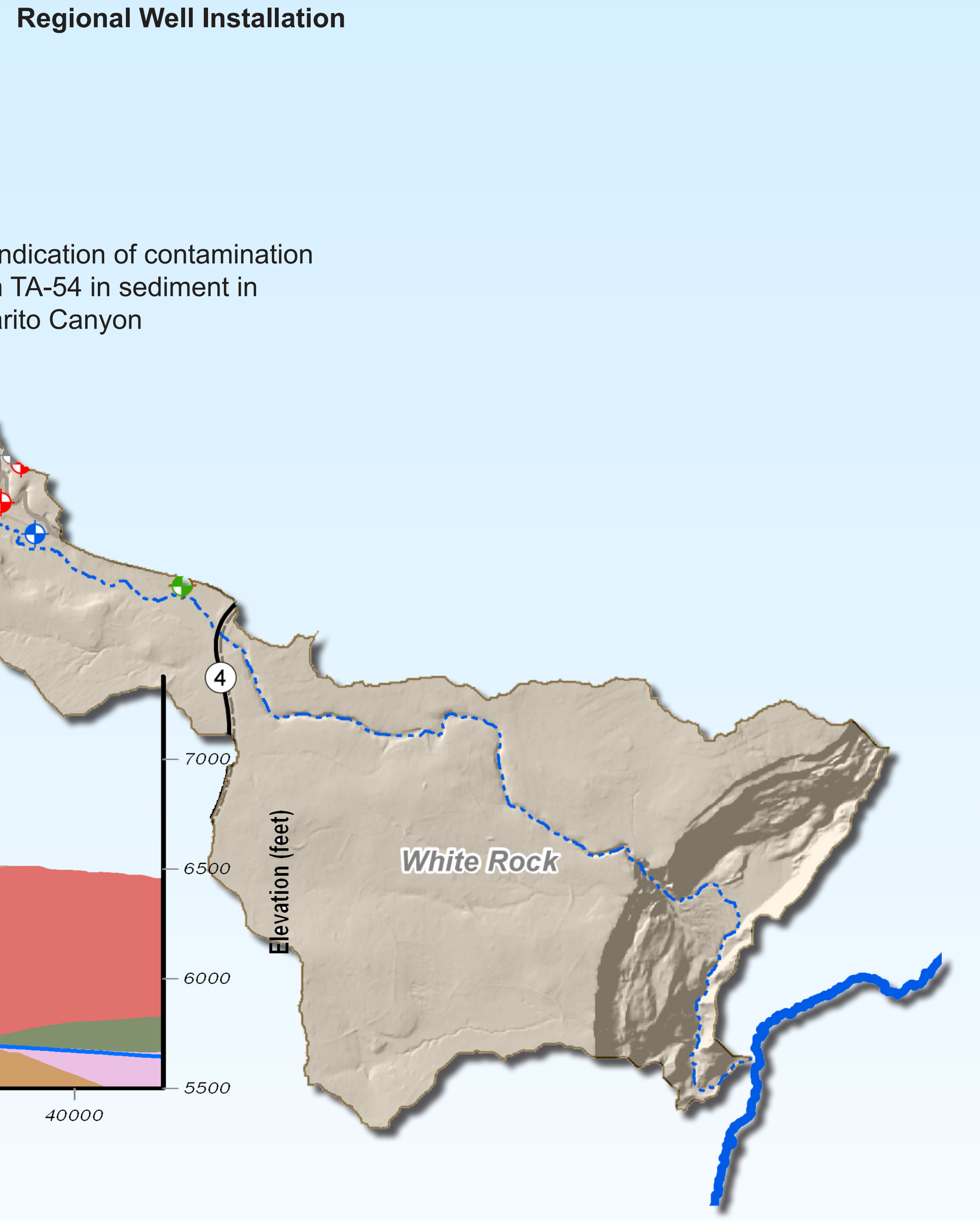
To address storm water transport of contaminated sediment, engineered and other practical mitigations were placed in the watershed in 2009 and 2010.

