



New Mexico Environment Department
Surface Water Quality Bureau



Water Quality Survey
Sacramento Mountains Survey 2023-2024



Grindstone Reservoir September 18, 2024

Prepared by
Surface Water Quality Bureau
New Mexico Environment Department

January 2025



Water quality surveys and assessments conducted by the New Mexico Environment Department (NMED) Surface Water Quality Bureau (SWQB) are completed to fulfill Section 106 of the Clean Water Act [33 USC 1251 et seq.], Work Program for Water Quality Management. This project was funded, in part, by a grant from the U.S. Environmental Protection Agency.

The work conducted by NMED SWQB in the 2023-2024 Sacramento Mountain Watershed Survey is shown in the tables detailed in this Report. The completion percentage for each water chemistry parameter is detailed in Table 1. A summary of long-term deployment, physical habitat sampling and biological data are detailed in Table 2. The fires in 2024 influenced the number of long-term deployments conducts as well as physical habitat data collection.

All data were collected in accordance with procedures documented in the SWQB QAPP (NMED/SWQB 2021) and the applicable SWQB Standard Operating Procedures for Data Collection available at <https://www.env.nm.gov/surface-water-quality/protocols-and-planning/>. Water quality samples were submitted to the State Laboratory, contact laboratory or were processed in the SWQB Sample Management Facility in accordance with procedures as outlined in the NMED SWQB SOPs. More information about the survey can be found in the Sacramento Mountains 2023-2024 Field Sampling Plan or by contacting Miguel Montoya at miguel.montoya@env.nm.gov or 505-819-9882. Data will be available for download at EPA's [Water Quality Data Portal](#) by August 1st, 2025.

Table 1. Chemistry Sampling Details

MAP #	Station Name	Priority	TDS / TSS		Nutrients (Low P)		TOTAL METALS		Dissolved Metals		E Coli		8260 Volatile Organics		8270 Semi-volatile Organics		Radionuclides		comments
	Planned/ Competed		P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	
1	Agua Chiquita abv Rio Penasco - 59AguaCh001.1	2	4	0	4	0	4	0	4	0	4	0	2	0	2	0	2	0	Site Dry for Duration of survey
2	Agua Chiquita abv Sacramento - 59AguaCh035.2	1	4	4	4	4	4	4	4	4	4	4							
3	ALTO LAKE - 57AltoLake	l	4	4	4	4	4	4	4	4	4	4	2	2	2	2	2	2	
4	Alto Lake Inlet - 57EagleC030.1	lo	4	2	4	2	4	2	4	2	4	2							
5	CARRIZO CREEK ABOVE THE RIO RUIDOSO - 57Carriz000.1	1	4	4	4	6	4	4	4	4	4	4							
6	Carrizo Creek at Mescalero Boundary - 57Carriz003.0	2	4	4	4	5	4	4	4	4	4	4							
9	Dog Canyon at Nature Trail - 48DogCan002.7	2	4	4	4	5	4	4	4	4	4	4							
10	Eagle Creek abv Alto Lake - 57EagleC031.1	1	4	4	4	4	4	4	4	4	4	4							
11	Eagle Creek below Alto Lake - 57EagleC030.0	2/lo	4	5	4	5	4	5	4	5	4	5							
12	Fresnal Creek above Salado Canyon - 48FresCa008.3	2	4	4	4	5	4	4	4	4	4	4							
13	FRESNAL CREEK AT ALAMOGORDO WATER INTAKE - 48FresCa001.0	1	4	4	4	4	4	4	4	4	4	4							
14	Grindstone Canyon above Grindstone Reservoir - 57Grinds002.0	2/lo	4	0	4	0	4	0	4	0	4	0							Site Dry for Duration of survey
15	GRINDSTONE CANYON RESERVOIR DEEP - 57GrindCanRes	l	4	4	4	4	4	4	4	4	4	4	2	2	2	2	2	2	
16	Grindstone Canyon Reservoir outfall - 57Grinds001.6	2/lo	4	4	4	4	4	4	4	4	4	4							
17	Grindstone Caynon Reservoir Inlet - 57GrindInlet	lo	4	4	4	4	4	4	4	4	4	4							
18	Karr Canyon above Raven Road - 48KarrCa002.9	2	4	4	4	4	4	4	4	4	4	4							
19	LA LUZ CREEK AT CR A-70 - 48LaLuzC014.2	2	4	4	4	4	4	4	4	4	4	3							
20	Lake Holloman Deep	l										2							2 PFAS samples planned and collected
21	N Fk Eagle Creek at FSR 127 - 57NEagle000.2	2	4	4	4	4	4	4	4	4	4	4							
22	N Fk Rio Ruidoso abv ski lodge - 57NRuido009.4	2	4	4	4	4	4	4	4	4	4	4							
23	NOGAL CREEK AT COUNTY ROAD B-17 - 48NogalC000.2	1	4	4	4	5	4	4	4	4	4	4							
24	RIO BONITO ABV HWY 70 BRIDGE - 57RBonit001.0	1	4	5	4	7	4	5	4	5	4	5	2	2	2	2	2	2	
25	Rio Bonito at BLM Apple Orchard Site - 57RBonit027.7	2	4	4	4	7	4	4	4	4	4	4							
26	RIO BONITO AT FR 107 - 57RBonit061.1	1	4	4	4	5	4	4	4	4	4	4							

