



Palmer Lake

A brief history

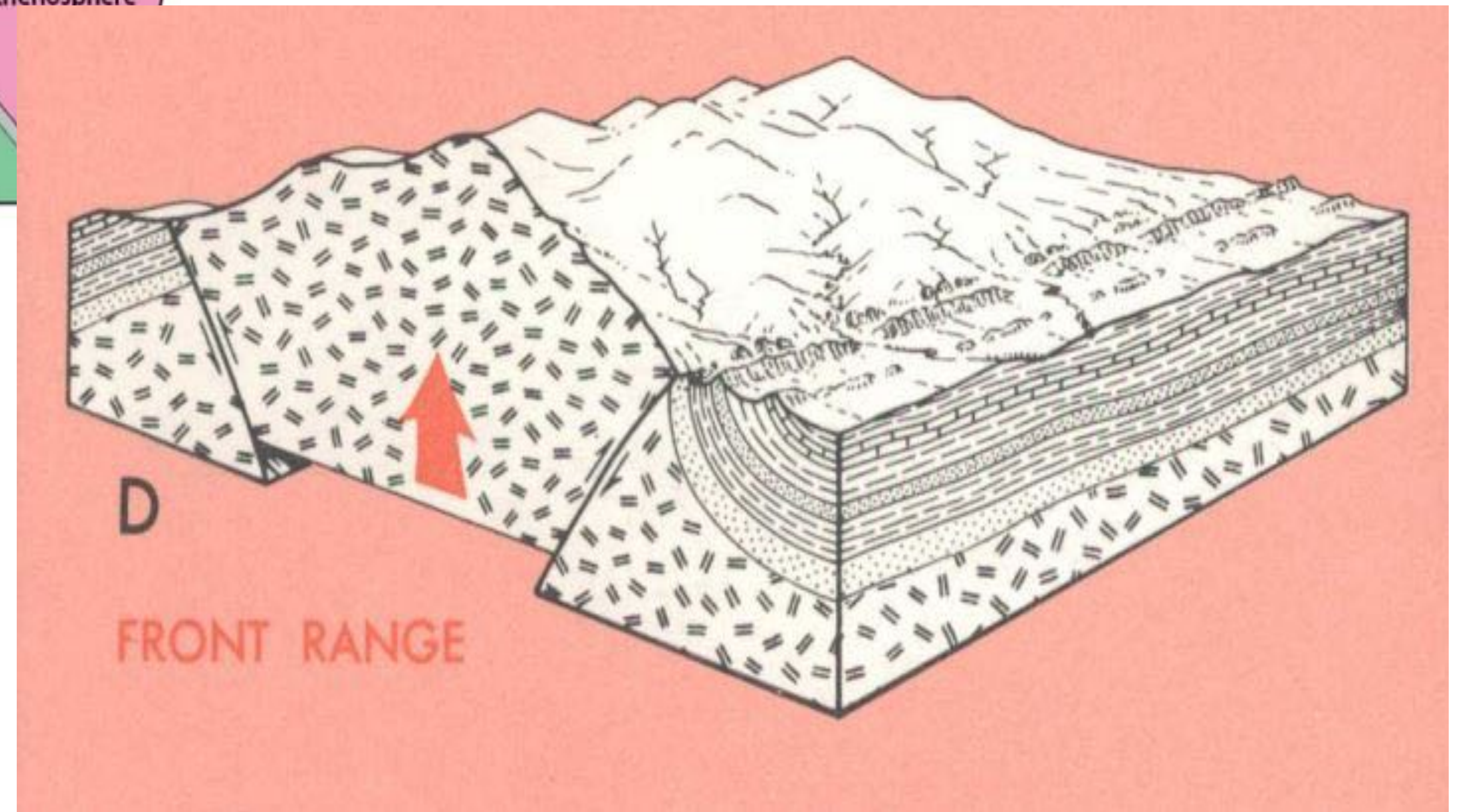
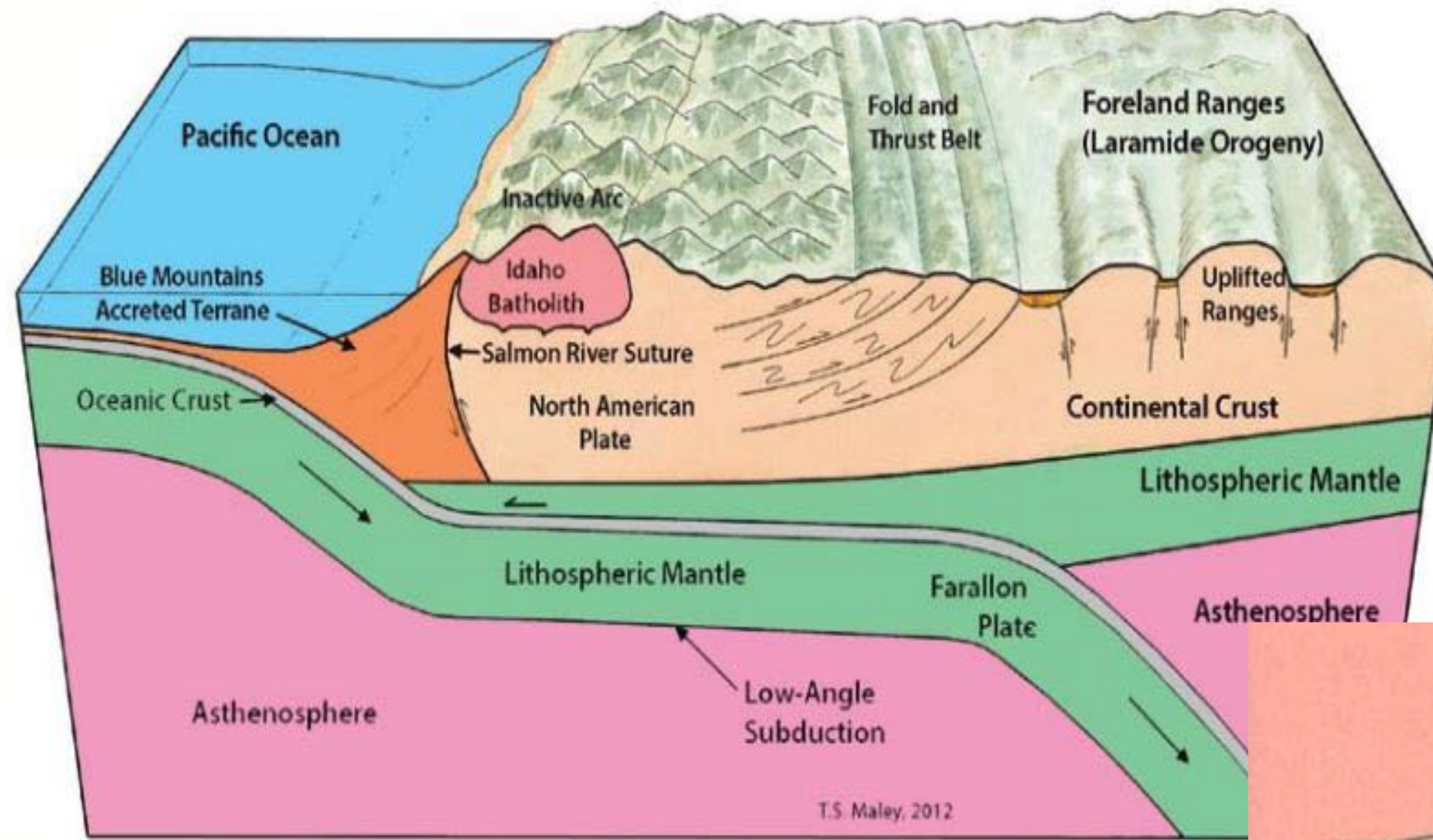
Palmer Lake Town Council Presentation 5/12/23