- Outfalls, septic systems, and surface releases primarily responsible for contaminants in surface water and groundwater are no longer active or have been eliminated
- Major facilities that were contaminant sources have been closed (e.g. TA-18)
- New monitoring wells have been installed throughout the watershed to monitor groundwater
- A flood-retention structure installed above TA-18 after the Cerro Grande fire traps sediment from the upper watershed

Effectiveness:

- The elimination of significant contaminant sources will led to decreasing levels of contamination in canyon sediment and water over time
- Current surface and groundwater monitoring shows that contaminant levels are very low throughout the watershed
- Risk assessments using conservative assumptions indicate there is no human health risk associated with canyon sediment and water



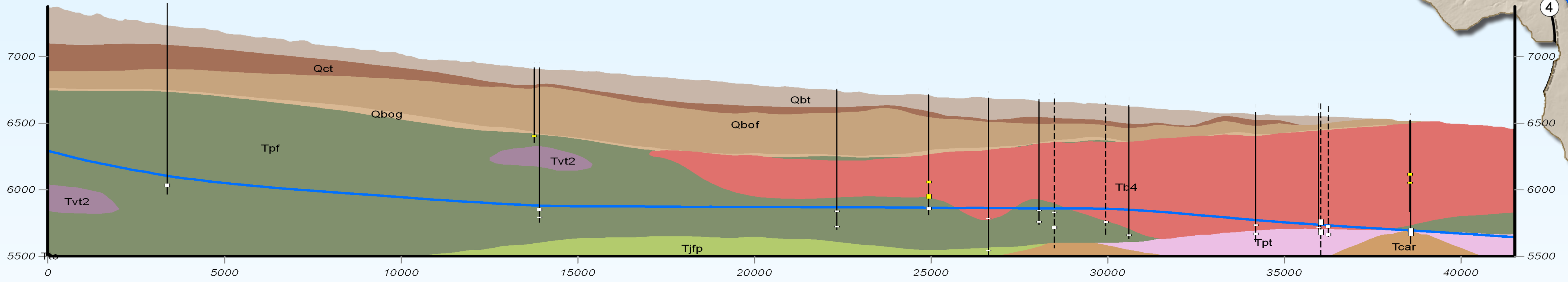


Contaminant Transport:

- Stormwater runoff
- Transport of dissolved constituents in surface and alluvial water
- Infiltration of surface and alluvial water beneath the canyon floor

Regional Well Installation

Area G looking northwest. Pajarito Canyon on the left.



Los Alamos NATIONAL LABORATORY EST.1943

Los Alamos National Laboratory is operated for the Department of Energy's National Nuclear Security Administration by Los Alamos National Security, LLC, a team of Bechtel National, the University of California, BWX Technologies, and Washington Group International.