MAP #	Station Name	Priority	TDS / TSS		Nutrients (Low P)		TOTAL METALS		Dissolved Metals		E Coli		8260 Volatile Organics		8270 Semi-volatile Organics		Radionuclides		comments
27	RIO BONITO AT HWY 48 BRIDGE-USGS Gage 0838850 - 57RBonit053.4	1	4	4	4	7	4	4	4	4	4	4							
28	Rio Felix at Special Area on Flying H Ranch - 58RFelix114.1	2	4	0	4	0	4	0	4	0	4	0							Site Dry for Duration of survey
NA	Rio Hondo at County Road E028 - 57RHondo118.3	2	4	4	4	5	4	4	4	4	4	4							Added mid-survey due to access
29	Rio Hondo below Riverside on Rio Hondo Land and Cattle property - 57RHondo105.8	2	4	1	4	1	4	1	4	1	4	1							
30	RIO PENASCO AT BLUFF SPRINGS - 59RPenas170.4	2	4	4	4	6	4	4	4	4	4	4							
31	Rio Penasco at Helena Road blw USGS Gage 08397620 - 59RPenas090.0	2	4	0	4	0	4	0	4	0	4	0	2	0	2	0	2	0	Site Dry for Duration of survey
32	Rio Penasco at NM 24-USGS Gage 08397600 - 59RPenas108.4	1	4	4	4	5	4	4	4	4	4	4							
33	Rio Ruidoso @ CR E002 - 57RRuido030.5	1	4	4	4	6	4	4	4	4	4	4							3 MST samples planned and collected
34	RIO RUIDOSO ABOVE CARRIZO CREEK - 57RRuido045.3	1	4	4	4	6	4	4	4	4	4	4							
35	Rio Ruidoso abv Hwy 70 bridge - 57RRuido031.5	1	4	4	4	6	4	4	4	4	4	4							
36	Rio Ruidoso at CR 16 Bridge near Hondo - 57RRuido001.3	2	4	4	4	5	4	4	4	4	4	4	2	2	2	2	2	2	
37	RIO RUIDOSO AT GLENCOE-FR 443 - 57RRuido019.8	1	4	4	4	5	4	4	4	4	4	4							
38	Rio Ruidoso at Mescalero boundary at USGS Gage 08386505 - 57RRuido052.4	1	4	4	4	6	4	4	4	4	4	4							3 MST samples planned and collected
40	Rio Ruidoso blw Ruidoso Downs Racetrack @ Joe Welch Dr - 57RRuido039.4	1	4	4	4	6	4	4	4	4	4	4							
41	RUIDOSO NEW WWTP OUTFALL PIPE - NM0029165	2	2	2	2	2	2	0	2		2	2							
42	S Fk Rio Bonito abv Blue Hole Pond - 57SRBonit000.3	1	4	4	4	4	4	4	4	4	4	4							
44	SACRAMENTO RIVER AT USGS GAGE - 49Sacram014.6	1	4	5	4	6	4	5	4	5	4	5							
45	SACRAMENTO RIVER BELOW SCOTT ABLE CANYON - 49Sacram013.7	2	4	4	4	5	4	4	4	4	4	4							
46	Salado Canyon at Salado Canyon Trestle - 48Salad0001.1	2	4	5	4	6	4	5	4	5	4	5							
47	SCOTT ABLE CREEK ABOVE SACRAMENTO RIVER - 49ScottA000.1	2	4	0	4	0	4	0	4	0	4	0							Site Dry for Duration of survey
48	South Fork Eagle Creek abv Eagle Creek- 57SEagle000.1	2	4	4	4	4	4	4	4	4	4	4							