Geological History

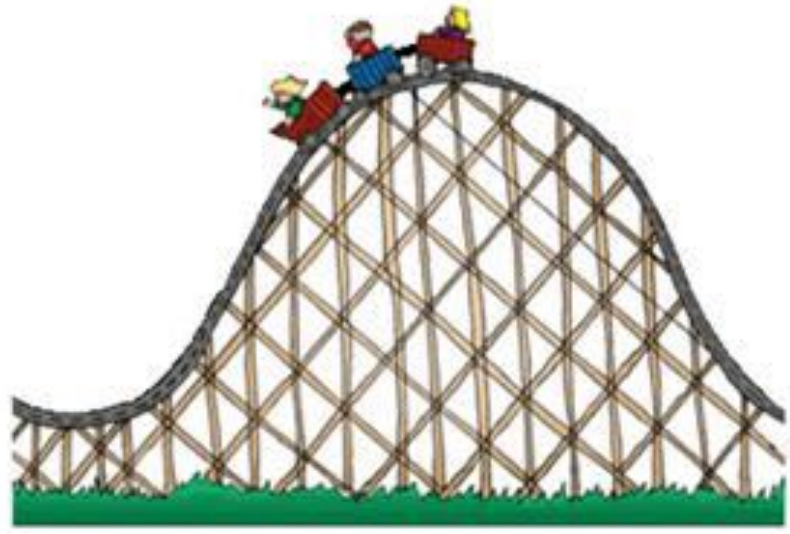
Presented by: **Linda Vier**



Laramide Orogeny



Potential Energy Examples



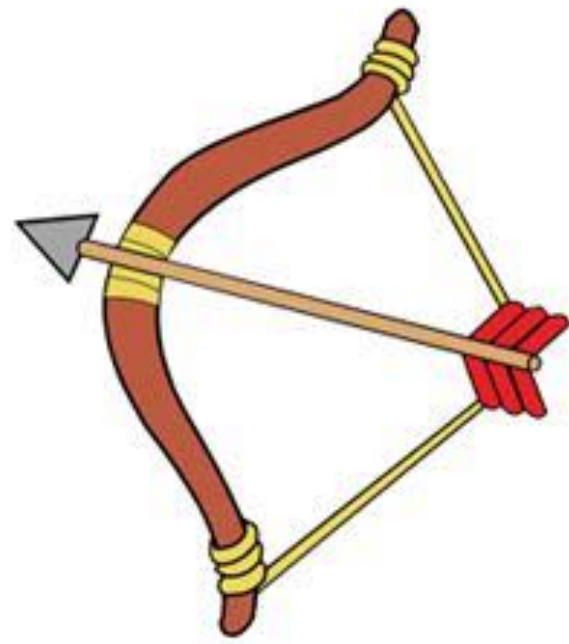
Roller coaster at its highest point



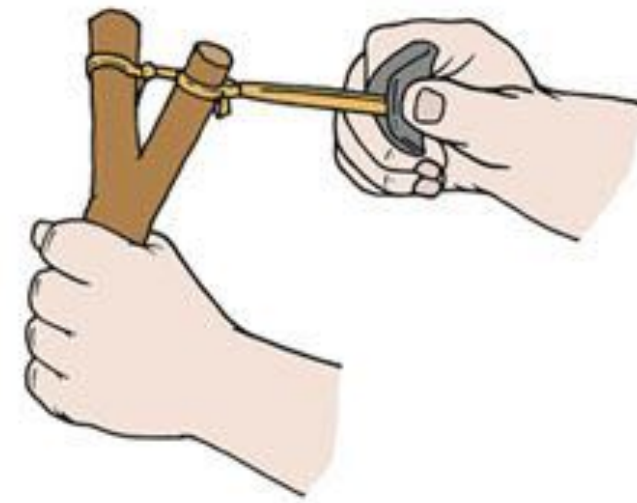
Dam holding and releasing water



Apples on a tree

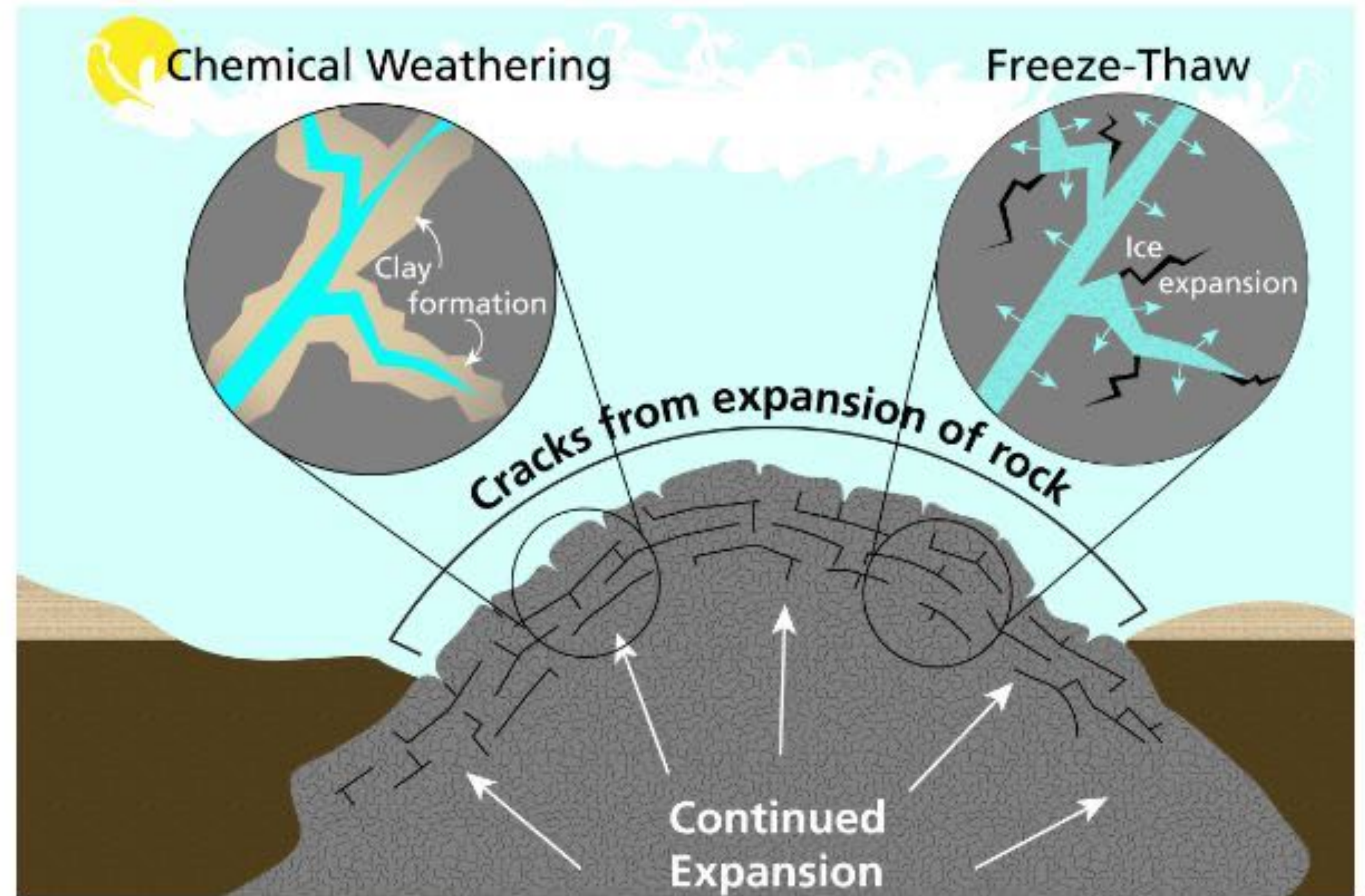


Bow and arrow

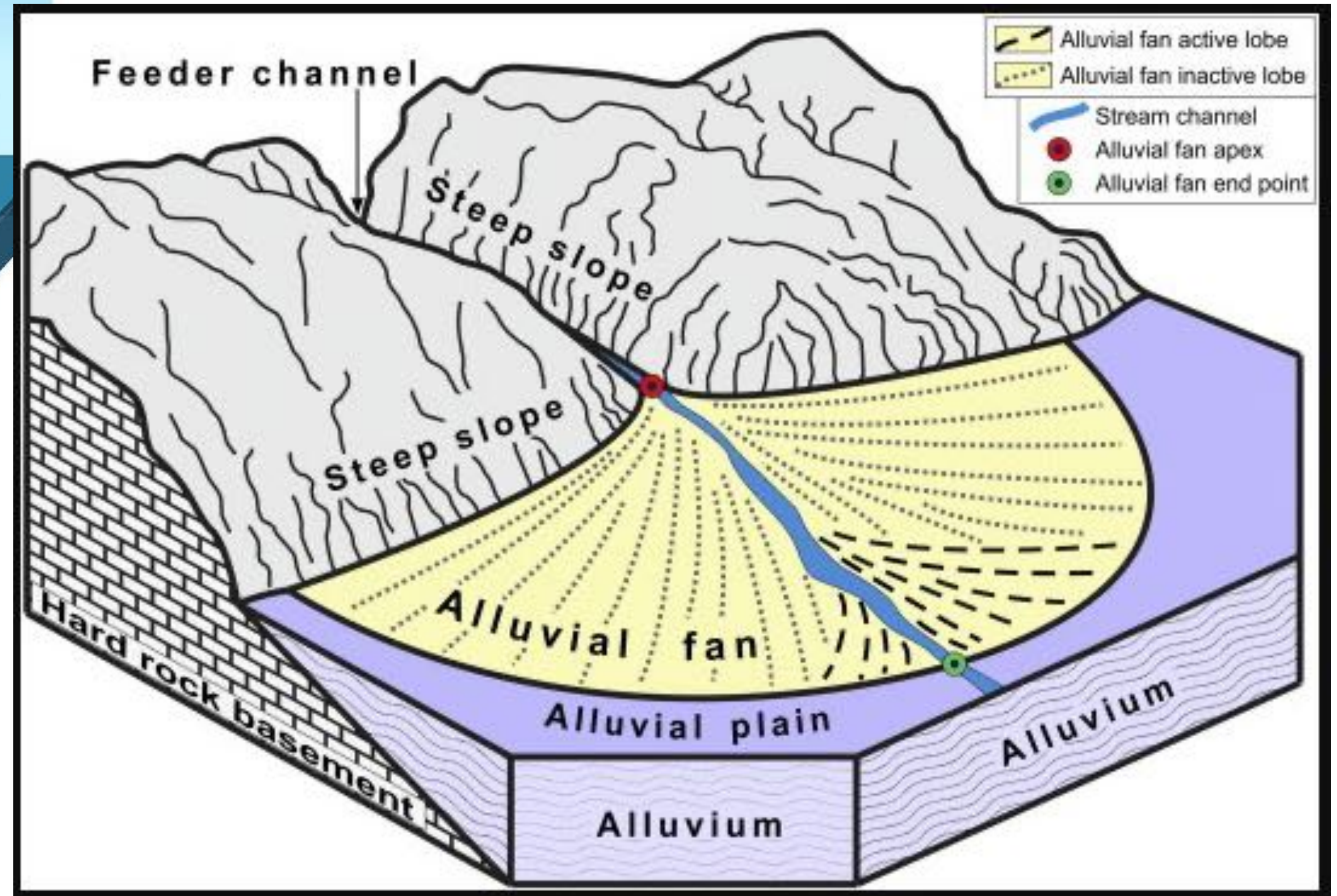
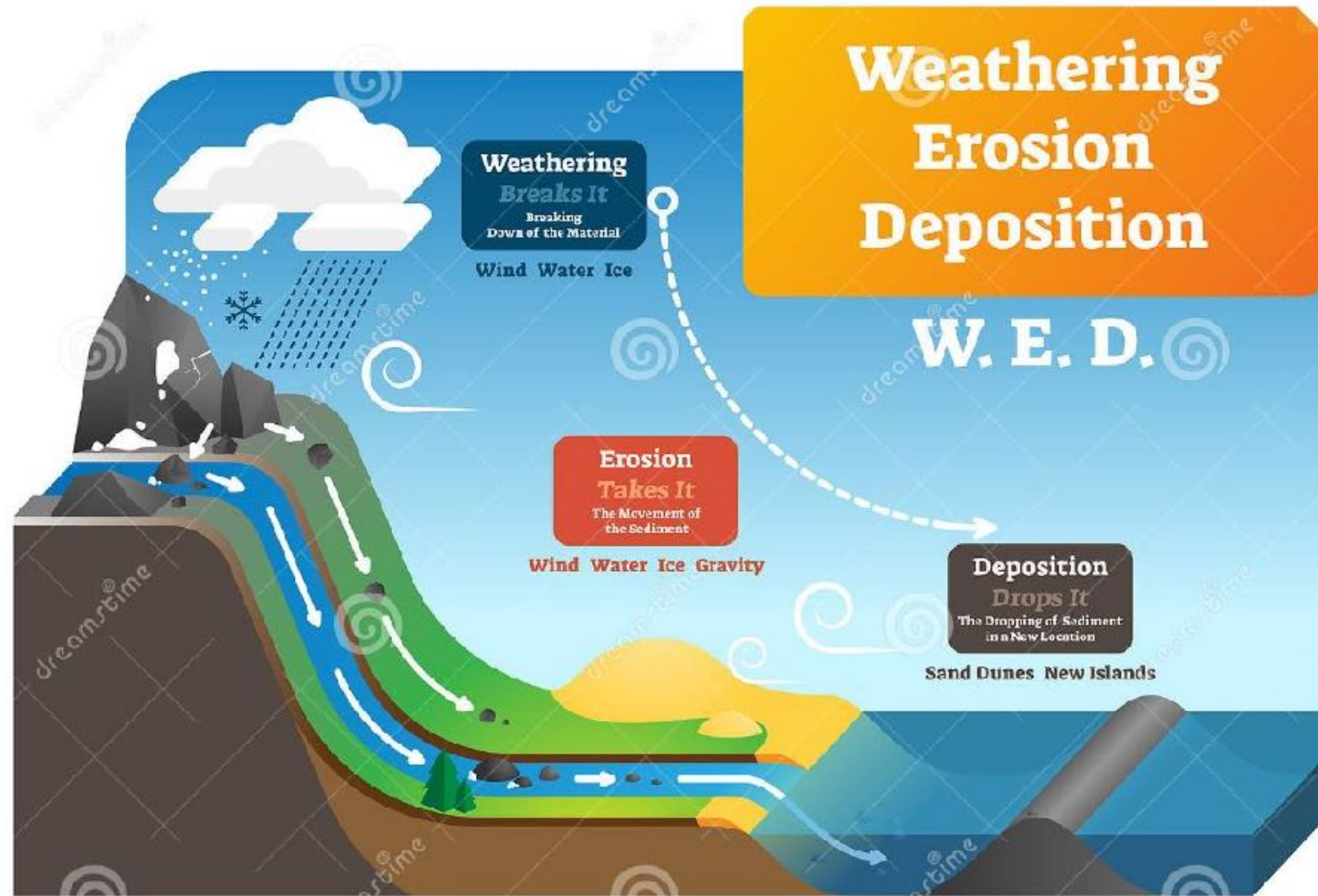