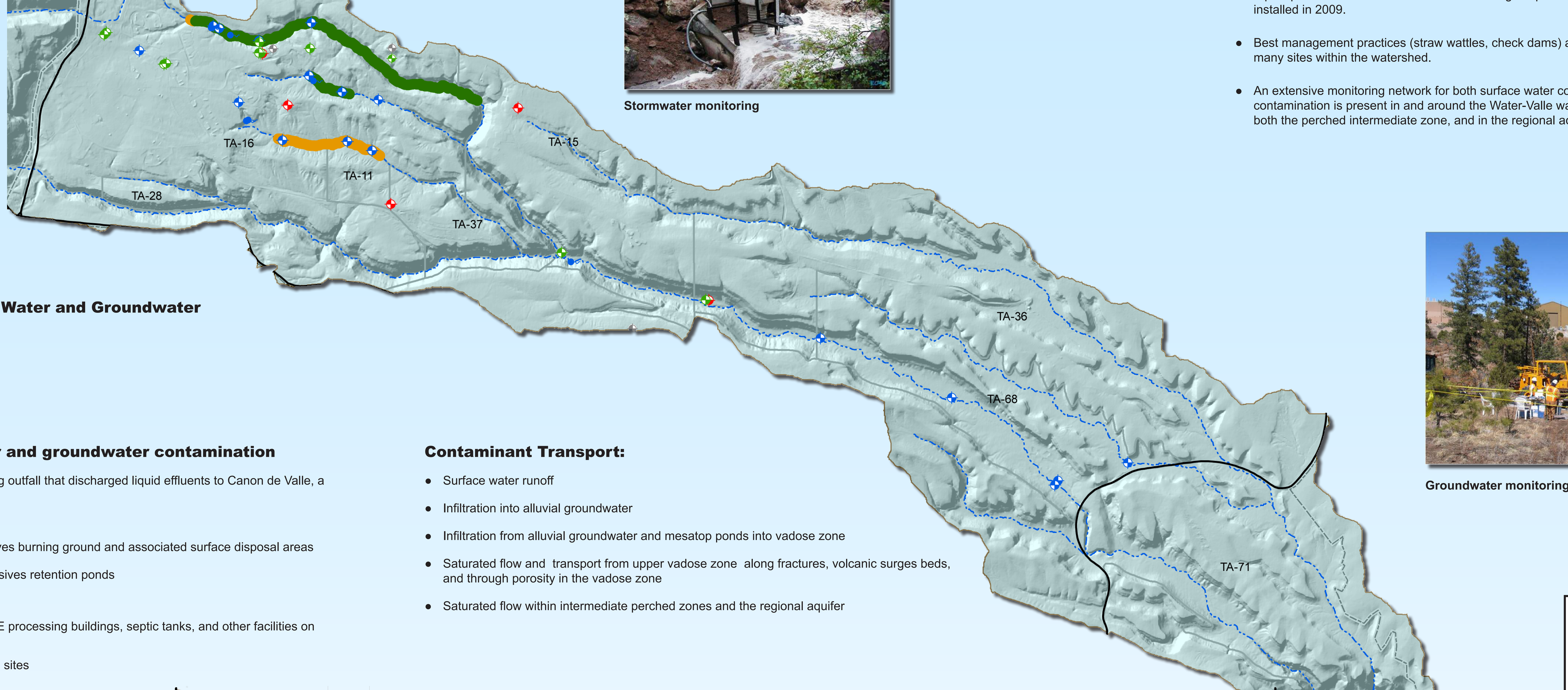
For more information, visit http://www.lanl.gov/environment/h2o/

Water/Potrillo/Cañon de Valle/Fence/Indio Watershed

Stormwater monitoring

Controls/Mitigations/Monitoring

- Most of the major sources of high explosives and barium contamination were cleaned up in the early 2000s. This included interim cleanups at the TA-16-260 high explosive outfall, the MDA-P burning ground disposal area, and the MDA-R burning ground disposal area. Additional cleanups were performed at the World War II era machining building ponds and the high explosives formulation building outfall in the late 2000s.
- A pilot permeable reactive barrier to remove high explosives from alluvial groundwater was installed in 2009.
- Best management practices (straw wattles, check dams) are installed downgradient from many sites within the watershed.
- An extensive monitoring network for both surface water contamination and groundwater contamination is present in and around the Water-Valle watershed. This included wells in both the perched intermediate zone, and in the regional aquifer.



Groundwater monitoring well

History of the Watershed

- High explosives processing and firing starting in 1944
- Primary operations on mesa tops
  - High explosives formulation, casting, pressing, and machining
  - High explosives burning (waste disposal)
  - Wastewater treatment
  - Firing site operations
  - Subsurface device testing

Contaminants in Surface Water and Groundwater

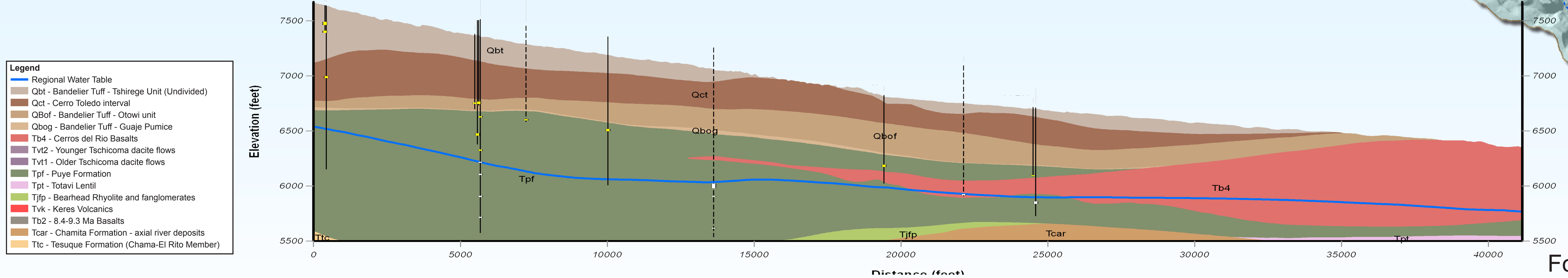
- High explosives (particularly RDX)
- Barium and boron
- Chlorinated solvents