MAP #	Station Name	Priority	TDS / TSS		Nutrients (Low P)		TOTAL METALS		Dissolved Metals		E Coli		8260 Volatile Organics		8270 Semi-volatile Organics		Radionuclides		comments
49	THREE RIVERS AT FOREST SERVICE CAMPGROUND - 48ThreeR022.8	2	4	5	4	5	4	5	4	5	4	5							
50	THREE RIVERS AT U.S. HWY 54 - 48ThreeR001.0	2	4	0	4	0	4	0	4	0	4	0							Site Dry for Duration of survey
51	Tularosa Creek ABV USGS GAGE 08481500 NR BENT- 48RTular030.0	1	4	4	4	6	4	4	4	4	4	4							
52	Tularosa Creek at Hwy 54 – 48Tular014.9	2	4	0	4	0	4	0	4	0	4	0							Site Dry for Duration of survey
	Sample totals		190	162	190	198	190	160	190	160	190	163	12	8	12	8	12	8	

"P" = Planned,
"C" = Conducted

	TDS / TSS		Nutrients (Low P)		TOTAL METALS		Dissolved Metals		E Coli		8260 Volatile Organics		8270 Semi-volatile Organics		Radionuclides		PFAS EPA Method 533 and 537.1		Microbial Source Tracking	
Planned/ Competed	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C
Sample totals	190	162	190	198	190	160	190	160	190	163	12	8	12	8	12	8	4	4	6	6
Percent Completed	85%		104%		84%		84%		86%		67%		67%		67%		100%		100%	

Table 2. Long-term Deployments, physical habitat and Biological Data

Map #	Station Name	Sonde/DO/Cond ^{2,3}		Thermograph		Flow ⁴		Physical Habitat		Chlorophyll a ⁵		Phytoplankton		Comments
	Planned / Completed	P	C	P	C	P	C	P	C	P	C	P	C	
1	Agua Chiquita abv Rio Penasco - 59AguaCh001.1		1		1	4	4							
2	Agua Chiquita abv Sacramento - 59AguaCh035.2	S	1	1	1	4	6	1	1					
3	ALTO LAKE - 57AltoLake									4	4	4	4	Lab unable to complete microcystins analysis
4	Alto Lake Inlet - 57EagleC030.1						4							
5	CARRIZO CREEK ABOVE THE RIO RUIDOSO - 57Carriz000.1	S	0	1	0	4	6	1	1					Thermograph lost due to fire
6	Carrizo Creek at Mescalero Boundary - 57Carriz003.0	D	0			4	5							
9	Dog Canyon at Nature Trail - 48DogCan002.7	D	1	1	2	4	5	1	0					Unable to complete phys hab due to reach going dry
10	Eagle Creek abv Alto Lake - 57EagleC031.1	D	0	1	0	4	7	1	1					Thermograph lost due to fire
11	Eagle Creek below Alto Lake - 57EagleC030.0?	D	0	1	0	4	5	1	0					Thermograph lost due to fire
12	Fresnal Creek above Salado Canyon - 48FresCa008.3	D	1	1	0	4	5	1	0					
13	FRESNAL CREEK AT ALAMOGORDO WATER INTAKE	D	0	1	2	4	7	1	1					
14	Grindstone Canyon above Grindstone Reservoir -					4	4							
15	GRINDSTONE CANYON RESERVOIR DEEP -									4	4	4	4	Lab unable to complete microcystins analysis
16	Grindstone Canyon Reservoir outfall - 57Grinds001.6					4	4							
17	Grindstone Caynon Reservoir Inlet - 57GrindOutlet					4	4							
18	Karr Canyon above Raven Road - 48KarrCa002.9	D	1	1	1	4	4	1	0					Unable to complete Phys hab due to stream reach
19	LA LUZ CREEK AT CR A-70 - 48LaLuzC014.2	D	0	1	0	4	6	1	0					Unable to complete Phys hab due to stream reach