A slingshot being pulled

Gravity and Weathering



Erosion and Alluvial Fans



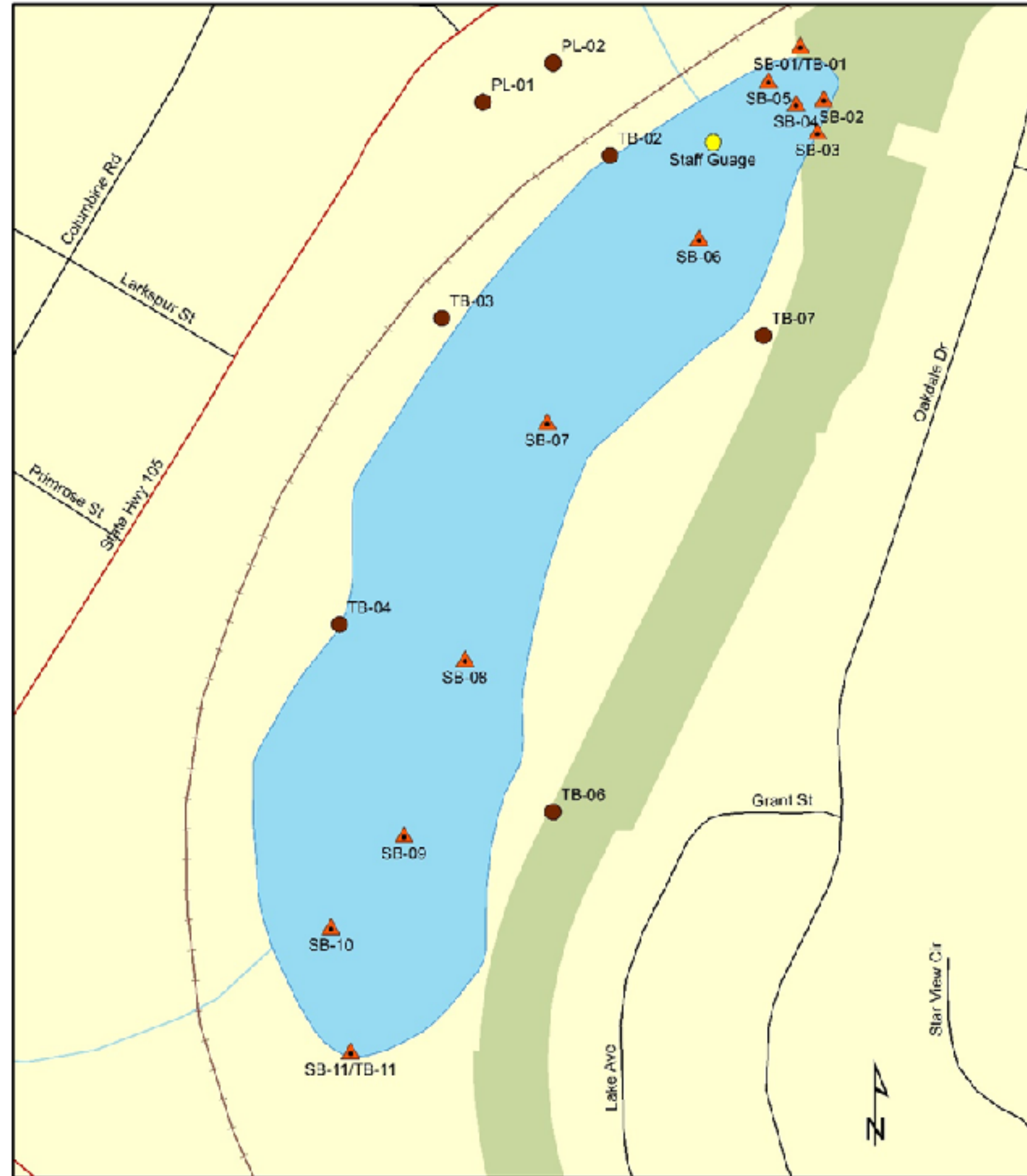
Ben Lomand and Spruce Mountain Textures



Photo Credit: Kristian Price, U.S. Geological Survey

SOIL SURVEY

Borehole and Soil Survey Locations



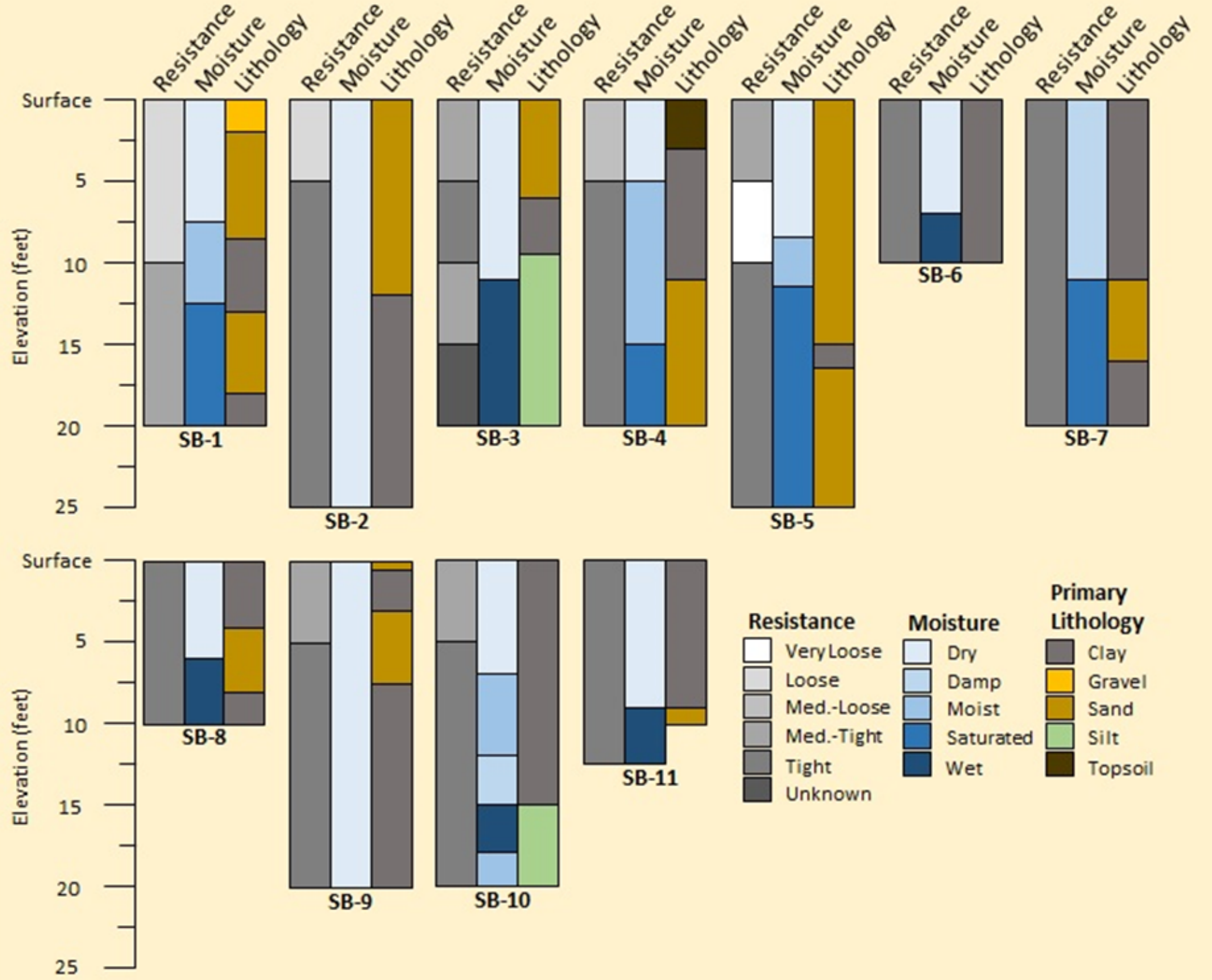
- ▲ Soil Survey
- Borehole Only
- Staff Gauge
- Roads
- Waterways
- Palmer Lake
- Parks
- Railroads
- Highways