Sources of surface-water and groundwater contamination

- Historical high explosives machining outfall that discharged liquid effluents to Canon de Valle, a tributary to Water Canyon
  - Outfall eliminated in 1996
- Runoff/infiltration from high explosives burning ground and associated surface disposal areas
- Infiltration from mesatop high explosives retention ponds
- Other sources may include
  - Numerous small outfalls from HE processing buildings, septic tanks, and other facilities on mesa edges
  - Runoff from high explosive firing sites

Contaminant Transport:

- Surface water runoff
- Infiltration into alluvial groundwater
- Infiltration from alluvial groundwater and mesatop ponds into vadose zone
- Saturated flow and transport from upper vadose zone along fractures, volcanic surges beds, and through porosity in the vadose zone
- Saturated flow within intermediate perched zones and the regional aquifer



Los Alamos
NATIONAL LABORATORY
EST.1943

Los Alamos National Laboratory is operated for the Department of Energy's National Nuclear Security Administration by Los Alamos National Security, LLC, a team of Bechtel National, the University of California, BWX Technologies, and Washington Group International.

For more information, visit http://www.lanl.gov/environment/h2o/

Sampling Results for Regional Aquifer and Intermediate Groundwater

Analytes tested for

Dioxin, Furan
- Heptachlorodibenzodioxin[1,2,3,4,6,7,8-]
- Heptachlorodibenzodioxins (Total)
- Heptachlorodibenzofuran[1,2,3,4,6,7,8-]
- Heptachlorodibenzofuran[1,2,3,4,7,8,9-]
- Heptachlorodibenzofurans (Total)
- Hexachlorodibenzodioxin[1,2,3,4,7,8-]
- Hexachlorodibenzodioxin[1,2,3,6,7,8-]
- Hexachlorodibenzodioxin[1,2,3,7,8,9-]
- Hexachlorodibenzodioxins (Total)
- Hexachlorodibenzofuran[1,2,3,4,7,8-]
- Hexachlorodibenzofuran[1,2,3,6,7,8-]
- Hexachlorodibenzofuran[1,2,3,7,8,9-]
- Hexachlorodibenzofuran[2,3,4,6,7,8-]
- Hexachlorodibenzofurans (Total)
- Octachlorodibenzodioxin[1,2,3,4,6,7,8,9-]
- Octachlorodibenzofuran[1,2,3,4,6,7,8,9-]
- Pentachlorodibenzodioxin[1,2,3,7,8-]
- Pentachlorodibenzodioxins (Total)
- Pentachlorodibenzofuran[1,2,3,7,8-]
- Pentachlorodibenzofuran[2,3,4,7,8-]
- Pentachlorodibenzofurans (Totals)
- Tetrachlorodibenzodioxin[2,3,7,8-]
- Tetrachlorodibenzodioxins (Total)
- Tetrachlorodibenzofuran[2,3,7,8-]
- Tetrachlorodibenzofurans (Totals)

Diesel Range Organic
- Total Petroleum Hydrocarbons Diesel Range Organics

General Inorganic
- Alkalinity-CO3
- Alkalinity-CO3+HCO3
- Ammonia as Nitrogen
- Bromide
- Calcium
- Chloride
- Cyanide (Total)
- Fluoride
- Hardness
- Magnesium
- Nitrate-Nitrite as Nitrogen
- Oxalate
- Perchlorate
- pH
- Potassium
- Sodium
- Sulfate
- Suspended Sediment Concentration
- Total Dissolved Solids
- Total Kjeldahl Nitrogen
- Total Organic Carbon
- Total Phosphate as Phosphorus
- Total Suspended Solids

