

THE 14TH ANNUAL

# RIO RESEARCH ROUNDUP

A BINATIONAL WATER TESTING PROJECT



OCTOBER 11-18, 2023



*With Special Thanks*

TO OUR  
ROUNDUP 2023 FUNDERS

**GUADALUPE & LILIA MARTINEZ  
FOUNDATION**

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# RIO RESEARCH ROUNDUP

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2023

# RIO RESEARCH ROUNDUP

## Greetings Roundup participants!

Welcome to the 14th annual award-winning Rio Research Roundup! It serves to promote environmental awareness in the Rio Grande/Rio Bravo watershed and smaller Texas Basins in an atmosphere of friendly competition.

To finish off this year's event, we will host our 3rd Annual RRR Binational Summit and hope that you will join us virtually via Zoom again in December. The Summit will highlight the exceptional work that students submit to us and connect participating Roundup schools – just like yours, from Colorado to Mexico and the Gulf Coast!

You are now part of a select cluster of campuses from the U.S. and Mexico that are brought together every fall to test the water quality of multiple basins. Each year, RGISC provides 70 to 90 teams with water testing kits and in October, students go on a field trip and pull water samples from the Rio Grande or tributary to provide a complete snapshot of the river's health at one moment in time. Students test for 8 to 9 water quality parameters such as: coliform bacteria, nitrates, phosphates, pH, and dissolved oxygen. They also measure stream flow and submit short videos and artwork.

Because of the Roundup's cross border work, in 2018, the U.S. EPA named RGISC a Gulf Guardian (Binational category) among all competing nonprofits in the Gulf States and in 2013, RGISC was one of 3 finalists (among 80 nonprofits along the U.S.-Mexico border) at the Mexican Senate in Mexico City.

This field-based, hands-on activity allows students to connect classroom learning with real world experience, and to gain a deeper understanding and appreciation of the river basins that sustain our communities for teachers and students alike.

On behalf of all of us at the Rio Grande International Study Center, we are thankful for your continued interest and commitment to this unique binational student river monitoring project. We love to connect with returning students and teachers, and well as new schools and teams. We thank you for your love of our river, science and enriching the minds of our youth! Good luck! Viva el Rio!

*Ashley Garcia*

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# RIO RESEARCH ROUNDUP

## PROJECT OVERVIEW

We encourage student teams to complete and submit as many of these components as possible, and we recognize that some campuses will not be able to conduct river sampling on-site.

- **Data for 8 water quality parameters (9 for schools along the Gulf Coast and Pecos Basin), plus stream flow.**
- **Original work of visual or literary art**
- **90-second video**
- **Social Media Awareness**
- **Field day photos: featuring student teams completing water-testing, with images of their watershed, and/or surrounding ecosystem**
- **Rio Research Roundup Binational Summit (Tentative Date: Friday, Dec. 8, 2023)**



*Secun. Gen. No.2 Adolfo López Mateos - Matamoros, TAMP*

# RIO RESEARCH ROUNDUP

## TIMELINE

<b>WEEK OF SEPT 18</b>	Water testing kits mailed out to participating teams
<b>SEPT 25 - OCT 6</b>	<ul style="list-style-type: none"> <li>• Schools determine/confirm test site(s) and travel arrangements.</li> <li>• Students familiarize themselves with the kit and perform practice tests, leaving enough materials to run three tests on the day of Roundup.</li> <li>• Teachers can use lesson plans which will be emailed separately.</li> </ul>
<b>OCT 11 - 18</b>	<b>ROUNDUP WEEK!</b> <ul style="list-style-type: none"> <li>• Participating schools initiate water quality testing for 8 parameters, plus stream flow.</li> <li>• 90 second video</li> <li>• Social Media Awareness</li> <li>• Produce original artwork</li> <li>• Take a minimum of 10 Field Day photos.</li> </ul>
<b>OCT 20</b>	Teams obtain and submit results for coliform bacteria.
<b>OCT 24</b>	Teams obtain and submit results for Biological Oxygen Demand
<b>OCT 27</b>	<b>DEADLINE FOR SUBMITTING ALL DATA</b>
<b>NOV 14</b>	<b>DEADLINE FOR SUBMITTING ALL COMPONENTS</b> <ul style="list-style-type: none"> <li>• Deadline to submit 90 second watershed video</li> <li>• Deadline to social media awareness photo</li> <li>• Deadline to submit original artwork</li> <li>• Deadline to submit field photos</li> </ul>
<b>NOV 20 - DEC 4</b>	Judging begins for: <ul style="list-style-type: none"> <li>• 90-second watershed video</li> <li>• Social Media Awareness</li> <li>• Original artwork (literary or visual)</li> </ul>
<b>DEC 8</b>	<b>3rd Virtual Rio Research Roundup Binational Summit!</b>

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## WHERE DO YOU LIVE?