Sources: U.S. Geological Survey (USGS),
Well and borehole data provided
by JDS-Hydro.

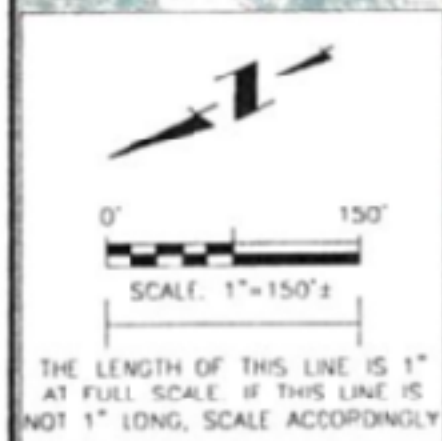
Coordinate System: NAD 1983 StatePlane
Colorado Central FIPS 0502 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983

Author: Linda Vier
Date: 7 May 2017

Borehole Soil Survey

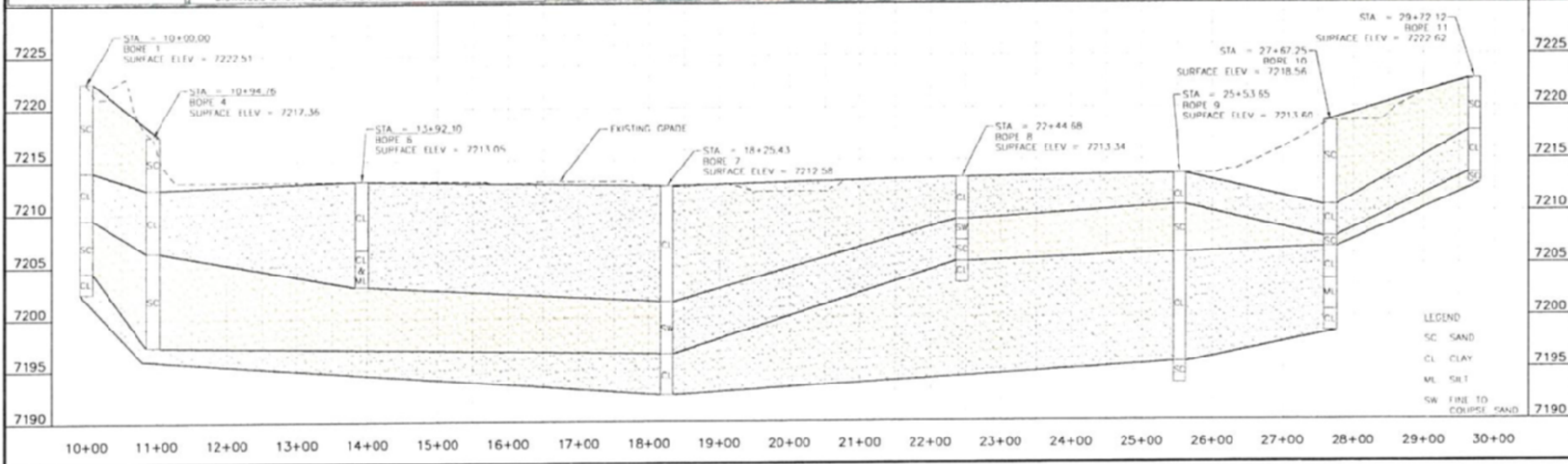


- | Resistance | Moisture | Primary Lithology |
|---|--|--|
| Very Loose | Dry | Clay |
| Loose | Damp | Gravel |
| Med.-Loose | Moist | Sand |
| Med.-Tight | Saturated | Silt |
| Tight | Wet | Topsoil |
| Unknown | | |



NOTES:

1. AERIAL BASE IS NOT ACCURATELY SCALED AND SHOULD BE UTILIZED FOR CONCEPTUAL REFERENCE ONLY.
2. TOPOGRAPHY SOURCE: WAGNER LAND SURVEY, DATED 4/5/05. TOPOGRAPHY HAS BEEN MODIFIED AND IS DEPICTED TO CONFORM TO MONITORING HOLE SURVEY POINTS GATHERED ON 1/28/14.
3. BORE PROFILE WIDTHS ARE EXAGGERATED FOR CLARITY; DISTANCES SHOWN BETWEEN BORES ARE ACCURATELY DEPICTED.



LEGEND

- SC SAND
- CL CLAY
- ML SILT
- SW FINE TO COARSE SAND

DS-HYDRO CONSULTANTS, INC.
 545 East Pikes Peak Avenue, Suite 300
 Colorado Springs, Colorado 80903
 (719) 227-0072

TOWN OF PALMER LAKE - AWAKE THE LAKE
 PALMER LAKE RESTORATION STUDY
 SOIL STRATIFICATION

Project No.	245.02
Scale	AS SHOWN
Date	04/10/14
Design	SCC
Drawn	CM
Check	DES
Revised	