Gasoline Range Organic

Total Petroleum Hydrocarbons Gasoline Range

Herbicide
- D[2,4-]
- Dalapon
- DB[2,4-]
- Dicamba
- Dichlorprop
- Dinoseb
- MCPA
- MCPP
- T[2,4,5-]
- TP[2,4,5-]

High Explosives
- 2,4-Diamino-6-nitrotoluene
- 2,6-Diamino-4-nitrotoluene
- 3,5-Dinitroaniline
- Amino-2,6-dinitrotoluene[4-]
- Amino-4,6-dinitrotoluene[2-]
- Dinitrobenzene[1,3-]
- Dinitrotoluene[2,4-]
- Dinitrotoluene[2,6-]
- HMX
- Nitrobenzene
- Nitrotoluene[2-]
- Nitrotoluene[3-]
- Nitrotoluene[4-]
- PETN
- RDX
- TATB
- Tetryl
- Trinitrobenzene[1,3,5-]
- Trinitrotoluene[2,4,6-]
- Tris (o-cresyl) phosphate

Metals
- Aluminum
- Antimony
- Arsenic
- Barium
- Beryllium
- Boron
- Cadmium
- Chromium
- Cobalt
- Copper
- Iron
- Lead
- Manganese
- Mercury
- Molybdenum
- Nickel
- Selenium
- Silicon Dioxide
- Silver
- Strontium
- Thallium
- Tin
- Uranium
- Vanadium
- Zinc

PCBs
- Aroclor-1016
- Aroclor-1221
- Aroclor-1232
- Aroclor-1242
- Aroclor-1248
- Aroclor-1254
- Aroclor-1260
- Aroclor-1262

PCB Congener
- PCB-1
- PCB-10
- PCB-103
- PCB-104
- PCB-105
- PCB-106
- PCB-107
- PCB-108/PCB-124
- PCB-11
- PCB-110/PCB-115
- PCB-111
- PCB-112
- PCB-114
- PCB-118
- PCB-12/PCB-13
- PCB-120
- PCB-121
- PCB-122
- PCB-123
- PCB-126
- PCB-127
- PCB-128/PCB-166
- PCB-129/PCB-138/PCB-163
- PCB-130
- PCB-131
- PCB-132
- PCB-133
- PCB-134
- PCB-135/PCB-151
- PCB-136
- PCB-137
- PCB-139/PCB-140
- PCB-14
- PCB-141
- PCB-142
- PCB-143
- PCB-144
- PCB-145
- PCB-146
- PCB-147/PCB-149
- PCB-148
- PCB-15
- PCB-150
- PCB-152
- PCB-153/PCB-168
- PCB-154
- PCB-155
- PCB-156/PCB-157
- PCB-158
- PCB-159
- PCB-16
- PCB-160
- PCB-161
- PCB-162
- PCB-164
- PCB-165
- PCB-167
- PCB-169
- PCB-17
- PCB-170
- PCB-171/PCB-173
- PCB-172
- PCB-174
- PCB-175
- PCB-176
- PCB-177
- PCB-178
- PCB-179
- PCB-18/PCB-30
- PCB-180/PCB-193
- PCB-181
- PCB-182
- PCB-183/PCB-185
- PCB-184
- PCB-186
- PCB-187
- PCB-188
- PCB-189
- PCB-19
- PCB-190
- PCB-191
- PCB-192
- PCB-194
- PCB-195
- PCB-196
- PCB-197/PCB-200
- PCB-198/PCB-199
- PCB-2
- PCB-20/PCB-28
- PCB-201
- PCB-202
- PCB-203
- PCB-204
- PCB-205
- PCB-206
- PCB-207
- PCB-208
- PCB-209
- PCB-21/PCB-33
- PCB-22
- PCB-23
- PCB-24
- PCB-25
- PCB-26/PCB-29
- PCB-27
- PCB-3
- PCB-31
- PCB-32
- PCB-34
- PCB-35
- PCB-36
- PCB-37
- PCB-38
- PCB-39
- PCB-4
- PCB-40/PCB-71
- PCB-41
- PCB-42
- PCB-43
- PCB-44/PCB-47/PCB-65
- PCB-45/PCB-51
- PCB-46
- PCB-48
- PCB-49/PCB-69
- PCB-5
- PCB-50/PCB-53
- PCB-52
- PCB-54
- PCB-55
- PCB-56
- PCB-57
- PCB-58
- PCB-59/PCB-62/PCB-75
- PCB-6
- PCB-60
- PCB-61/PCB-70/PCB-74/PCB-76
- PCB-63
- PCB-64
- PCB-66
- PCB-67
- PCB-68
- PCB-7
- PCB-72
- PCB-73
- PCB-77
- PCB-78
- PCB-79
- PCB-8
- PCB-80
- PCB-81
- PCB-82
- PCB-83
- PCB-84
- PCB-85/PCB-116/PCB-117
- PCB-86/87/97/109/119/125
- PCB-88/91
- PCB-89
- PCB-9
- PCB-90/PCB-101/PCB-113
- PCB-92
- PCB-93/PCB-100
- PCB-94
- PCB-95
- PCB-96
- PCB-98/PCB-102
- PCB-99
- Total decaCB
- Total diCB
- Total heptaCB
- Total hexaCB
- Total monoCB
- Total nonaCB
- Total octaCB
- Total PCB
- Total pentaCB
- Total tetraCB
- Total triCB