The Rio Grande watershed basin is 335,000 sq. miles. The length of the river itself is approximately 1,990 miles. It rests within 3 U.S. states and 5 Mexican states. It still ranks as one of the 10 Most Endangered Rivers in the world (World Wildlife Fund).



SOURCE: Martin Castro/Rio Grande International Study Center

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# WATER TESTING



2023

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## FOR SUBMISSION OF DATA + STREAM FLOW

1. Type the following link on your address bar: **bit.ly/RRRData2023**
2. Enter your water testing data.
3. Submit the data entry form.

***Deadline to Submit Data is Friday, October 27, 2023***

## FOR SUBMISSION OF COMPONENTS

Submit components through a free online service called WeTransfer.

1. Go to <https://wetransfer.com/>
2. Add your files (up to 2 GB).
3. Type in my email: [ashley@rgisc.org](mailto:ashley@rgisc.org)
4. Type in your email.
5. Click “Transfer.”

Please note: If your submission exceeds 2 GB, you can send your components through several transfers.

\*Alternatively, you can also email document links to your RRR files to [ashley@rgisc.org](mailto:ashley@rgisc.org) through google drive.

***Deadline to Submit Components is Friday, November 14, 2023.***

***If you face any issues, please call or email me at [ashley@rgisc.org](mailto:ashley@rgisc.org) or (956) 774-4760.***

# RIO RESEARCH ROUNDUP

## PARAMETER TESTING

**KIT:** LaMotte: EARTH FORCE Low Cost Water Monitoring Kit

The Kit Includes: A full instructions manual in English & Spanish, and the necessary equipment to test certain water quality parameters.

Factors	# of Tests (included in kit)
pH	10
Dissolved Oxygen	10
Biological Oxygen Demand	10
Nitrate	10
Phosphate	10
Temperature	Unlimited
Turbidity	Unlimited
Coliform Screening	3

For each parameter, teams must take three measurements, and average out a final value with the exception of BOD. Student teams are only required to submit the averaged values for each parameter.

### Reminder

- Coliform Bacteria results will take 48 hours to obtain.
- Biochemical Oxygen Demand (BOD) results will take 5 days to obtain.

### Material NOT Included for Stream Flow

- Flags or markers
- Stopwatch
- Floating object (such as ping pong ball)
- Measuring device (tape or meter stick)



*\*Salinity kits provided for Coastal and Pecos Basin Schools only*

*\*Additional instructions for Stream Flow on Page 11*

# RIO RESEARCH ROUNDUP

## INTERPRETING WATER QUALITY DATA

Water Quality Data	Interpretation	Possible Source
Dissolved oxygen levels below 5 mg/l	Oxygen levels below level required to maintain ecological health of waterway	Organic matter, leaves sewage
Phosphorous level above 0.05 mg/L	Nutrient levels above ANZECC guidelines for protection of ecological health of freshwater ecosystems-danger of algal bloom	Fertilizers Detergents Sewage
Turbidity levels above 10 NTU	Excess sediment is washing into waterway	Construction sites Erosion of soil from cleared land
Biochemical Oxygen Demand above 2 mg/L	Excess organic matter in waterway	Excess leaves and other organic matter Sewage Excess growth of water plants and algae
Fecal coliform levels above 600 colonies/100 mL	Water is unsafe for swimming	Sewage Animal droppings Dairy and feedlot contamination
pH level	pH of river water is measured by how acidic or basic the water is on a scale of 0-14. Optimal pH for a river is around 7.4	Acid Rain Limestone along river banks Agricultural runoff Fossil fuel emissions
Nitrate level at 10 mg/L	Excess level of nitrates in water can create conditions that make it difficult for aquatic insects or fish to survive	Organisms excreting waste Death of aquatic plants and organisms Nitrogen fertilizers
Water smells of oil and grease; oily "rainbow" slick on the surface of the water	Water is being contaminated by oils and greases	Oil dripping from cars onto roads and driveways Oil and grease being tipped into stormwater drain Illegal dumping
Rubbish litter	Rubbish on streets being washed into stormwater system	Uncovered rubbish bins Bad attitudes-people littering