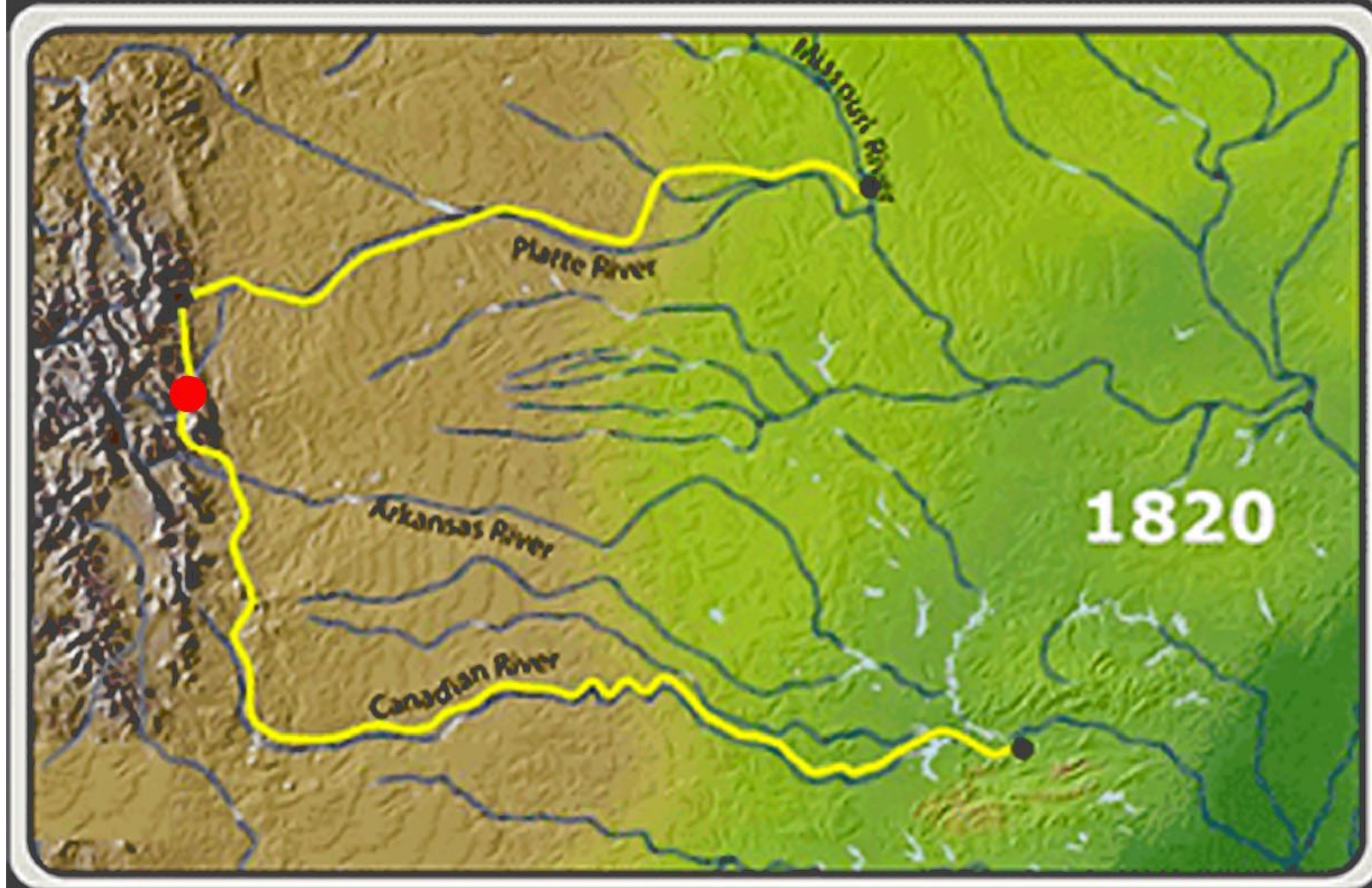
C1

Town History

Presented by: Jeannine Engel



STEPHEN H. LONG'S 2nd ROUTE



Long Expedition 1820





Figure 5, Town of Palmer Lake, 1871, Photo by W. H. Jackson, USGS

Earliest Lake Photo 1871



Summit Lake ca 1872





ca 1872-1882



1885



D&RG Water Tank



Dance Pavilion & Bridge. 1883

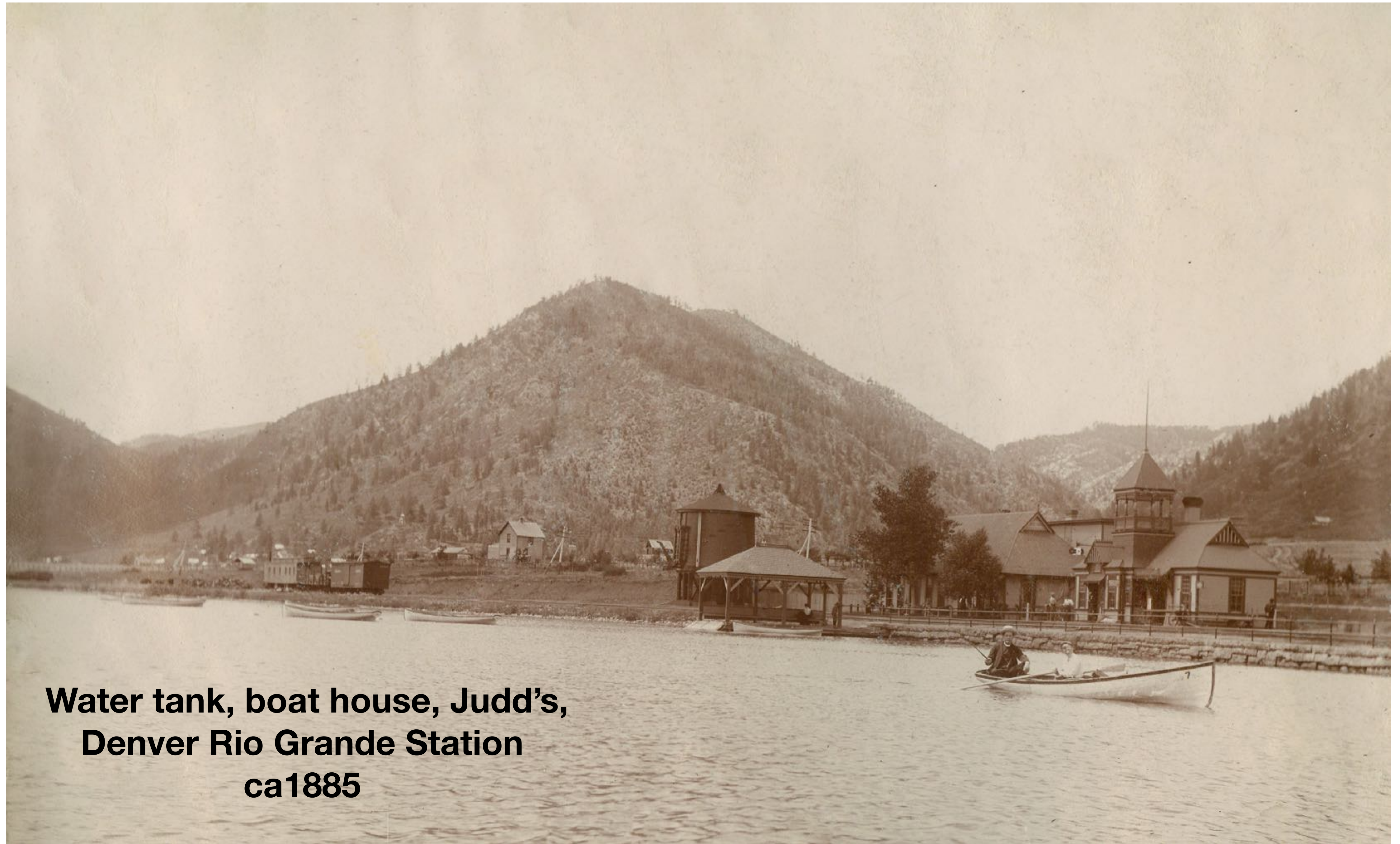


**Water tank, Judd's, & D&RG Depot
Fountain Installed 1883**





Rockland Hotel ca1889



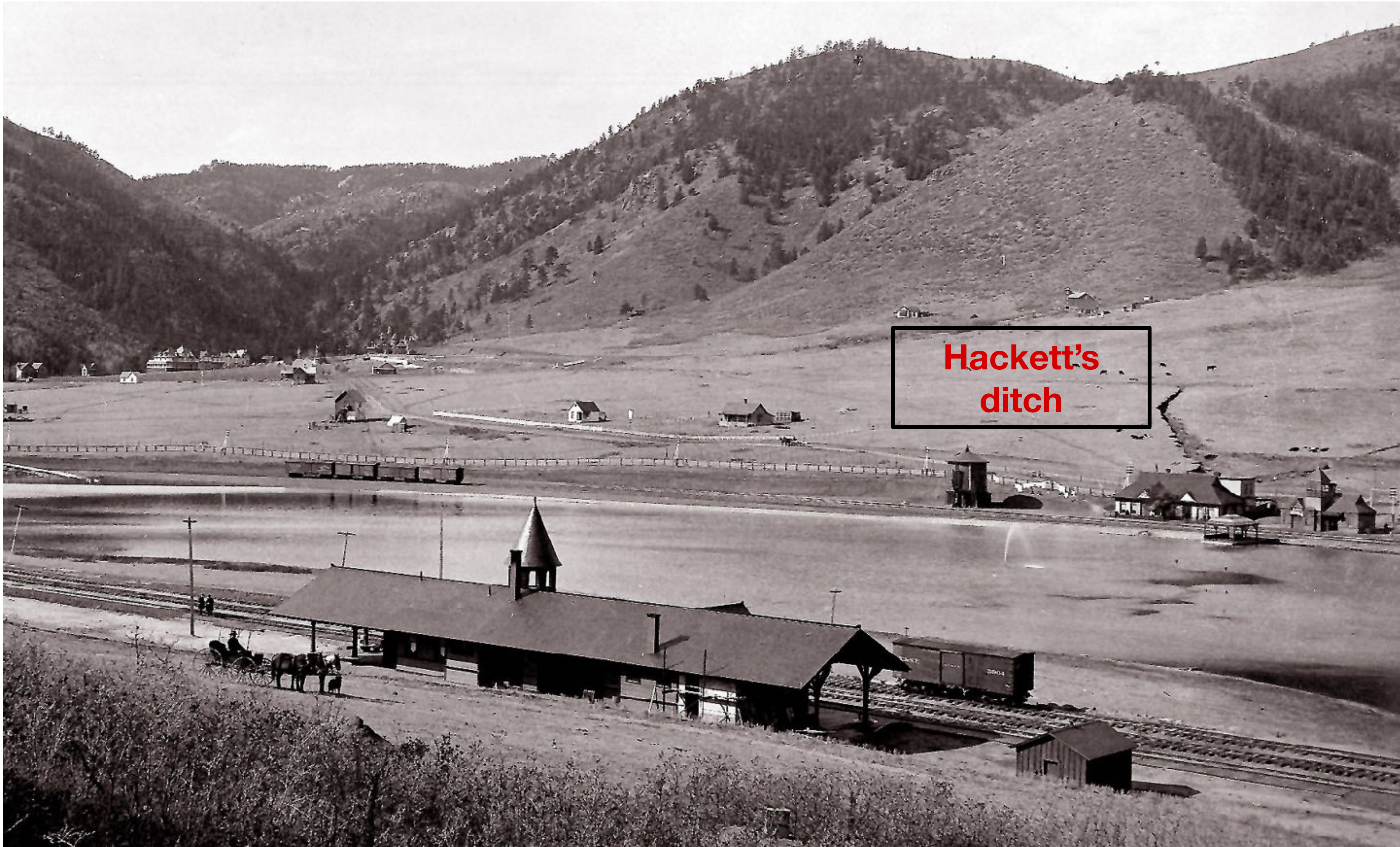
**Water tank, boat house, Judd's,
Denver Rio Grande Station
ca1885**