20	Lake Holloman Deep															Lab unable to complete microcystins analysis
21	N Fk Eagle Creek at FSR 127 - 57NEagle000.2	D	0	1	2	4	4	1	0							
22	N Fk Rio Ruidoso abv ski lodge - 57NRuido009.4	D	0	1	0	4	4	1	1							No access due to fire closures
23	NOGAL CREEK AT COUNTY ROAD B-17 - 48NogalC000.2	D	0	1	0	4	5	1	0							No access- Private Property
24	RIO BONITO ABV HWY 70 BRIDGE - 57RBonit001.0	S	1	1	1	4	9	1	1							
25	Rio Bonito at BLM Apple Orchard Site - 57RBonit027.7		1			4	7									
26	RIO BONITO AT FR 107 - 57RBonit061.1	D	0	1	0	4	6	1	1							Thermograph lost due to fire
27	RIO BONITO AT HWY 48 BRIDGE-USGS Gage 0838850 -	D	2	1	1	4	7									
28	Rio Felix at Special Area on Flying H Ranch - 58RFelix114.1	D		1		4		1								Site Dry for the Duration of Survey
NA	Rio Hondo at County Road E028 - 57RHondo118.3						5									
29	Rio Hondo below Riverside on Rio Hondo Land and Cattle	S	0	1	0	4	1	1	0							
30	RIO PENASCO AT BLUFF SPRINGS - 59RPenas170.4	D	1	1	0	4	6	1	1							Thermograph stolen
31	Rio Penasco at Helena Road blw USGS Gage 08397620 -	D	0	1	0	4	0	1	0							Site Dry for the Duration of Survey
32	Rio Penasco at NM 24-USGS Gage 08397600 -	S	1	1	1	4	5	1	1							
34	RIO RUIDOSO ABOVE CARRIZO CREEK -	S	0	1	1	4	6	1	0							
35	Rio Ruidoso abv Hwy 70 bridge - 57RRuido031.5	S	0	1	1	4	6	1	0							
36	Rio Ruidoso at CR 16 Bridge near Hondo - 57RRuido001.3	S	0	1	0	4	5	1	1							Thermograph lost due to fire
37	RIO RUIDOSO AT GLENCOE-FR 443 - 57RRuido019.8	S	0	1	0	4	5	1	0							Thermograph lost due to fire
38	Rio Ruidoso at Mescalero boundary at USGS Gage					4	6									
39	Rio Ruidoso blw new WWTP, mile-marker 267.5, Hwy 70 -					4	6									
40	Rio Ruidoso blw Ruidoso Downs Racetrack @ Joe Welch					4	6									
41	RUIDOSO NEW WWTP OUTFALL PIPE - NM0029165	D		1		4	0									

42	S Fk Rio Bonito abv Blue Hole Pond - 57SRBonit000.3	D	0	1	0	4	5	1	0					
44	SACRAMENTO RIVER AT USGS GAGE - 49Sacram014.6	D	1	1	0	4	6	1	0					
45	SACRAMENTO RIVER BELOW SCOTT ABLE CANYON -	D	0	1	0	4	5	1	1					
46	Salado Canyon at Salado Canyon Trestle -	D	0	1	1	4	6	1	1					Data not saved Properly
47	SCOTT ABLE CREEK ABOVE SACRAMENTO RIVER -	D	0	1	0	4	4	1	0					Site Dry for the Duration of Survey
48	South Fork Eagle Creek abv Eagle Creek- 57SEagle000.1	D	0	1	0	4	4	1	0					Thermograph lost due to fire
49	THREE RIVERS AT FOREST SERVICE CAMPGROUND -	D	1	1	1	4	5	1	1					
50	THREE RIVERS AT U.S. HWY 54 - 48ThreeR001.0					4	4							Site Dry for the Duration of Survey
51	Tularosa Creek ABV USGS GAGE 08481500 NR BENT-	D	1	1	2	4	6	1	1					
52	Tularosa Creek at Hwy 54 - 48Tular014.9					4	5							Site Dry for the Duration of Survey
	Total Number of Sampling Events	34	14	33	18	188	225	31	14	8	8	8	8	



Long-term Deployments

Multi-Parameter Loggers – Dissolved Oxygen

- 34 Planned
- 14 Completed
- No Sondes/DO loggers were deployed in 2024 due to fire/flooding/closures

Thermographs

- 33 Planned
- 18 Completed
- 7 lost due to fire/ flooding in 2024

Biological Data 2023-2024

Completed/ Planned	Chlorophyll a		Phytoplankton		Macroinverts		Microsystins		Zooplankton	
	P	C	P	C	P	C	P	C	P	C
Totals	8	8	8	8	3	3	8	0	0	2
% Completed	100%		100%		100%		0%		200%	

"P" = Planned

"C" = Conducted