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# RIO RESEARCH ROUNDUP

## Data Collection Sheet

School Name: \_\_\_\_\_

Team Name: \_\_\_\_\_

Date Collected: \_\_\_\_\_ Time Collected (24-hour clock): \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Teacher's Name: \_\_\_\_\_

Teacher's Email: \_\_\_\_\_

# of Participants: \_\_\_\_\_

Latitude of Collection Site (GPS or Degree/m/s): \_\_\_\_\_

Longitude of Collection Site (GPS or Degree/m/s): \_\_\_\_\_

Item	1st Measurement	2nd Measurement	3rd Measurement	Final Determination (Enter this into database)
Temperature (C)				
pH (0-14)				
Nitrate (PPM)				
Phosphate (PPM)				
Dissolved				
Oxygen (PPM)				
Turbidity (NTU)				
Coliform				
Bacteria (CFU/100mL)				
Biological				
Oxygen				
Demand				
Salinity (mg/L) <sup>1</sup>				
Water Quality Grade: Testing Site(A-F)				
Water Quality Grade Region: (A-F)				
Water Quality Grade Entire Watershed (A-F)				

*\* Salinity – measured only at coastal locations and Pecos basin.*



# RIO RESEARCH ROUNDUP

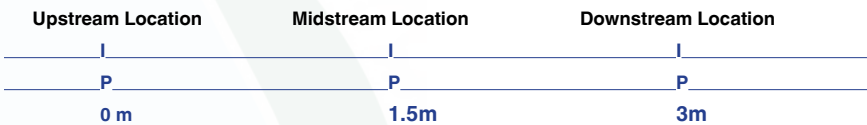
## Stream Flow Measurement

**Stream flow** is the measure of how much water passes a point in a given period of time. Use the following steps to measure stream flow at your Rio Grande test site.

**Purpose:** To determine stream flow at a given location on the Rio Grande or one of its tributaries using the formula, stream velocity x stream area = stream flow

**Equipment:** Three flags or sticks, a measuring tape or meter stick, a floating object, and a stopwatch

1. Measure a 3-meter section of the stream. Mark the Upstream Location (0 m point) with a flag or stick. Mark the Midstream Location (1.5m point) with another flag or stick. Mark the Downstream Location (3m point) with a third flag or stick.



2. Measure the depth in centimeters at the Upstream Location. \_\_\_\_\_  
 Measure the depth in centimeters at the Midstream Location. \_\_\_\_\_  
 Measure the depth in centimeters at the Downstream Location. \_\_\_\_\_  
 Average these values to find the **Mean Depth (cm)**. \_\_\_\_\_

3. Measure the width of the stream in centimeters at the Upstream Location. \_\_\_\_\_  
 Measure the width of the stream in centimeters at the Midstream Location. \_\_\_\_\_  
 Measure the width of the stream in centimeters at the Downstream Location. \_\_\_\_\_  
 Average these values to find the Mean Width (cm). \_\_\_\_\_

4. Place a small floating object in the water at the Upstream Location. (This could be a small plastic ball or whatever can float down the stream.)

Let the floating object go and time the speed of the floating object as it moves to the Downstream Location. \_\_\_\_\_  
 Float the object downstream for a second trial. \_\_\_\_\_  
 Float the object downstream for a third trial. \_\_\_\_\_  
 Average these values to find the Mean Time (sec). \_\_\_\_\_

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## ADDITIONAL COMPONENTS



ART



90 SECOND VIDEO



SOCIAL MEDIA AWARENESS

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## Social Media Awareness Guidelines

Students will use social media platforms including Facebook, Twitter, Instagram, and TikTok.



- Students must post photos/videos and write captions that highlight their experiences with the Roundup, the importance of the program, and raise awareness about environmental concerns prevalent in their region and community.
- Students must tag us (@RGISCLaredo on all social media platforms) and use the hashtag #RRR2023 so we can find your posts!
- Students have the option to create a page for their school, roundup team, or post from their personal accounts. There is no limit to the amount of posts allowed, so get creative and have fun with it!