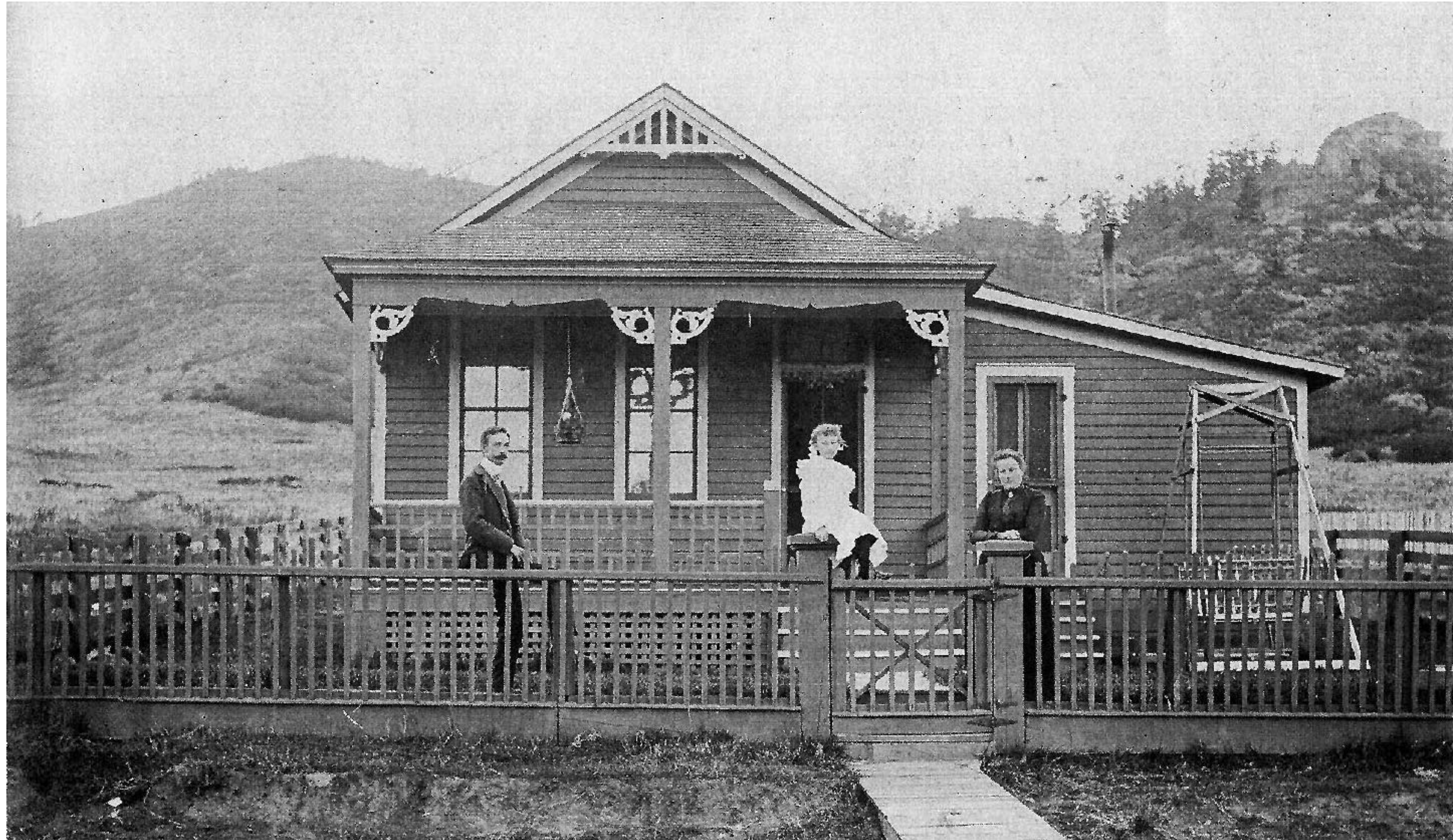
**Santa Fe Depot East side
Completed in 1887**



McIntyre House, 1898



SANTA FE DEPOT SW 1889



Station Agent's House



Judds Eating House & Denver Rio Grande Station

ca1890's



**Judd's Eating House Interior
ca1890**



Ca 1890's

Date: [1890-1900]

Summary: Robert Owen, the mayor of Palmer Lake, and his wife, sit in a cart drawn by burros, Palmer Lake, El Paso County, Colorado.



ca 1890's PL Mayor



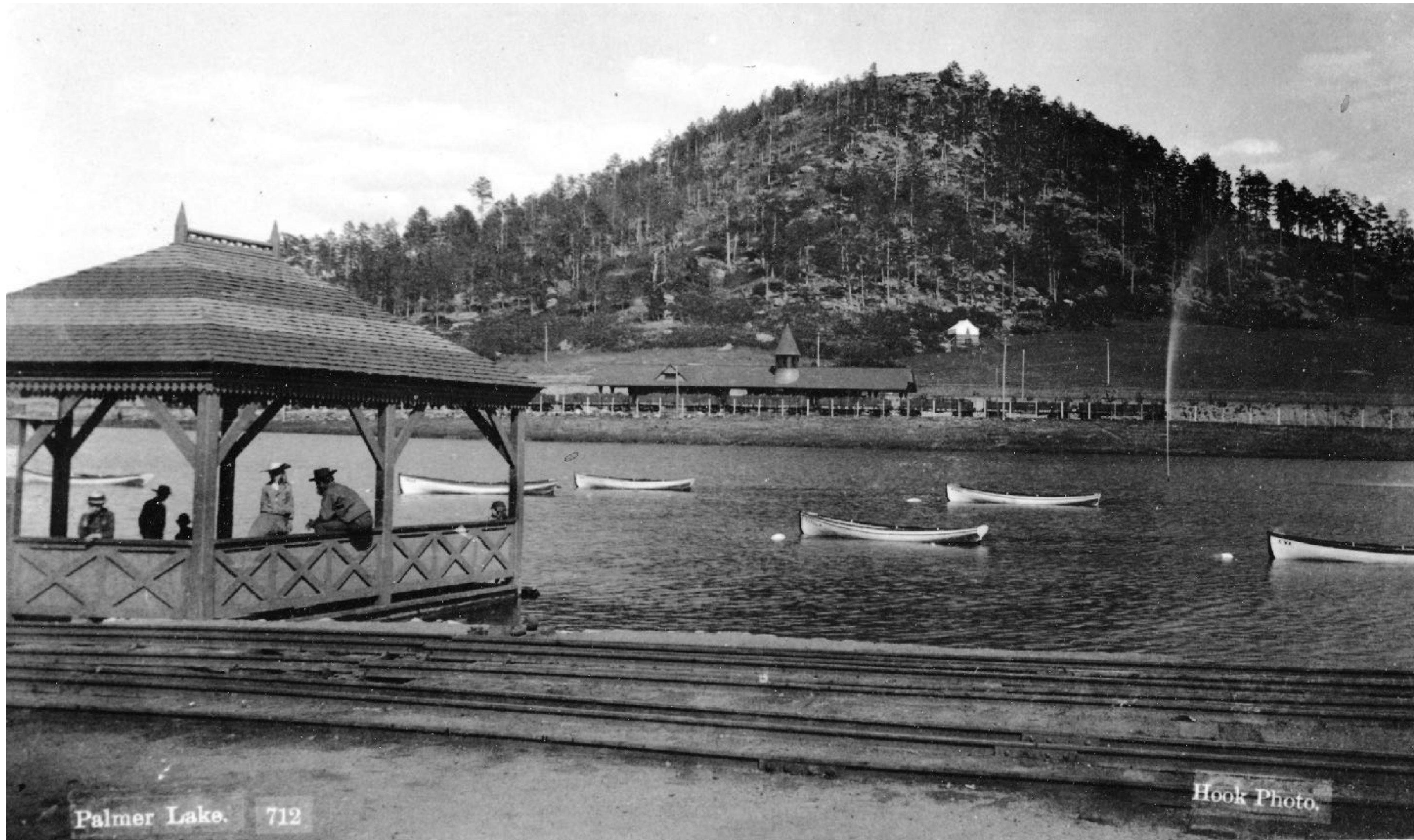
ca 1900



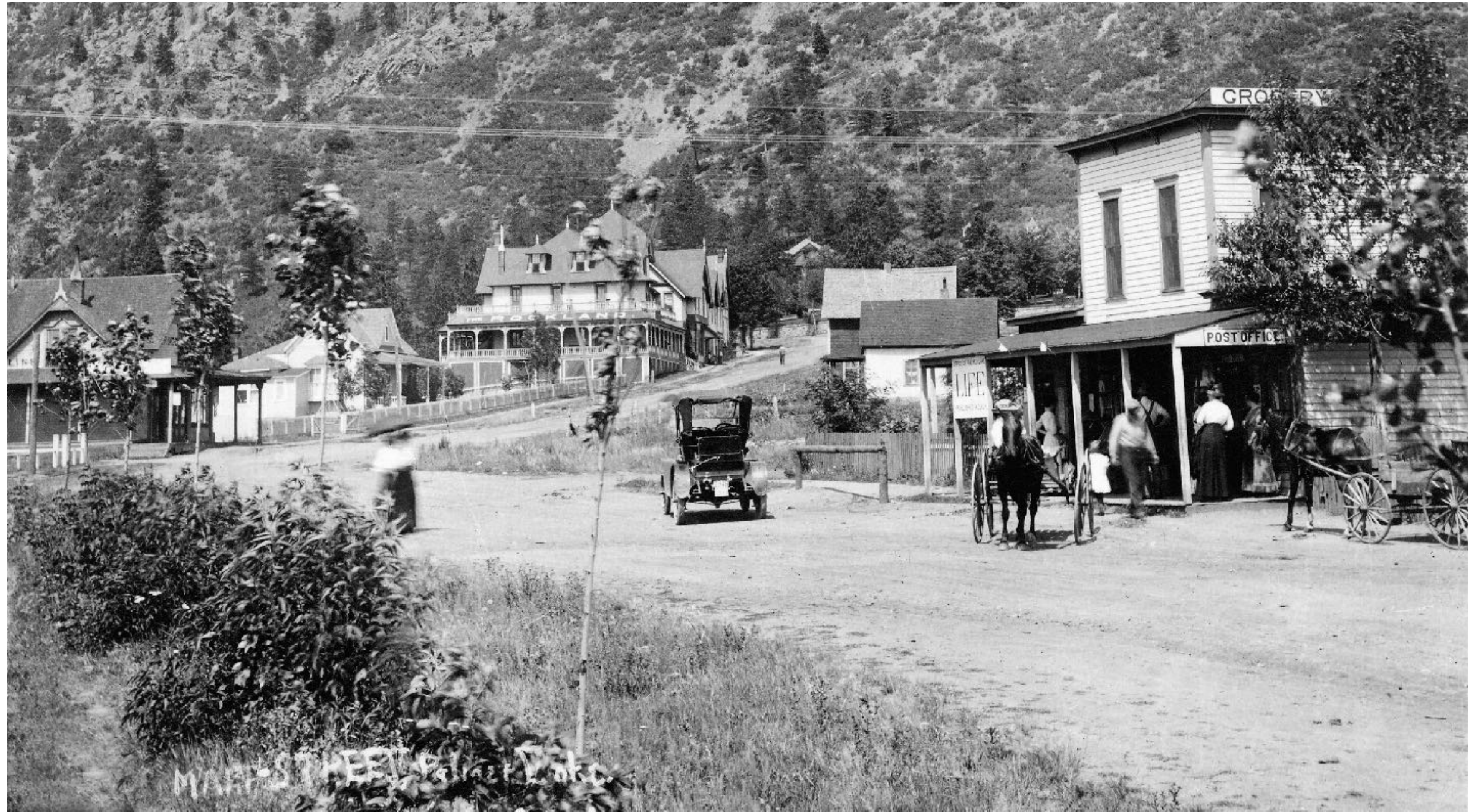
Rockland Grocery 1902 Later known as the Pillsbury Store