Pesticides
- Aldrin
- BHC[alpha-]
- BHC[beta-]
- BHC[delta-]
- BHC[gamma-]
- Chlordane[alpha-]
- Chlordane[gamma-]
- DDD[4,4'-]
- DDE[4,4'-]
- DDT[4,4'-]
- Dieldrin
- Endosulfan I
- Endosulfan Sulfate
- Endrin
- Endrin Aldehyde
- Endrin Ketone
- Heptachlor
- Heptachlor Epoxide
- Methoxychlor[4,4'-]
- Toxaphene (Technical Grade)

Semivolatile Organic Analysis (SVOA)
- Acenaphthene
- Acenaphthylene
- Aniline
- Anthracene
- Atrazine
- Azobenzene
- Benzidine
- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Benzo(g,h,i)perylene
- Benzo(k)fluoranthene
- Benzoic Acid
- Benzyl Alcohol
- Bis(2-chloroethoxy)methane
- Bis(2-chloroethyl)ether
- Bis(2-ethylhexyl)phthalate
- Bromophenyl-phenylether[4-]
- Butylbenzylphthalate
- Chloro-3-methylphenol[4-]
- Chloroaniline[4-]
- Chloronaphthalene[2-]
- Chlorophenol[2-]
- Chlorophenyl-phenyl[4-] Ether
- Chrysene
- Dibenz(a,h)anthracene
- Dibenzofuran
- Dichlorobenzene[1,2-]
- Dichlorobenzene[1,3-]
- Dichlorobenzene[1,4-]
- Dichlorobenzidine[3,3'-]
- Dichlorophenol[2,4-]
- Diethylphthalate
- Dimethyl Phthalate
- Dimethylphenol[2,4-]
- Di-n-butylphthalate
- Dinitro-2-methylphenol[4,6-]
- Dinitrophenol[2,4-]
- Dinitrotoluene[2,4-]
- Dinitrotoluene[2,6-]
- Di-n-octylphthalate
- Dinoseb
- Dioxane[1,4-]
- Diphenylamine
- Fluoranthene
- Fluorene
- Hexachlorobenzene
- Hexachlorobutadiene
- Hexachlorocyclopentadiene
- Hexachloroethane
- Indeno(1,2,3-cd)pyrene
- Isophorone
- Methylnaphthalene[1-]
- Methylnaphthalene[2-]
- Methylphenol[2-]
- Methylphenol[4-]
- Naphthalene
- Nitroaniline[2-]
- Nitroaniline[3-]
- Nitroaniline[4-]
- Nitrobenzene
- Nitrophenol[2-]
- Nitrophenol[4-]
- Nitrosodiethylamine[N-]
- Nitrosodimethylamine[N-]
- Nitroso-di-n-butylamine[N-]
- Nitroso-di-n-propylamine[N-]
- Nitrosopyrrolidine[N-]
- Oxybis(1-chloropropane)[2,2'-]
- Pentachlorobenzene
- Pentachlorophenol
- Phenanthrene
- Phenol
- Pyrene
- Pyridine
- Tetrachlorobenzene[1,2,4,5]
- Tetrachlorophenol[2,3,4,6-]
- Trichlorobenzene[1,2,4-]
- Trichlorophenol[2,4,5-]
- Trichlorophenol[2,4,6-]