### Criteria

Students' social media awareness posts will be judged based on:

- Creativity (content AND caption)
- Connection to the Rio Research Roundup AND/OR environmental concern



*Cigarroa High School - Laredo, TX*

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# RIO RESEARCH ROUNDUP

## 90-second Video Guidelines

Student teams should allow their creativity to flow for their 90 second video.

Students are free to add special visual and sound effects, as long as the video contains the following elements:

- Name of the watershed testing site (can be GPS points and/or physical description)
- Name of school and, if applicable, name of Roundup team, as well as city and state.
- Panorama of the ecology of the testing site
- Evidence of team conducting a parameter measurement.



*Hot Springs High School – Truth or Consequences, NM*



# RIO RESEARCH ROUNDUP

## Water Quality Grades Guidelines

Student teams evaluate data and assign Grade A-F for water quality at:

- 1) **your individual site;**
- 2) **your region - listed on page 21**
- 3) **the entire watershed basin.**

Grades can be rated + or – for more accuracy, for example, B+, C-.

<b>Grade A</b>	<b>Extremely good water quality</b>
<b>Grade B</b>	<b>Relatively good water quality</b>
<b>Grade C</b>	<b>Relatively poor water quality</b>
<b>Grade D</b>	<b>Extremely compromised water quality</b>
<b>Grade F</b>	<b>Hypoxia (Extremely low, or no, oxygen levels with very little or no life)</b>

A link to view updated student water-quality submissions will be sent via e-mail to each Roundup teacher.

### Students will be judged on:

Water quality data submitted for all parameters

- Individual: Grade is relative to data
- Region: Grade is relative to data
- Watershed: Grade is relative to data



*Nixon High School - Laredo, TX*

# RIO RESEARCH ROUNDUP

## Literary Art or Visual Art Guidelines

Each student team can recreate their observations on the river basin by creating an original work of art.

Student teams can submit a piece in the Literary or Visual Arts categories. If multiple pieces are submitted, the highest scoring piece will be retained by the judges.

***\*\*All works must have the Rio Grande Basin as the main focus, or a Texas Basin for Texas Basin schools.***

**Literary art** includes any form of written art. This can include but not be limited to the following genres: song (written or sung), short play, short fiction story (5 pages max), a poem, among others.

**Visual art** includes any form of art that will be judged on its overall look. The artist(s) can keep the art, but we must receive clear photos of the work. This can include but not be limited to the following: painting/drawing (any media, digital art included) and sculpture, among others.

Students will be judged on:

- Creativity
- Originality



*Hot Springs High School - Truth or Consequences, NM*

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Laredo College - Laredo, TX



Big Bend HS - Terlingua, TX



Navajo Preparatory School - Farmington, NM



CETMAR 35 - Matamoros, TAMP



CETIS 87 - Delicias, CHIH

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# RIO RESEARCH ROUNDUP

## US 2022 DATA

STATE	CITY	SCHOOL	TEACHER	Latitude	DATE & TIME OF TESTING	Temp (°F)	pH (0-14)	NITRATE (PPM)
<b>UPPER NEW MEXICO BASIN</b>								
NM	Farmington	Navajo Preparatory School	Kevin Keely	Latitude: 36.732692° N Longitude: -108.249173° W	10/20/2022 12:30 PM	10	7	7.5
NM	Albuquerque	Cibola High School	William Siefert	Latitude: 35.1871124 N Longitude: -106.65034 W	10/06/2022 10:00 AM	21	8	5
NM	Santa Fe	Rio Grande High School	Erin Gladdis	Latitude: 35.680478 Longitude: -105.910679	10/14/2022 10:00 AM	11.7	7	5.8
NM	Taos	Taos High School	Andy Leonard	Latitude: 36.3361° N Longitude: 105.7337° W	11/06/2022 12:52 PM	4.5	8	5
NM	Santa Fe	Santa Fe Indian School	Mark Ericson	Latitude: 35°36'2.11" N Longitude: 106°20'24.74" W	10/12/2022 1:30 PM	18	8	5
<b>LOWER NEW MEXICO BASIN &amp; EL PASO</b>								
NM	Truth or Consequence	Hot Springs High School	Mark Hedge	Latitude: 33.483104 Longitude: -107.123761	10/20/2022 11:00 AM	18	8	5
<b>LOWER NEW MEXICO BASIN &amp; EL PASO</b>								
TX	Terlingua	Big Bend High School	Marcy Reed	Latitude: 29.32747 Longitude: 103.55359	11/03/2022 10:15 AM	22	8	5
TX	Corpus Christi	Grant Middle School	Yolanda Aviles	Latitude: 27.51° N Longitude: 97.36° W	10/29/2022 9:15 AM	20	7	5
TX	Hallettsville	Sacred Heart Hallettsville	William Hill	Latitude: 96.4448 Longitude: 29.4426	11/11/2022 1:06 PM	26	8	5
TX	Hallettsville	Sacred Heart Hallettsville	William Hill	Latitude: 96.9448 Longitude: 29.4426	11/10/2022 1:00 PM	26	8	5
TX	Hallettsville	Sacred Heart Hallettsville	William Hill	Latitude: 96.4426 Longitude: 29.4426	11/11/2022 1:06 PM	26	8	5
TX	Ingleside	Ingleside High School	Robin Flores	Latitude: 97°13'14" N Longitude: 97°13' 14" W	11/17/2022 2:18 PM	14	8	5
<b>PECOS TRIBUTARY</b>								
NM	Roswell	Sidney Gutierrez Middle School	Jessica Gazdik	Latitude: 33° 23' 56" N Longitude: 104° 23' 55 W	10/11/2022 12:30pm	18	6	5
NM	Carlsbad	Southwest New Mexico State College	Rick Wiedenmann	Latitude: 32°26'41.17" N Longitude: -104°15'17.63" W	10/13/2022 10:20 AM	20	7	5
<b>LAREDO AREA</b>								
TX	Laredo	Laredo College	Julie Kelley	Latitude: 27.503331 Longitude: -99.527096	10/25/2022 2:00 PM	24.6	7.3	5
TX	Laredo	Hector J. Garcia Early College	Gaona Gabriela	Latitude: 27.672162 Longitude: -99.438774	10/21/22 9:00 AM	28	8	5
TX	Laredo	Cigarroa High School	Arturo S. Garcia	Latitude: 27.493325 Longitude: -99.470924	10/27/2022 10:08 AM	22	7	5
TX	Laredo	M.B. Lamar Middle School	Abel E. Garcia	Latitude: 27.537023 N Longitude: -99.448494	10/14/2022 9:17 AM	25	7	5
TX	Laredo	L.J. Christen Middle School	Mark Lopez	Latitude: 27.49942 Longitude: -99.49842	10/12/2022 10:15 AM	22	8	5
TX	Laredo	J.W. Nixon High School	Derly Inclan	Latitude: 27.5496° N Longitude: 99.4325° W	10/13/2022 9:00 AM	30	5	5
TX	Laredo	Alexander High School	Veronica R. Villarreal	Latitude: 27.5851° N Longitude: 99.5301 ° W	10/21/2022 10:30 AM	24.5	8	5
TX	Laredo	Alexander High School	Charles Dalrymple	Latitude: 27.5999° N Longitude: 99.4712 ° W	10/17/2022 9:00 AM	24	7	5
TX	Laredo	Memorial Middle School	Clarissa Carrillo	Latitude: 27.4265 Longitude: -99.4835	10/27/2022 10:00 AM	24	8	5
TX	Laredo	Salvador Garcia Middle School	Nancy Martinez	Latitude: 27°19'55.8" N Longitude: 99°30'38.7" W	10/14/2022 10:00 AM	26	7	5