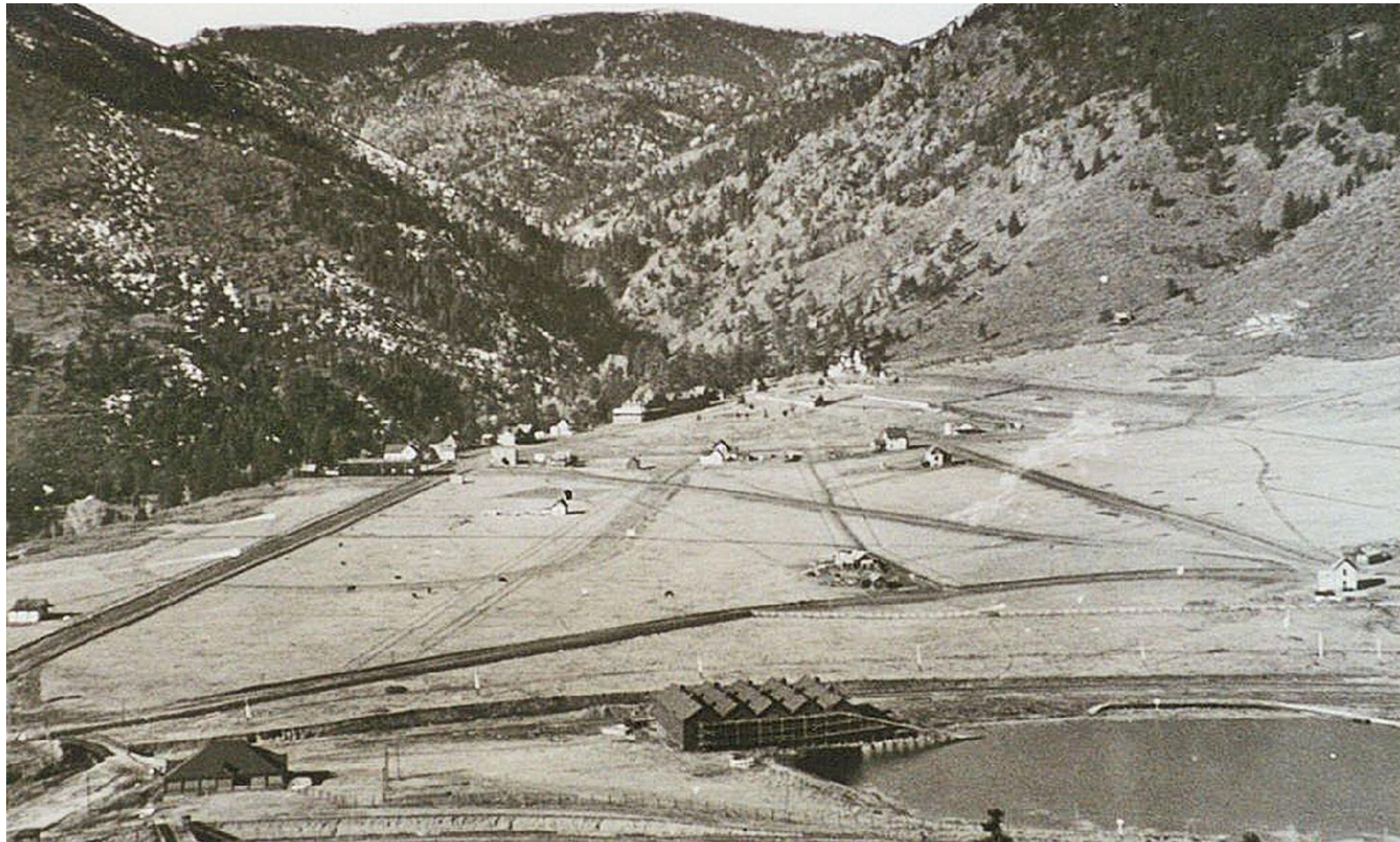
1901



1901



**Main Street (Glenside Rd)
ca 1910**



**Bridge, Dance Pavilion, Ice House remnants of
Hackett's ditch in the distance**

Early Fundraising Efforts

“Save the Lake”

Presented by Jason Phillips



Lake and fishing may be history

By Patricia Sydney Straub

Palmer Lake's lake is as historic as the town itself.

First owned by the Denver Rio Grande Railroad it was a stopping point to water locomotives.

At the turn of the century, tourists visited the lake to enjoy boating, swimming and fishing.

But since the installation of the Santa Fe Trail, El Paso County Parks has owned the surface water rights, prohibiting any activity except fishing.

Now that, too, is in danger of becoming something of the past.

Catchable rainbow trout is the only fish that will be stocked this winter in Palmer Lake, said Colorado Division of Wildlife Senior Aquatic Biologist Doug Krieger.

He said nearly all of the fish stocked last year were killed, including the hardy grass carp, and the DOW is reluctant to stock any more fish because of the high loss.

"It's a really woody lake, and there's not enough water in it during the winter," Krieger explained as the cause of the fish kill. "When a lake fills over with ice, it becomes a microcosm itself," he explained.

Because of the ice, little light can penetrate the lake. Because of the low volume of water and low oxygen level, the fish suffocate, Krieger explained.

plained.

The lake is now only about four-feet deep with about seven-feet of silt and muck on the bottom, he said.

The grass carp was stocked about five years ago to eat vegetation. Last spring the DOW stocked 1,500 fish such as blue gills, channel catfish and bass. Krieger said it was "almost a complete winter kill," and the DOW will change its management and only stock catchable rainbow trout.

"We are unlikely to commit fish with the risk that they will be lost next year," Krieger said.

Palmer Lake has watched the lake's waters slowly recede over the years and has become a town concern.

There are many theories as to why the lake's water level has slackened off, including a train derailment a few years ago north of the lake, according to town finance manager Charles Pocock.

When repaired, the rail section blocked off a culvert underneath the tracks which used to bring water into the lake. The area now has become a swamp, Pocock said.

In addition, a pipe that runs city water under the tracks and used to feed the fountain in the middle of the lake was turned off because a water treatment plant was built, he said.

In January of last year, a voluntary

citizens' group, the Palmer Lake Lake restoration Task Force, was formed to save the lake. Headed by Bud and June Dahlstrom, Barry Blackman, and originally formed by Cindy Allen of the Palmer Lake Parks and Recreation, the task force met with engineers and others to determine what could be done for the lake. The conclusions were:

- Adding water to raise the lake level.
- Dredging and using the dredging material to build a wildlife refuge island in the lake.
- Dredging and moving the dredging material to town property to develop a park.

The U.S. Corps of Engineers recommended that some form of dredging would be the best alternative.

Grants are possible, but before they are awarded the group must have a plan of action, which the town council must approve.



Palmer Lake is in danger of becoming a thing of the past.

Patricia Sydney Straub/The Tribune

november 24, 1994

The committee reported the conclusions to the town council, Dahlstrom said, but could go no further without council's financial assistance. It would need approval and funding to make required sampling tests for possible toxins at the bottom and to pay for the dredging. Dahlstrom said because of the town's history it is unlikely there are any toxins at the bottom.

Dahlstrom said Mayor Chuck Jones tried to get the council to act on the lake, but nothing has been done. Jones was unavailable for comment.

Trustee Charles Pocock agrees something has to be done, however. He said there is no money in the budget to dredge the lake, which would cost about \$1 million.

The possibility is to borrow the city of Colorado Springs' dredge, he said. The community assistance program at Ft. Carson and Palmer Lake's adopted unit 299 Engineering Battalion may assist as well, he said.

"The railroad has agreed to put a culvert under that tracks and redirect water into the lake," Pocock said of another option. But he is unsure when the railroad will begin work.

Finally, untreated water will once again run into the lake when the pipe running to the lake's fountain is turned on again following the scheduled replacement in the spring of a needed pipe, added Pocock.

November 24th 1994

Inspiration to Save Palmer Lake

9 years old

Jason's motivating article which started his drive to SAVE Palmer Lake!

SAVE Palmer LAKE!

0. Look up and find facts.
1. Get Facts Organize.
2. Start to get coffee cans.
3. Make up a speech.
4. Bring coffee cans to school and give
my speech to each class.
5. Start to go around the neighborhood.
6. Start to also make up gestins.
7. Meeting with Mrs. Dolstewom at Libe
on saturday at 10:00.
- 8.
- 9.
- 10.
- 11.

Jason
Brainstorming
ideas at his desk
in his room

Jason's First Interview!