Volatile Organic Analysis
- Acetone
- Acetonitrile
- Acrolein
- Acrylonitrile
- Benzene
- Bromobenzene
- Bromochloromethane
- Bromodichloromethane
- Bromoform
- Bromomethane
- Butanol[1-]
- Butanone[2-]
- Butylbenzene[n-]
- Butylbenzene[sec-]
- Butylbenzene[tert-]
- Carbon Disulfide
- Carbon Tetrachloride
- Chloro-1,3-butadiene[2-]
- Chloro-1-propene[3-]
- Chlorobenzene
- Chlorodibromomethane
- Chloroethane
- Chloroform
- Chloromethane
- Chlorotoluene[2-]
- Chlorotoluene[4-]
- Dibromo-3-Chloropropane[1,2-]
- Dibromoethane[1,2-]
- Dibromomethane
- Dichlorobenzene[1,2-]
- Dichlorobenzene[1,3-]
- Dichlorobenzene[1,4-]
- Dichlorodifluoromethane
- Dichloroethane[1,1-]
- Dichloroethane[1,2-]
- Dichloroethene[1,1-]
- Dichloroethene[cis-1,2-]
- Dichloroethene[trans-1,2-]
- Dichloropropane[1,2-]
- Dichloropropane[1,3-]
- Dichloropropane[2,2-]
- Dichloropropene[1,1-]
- Dichloropropene[cis-1,3-]
- Dichloropropene[trans-1,3-]
- Diethyl Ether
- Ethyl Methacrylate
- Ethylbenzene
- Hexachlorobutadiene
- Hexanone[2-]
- Iodomethane
- Isobutyl alcohol
- Isopropylbenzene
- Isopropyltoluene[4-]
- Methacrylonitrile
- Methyl Methacrylate
- Methyl tert-Butyl Ether
- Methyl-2-pentanone[4-]
- Methylene Chloride
- Naphthalene
- Propionitrile
- Propylbenzene[1-]
- Styrene
- Tetrachloroethane[1,1,1,2-]
- Tetrachloroethane[1,1,2,2-]
- Tetrachloroethene
- Toluene
- Trichloro-1,2,2-trifluoroethane[1,1,2-]
- Trichlorobenzene[1,2,3-]
- Trichlorobenzene[1,2,4-]
- Trichloroethane[1,1,1-]
- Trichloroethane[1,1,2-]
- Trichloroethene
- Trichlorofluoromethane
- Trichloropropane[1,2,3-]
- Trimethylbenzene[1,2,4-]
- Trimethylbenzene[1,3,5-]
- Vinyl acetate
- Vinyl Chloride
- Xylene[1,2-]
- Xylene[1,3-]+Xylene[1,4-]

Analytes above a screening level

General Inorganic Chemistry
- Chloride
- Perchlorate
- Cyanide (total)
- Nitrate + Nitrite
- Total Dissolved Solids

High Explosives
- RDX

Metals
- Aluminum
- Arsenic
- Boron
- Barium
- Cadmium
- Chromium (dissolved)
- Chromium (total)
- Iron
- Manganese
- Nickel
- Lead (total)
- Antimony

Radioactivity
- Americium-241
- Gross Beta
- Plutonium-238
- Plutonium-239/240
- Radium-228
- Strontium-90
- Uranium

Pesticides/PCBs
- Toxaphene (Technical Grade)

Semivolatile Organic Compounds
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Bis(2-ethylhexyl)phthalate
- Dibenz(a,h)anthracene
- Indeno(1,2,3-cd)pyrene

Analytes above a regulatory level

General Inorganic Chemistry
- Chloride

High Explosives
- RDX