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# RIO RESEARCH ROUNDUP

## US 2022 DATA

PHOSPHATE (PPM)	DISSOLVED OXYGEN (PPM)	TURBIDITY (NTU)	COLIFORM BACTERIA (CFU/100ml)	BIOLOGICAL OXYGEN DEMAND	SALINITY (UPPER TEXAS BASINS ONLY)	FLOW RATE (CUBIC METERS/ SECOND) <sup>2</sup>	Site Grade (A-F)	Region Grade (A-F)	Watershed Grade (A-F)
<b>UPPER NEW MEXICO BASIN</b>									
1.4	4	100	Positive	3.3	-	22	B	C	B
—	3	100	Positive	0	-	n/a (last year 19)	C	C	C
1.7	4.9	36	Positive	3	-	3.4	B	B	B+
2	4	50	Positive	4	9	13.5	A	A	A
2	4	100	Positive	4	0	20	B	C	C
<b>LOWER NEW MEXICO BASIN &amp; EL PASO</b>									
2	4	>240	Positive	2	0	14.78	B	C	C+
<b>LOWER NEW MEXICO BASIN &amp; EL PASO</b>									
2	4	40	Positive	2	8.4	0.031	D-	C-	D
1	4	40	Positive	0	-	0	B+	B-	B
4	2	40	Positive				B	B-	C
2	0	40	Positive				B	B-	C
4	2	40	Positive				B	B-	C
1	39	40	Positive	4	-	-	B	B-	B
<b>PECOS TRIBUTARY</b>									
2	4	100+	Positive	4	4.4	-	C	C	B
2	4	20	Positive	0	940	5	B	B	B
<b>LAREDO AREA</b>									
2.75	3.2	40	Positive	1.6	-	0.41			
1	8	40	Positive	0	-	0	C	C	C
1	1	40	Positive	4	-	10.13	C	B	B
3	4	40	Positive	0	-	0	B	B	-
2	4	40	Positive	4	0	0	C+		
1	4	0	Positive	6	-	-	B	B	B
0	48	1	Positive	48	-	1	B	B	B
3	4	40	Positive	-	-	1	B	B	B
1	4	100	Positive	0	-	178	D	D	C
2	0	40	Positive	4	-	10	A	A	A

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# RIO RESEARCH ROUNDUP

## MEXICO 2022 DATA

Estado	Ciudad	Escuela	Maestro	Latitud/Longitud	Fecha y Tiempo Colectada	Temp (C)	pH (0-14)	Nitrato (PPM)
<b>ALTA CUENCA</b>								
CHIH	Delicias	CETIS 87	Maria de la Luz Duron Terrazas	Latitud: 27°34' 685" Longitud: 105°2'065"	10/12/2022 11:30 AM	26	7	5
CHIH	Cuidad Juarez	Instituto Tesla de Ciudad Juárez	Daniela Nieto	Latitud: 31.7611466 Longitud: -106.509	10/14/2022 9:16 AM	20	8	5
<b>MEDIA CUENCA</b>								
COAH	Pierdas Negras	CBTIS 34	Lidia Paola Mendez Jimenez	Latitud: 28.70285°N Longitud: 100.51124°W	10/14/2022 8:32 AM	15°C	8	5
<b>BAJA CUENCA</b>								
TAMP	Nuevo Laredo	CBTIS 234	Nora Alacron	Latitud: 27 30' 01" N Longitud: 99 30' 10" O	10/17/2022 10:00 AM	28	8	5
TAMP	Matamoros	Colegio de Bachilleres del Estado de Tamaulipas: Plantel 02 "Prof. Hilarino Jimenez Leon"	Tomas Eduardo Mejia Perez	Latitud: 25.8497626 Longitud: -97.43776896	10/24/2022 12:00 PM	23	8	5
TAMP	Reynosa	CETIS No. 71	Julia Patricia Hernandez Vales	Latitud: 26.0827 Longitud: -98.2614	10/24/2022 4:00 PM	30	8	5
TAMP	Matamoros	Universidad Americana del Noreste Equipo: 1	Dr. Adán Echeverría - Garcia	Latitud: 25°55'39.60"N Longitud: 97°34'5.10"O	10/31/2022 8:00 AM	22.3	3	5
TAMP	Matamoros	Universidad Americana del Noreste Equipo: 2	Dr. Adán Echeverría - Garcia	Latitud: 25°55' 39.6° Longitud: 97°34'5.10°	10/31/2022 10:01 AM	22.39	6	3
TAMP	Matamoros	Universidad Americana del Noreste Equipo: 3	Dr. Adán Echeverría - Garcia	Latitud: 25°53' 32.51" Longitud: 97°29'48.03°	10/31/2022 10:55 AM	22.62	8	5
TAMP	Matamoros	Centro de Estudios Tecnologicos del Mar No. 35	Maria Esther Nuno Ponce	Latitud: 25.841 Longitud: -97.425	11/11/2022 10:00 AM	26	8	5
TAMP	Reynosa	CBTIS 276: Group 1	Sergio Antonio Teran Trevino	Latitud: 26°08'12" N Longitud: 98°20'08" W	10/13/2022 10:24 AM	28	8	5
TAMP	Reynosa	CBTIS 276: Group 2	Sergio Antonio Teran Trevino	Latitud: 26°08'37" N Longitud: 98°19'54" W	10/13/2022 11:08 AM	28	8	0
TAMP	Matamoros	Secundaria General No.2 Adolfo Lopez Mateos	Karina Almazan Florea	Latitud: 25°52'45.268°N Longitud: N97°29 '18.422°W	10/14/2022 1:10 PM	28°C	7	5

# RIO RESEARCH ROUNDUP

## MEXICO 2022 DATA

Fosfato (PPM)	Oxígeno disuelto (PPM)	Turbidity (NTU)	Coli-form Bacteria (CFU/100mL)	DBO (Demanda Biológica de Oxígeno)	Salinidad (mg/L)	Velocidad de flujo (metros cúbicos/segundo) <sup>2</sup>	Grado del sitio	Grado de la región	Grado de la Cuenca
<b>ALTA CUENCA</b>									
1	4	40	Positivo	0		23.298	B	B	B
3	4	100	Positivo	0	360	0.076	D-	C-	B
<b>MEDIA CUENCA</b>									
4	4	0	Positivo	0	0	1	B-	B-	B+
<b>BAJA CUENCA</b>									
2	2	40	Positivo	0	0	23.108	B-	B-	B
4	4	0	Positivo	0	450	49	D+	C-	C
4	4	40	Positivo	4	390	18	B	B	B
2	8	0	Positivo	3	0.41	0.5	D	D	D
3	6	70	Positivo	4	1.26	0.5	E	D-	D-
3	2	0	Positivo	4	1.17	0.5	D	C-	C-
4	4	0	Positivo	4	410	0.12	C	C	C
2	4	40	Positivo	4	240	21.3	B	B	B
0	0	40	Positivo	0	320	13.5	C	B	B
1	4	40	Positivo	0	1.5	-	C	C	C

2023

# RIO RESEARCH ROUNDUP

## 2022 ROUNDUP WINNERS

USA - BEST OF COUNTRY

Hot Springs HS - Truth or Consequences, NM.

Teacher: Mark Hedge

## LITERARY/VISUAL ART

Hot Springs HS - Truth or Consequences, NM.

Teacher: Mark Hedge

## SOCIAL MEDIA AWARENESS

Hot Springs HS - Truth or Consequences, NM.

Teacher: Mark Hedge

## 90-SECOND VIDEO

Cibola HS - Albuquerque, NM.

Teacher: William Siefert



***USA – Hot Springs HS -  
Truth or Consequences, NM***



2023

# RIO RESEARCH ROUNDUP

## 2022 ROUNDUP WINNERS

MEX - MEJOR DEL PAIS

Secundaria General No.2 Adolfo Lopez Mateos - Matamoros, Tamaulipas  
Profesora: Karina Almazan

## MEJOR ARTE LITERARIO/VISUAL

Univ. Autónoma de Ciudad Juarez - Ciudad Juarez, CHH  
Profesora: Perla Rodriguez Contreras

## REDES SOCIALES

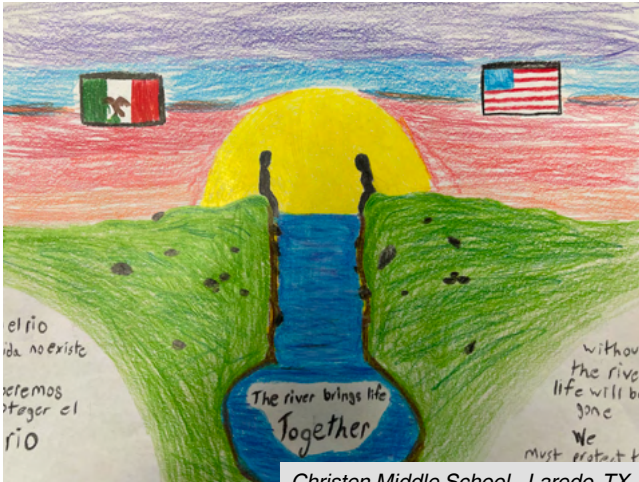
Instituto Tesla de Ciudad Juarez - Ciudad Juarez, CHH  
Profesora: Daniela Nieto

## MEJOR VIDEO

Secundaria General No.2 Adolfo Lopez Mateos - Matamoros, Tamaulipas  
Profesora: Karina Almazan



**MEX - Univ. Auto. del Noreste - Matamoros, TAMP**



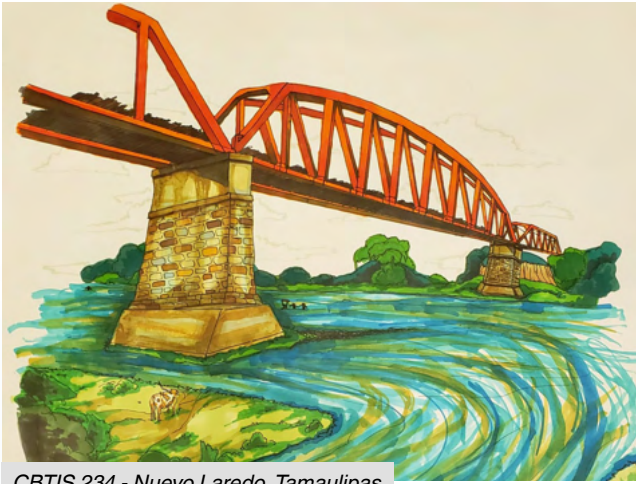
Christen Middle School - Laredo, TX



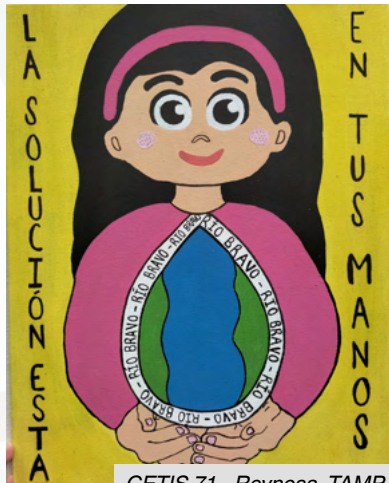
Sacred Heart - Hallettsville, TX



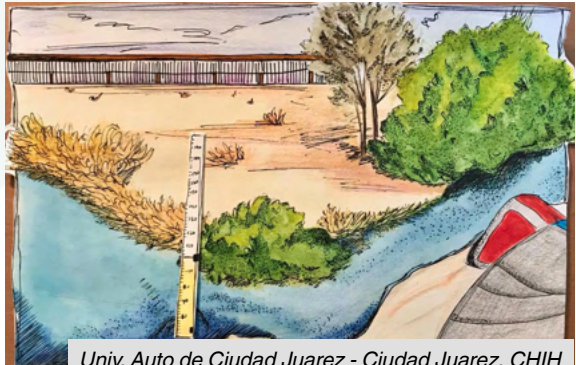
LBJ High School - Laredo, TX



CBTIS 234 - Nuevo Laredo, Tamaulipas



CETIS 71 - Reynosa, TAMP



Univ. Auto de Ciudad Juarez - Ciudad Juarez, CHIH

# Stay In Touch With Us!

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Amede Rubio, PhD, Ruben Soto Jr., CPA

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Annette Maldonado (Membership and Special Projects Officer)  
Ashley Garcia (STEAM and Community Outreach Officer)  
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## **RGISC Mission Statement**

To preserve and protect the Rio Grande-Rio Bravo, its watershed and environment, through awareness, advocacy, research, education, stewardship and bi-national collaboration for the benefit of present and future generations.

## **RGISC Purpose & Activities**

RGISC, a 501c3, was established in 1994 by citizens from Laredo and Nuevo Laredo in response to the deteriorating quality of water in the Rio Grande, our only source of drinking water. The Rio Grande still ranks as one of the 10 Most Endangered Rivers in the world (World Wildlife Fund).

RGISC is Laredo's only environmental nonprofit organization. Our focus is water security and preventing and reducing the introduction of toxins and other waste into the river, as well as preserving green spaces, regional wetlands and other fragile eco-habitats



(956) 718-1063 • [RGISC.ORG](http://RGISC.ORG)