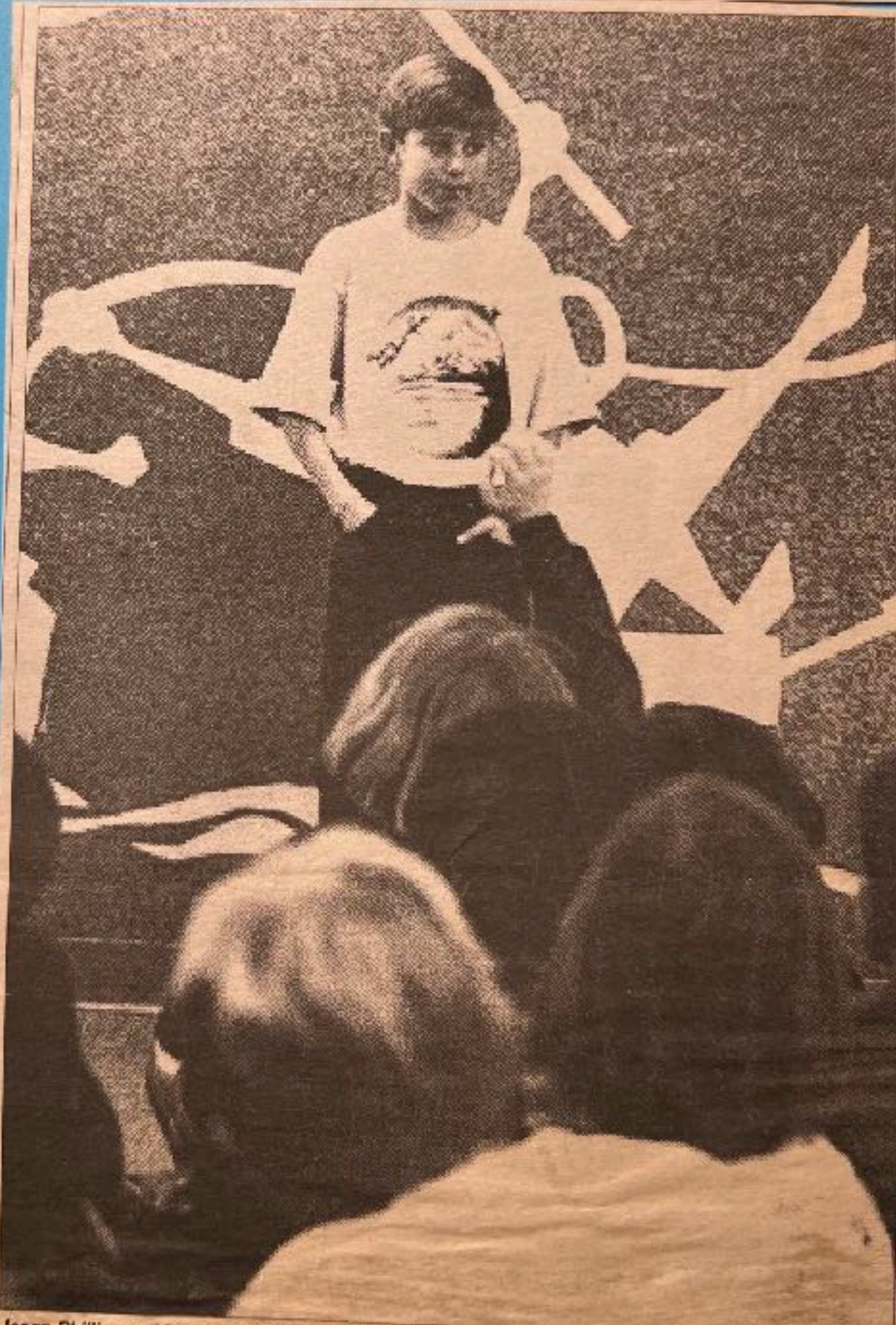
POSITIVE

FEATURING THE GOOD THINGS IN LIFE

VOLUME ONE • ISSUE TWO

A FREE MONTHLY PUBLICATION

APRIL 1, 1995

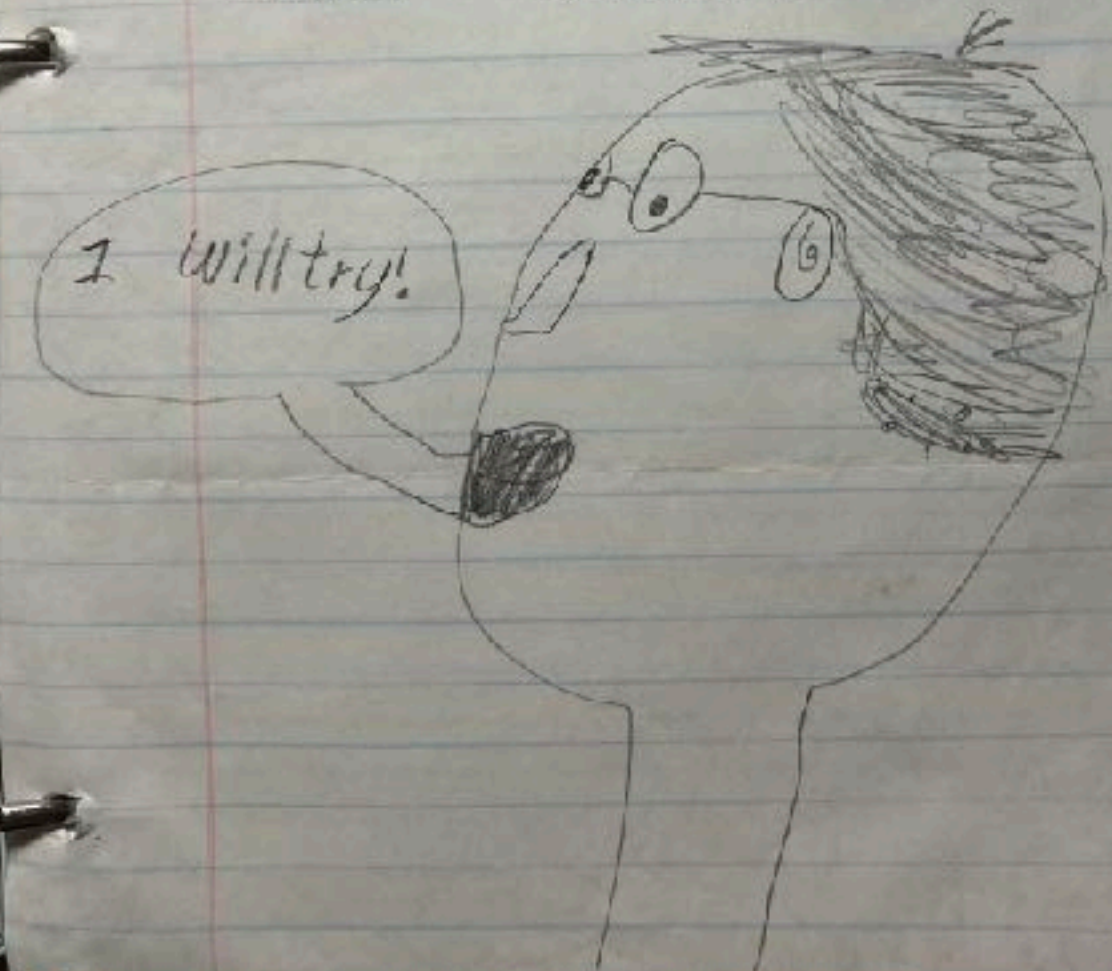


Jason Phillips, a third-grader at Palmer Elementary School, talked to schoolmates about donating money to help save Palmer Lake. To date, his fundraising campaign has generated \$212.80.

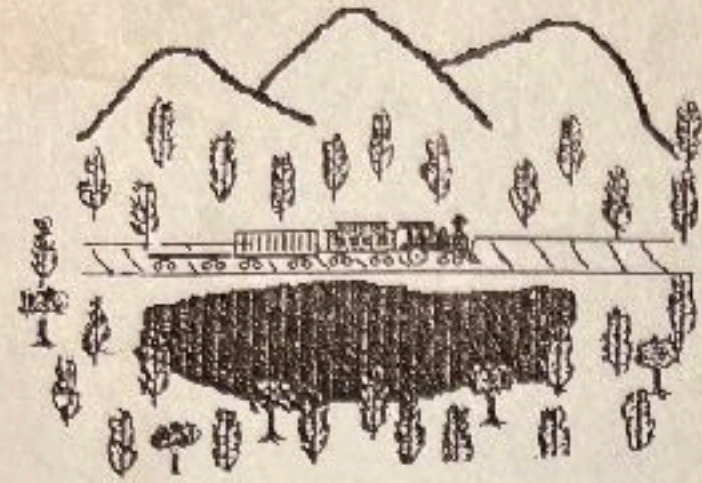
10/25/95 ★

Dear Jason,

I want to be in your comity. I will try to arrange for the meetings. I can make lots of posters. I will work hard. I'll try to get money. I want to save the Lake! franscoeb



*Formation of the
Kid's committee
October 1995-
May 1996*



Palmer Lake Elementary School has started a SAVE THE LAKE KID'S COMMITTEE to raise money for Palmer Lake. We are working hard at many fund raising activities in the community and in our school to help save the lake.

The lake is in danger of drying up completely. At this time the lake is approximately four feet deep at its deepest point. In order for fish to survive, the lake needs to be 14' deep. The town has formed its own restoration committee and with the help of the Corps of Engineers, various grants, private donations and fund raising efforts such as this, the goal is to raise \$200,000. The intent is to drain the lake, then remove the sediment with excavating equipment. The excess dirt will be taken to the South end of the lake, leveled and possibly made into future ball fields for the community. The lake will then be restored to its natural beauty by filling it to its maximum level with a depth of 14' in the center of the lake.

The Kid's Committee is determined to give their best efforts to help in this cause. Our goal is to raise at least \$2,000. The lake is often used by all of us for field trips and recreation. It is an important part of our town's history and we want to do everything we can to help preserve that history.

Please help us by donating to this great cause. We have set Save the Lake cans at various businesses in the community who have been kind enough to support our effort.

Feel free to call the school at 488-4760 for further information on our fund raising efforts.

THANKS FOR YOUR SUPPORT!

SAVE THE LAKE KID'S COMMITTEE
PALMER LAKE ELEMENTARY SCHOOL

**Save the Lake Kid's
Committee**

Jason Phillips, Chairperson	4th gd
Ashley Ahlene	4th gd
Von Ahlene	2nd gd
Caleb Amesbury	3rd gd
Ben Barrett	3rd gd
Seth Harper	5th gd
Donika Lucero	2nd gd
Jacques Mailloux	4th gd
Austin Phillips	2nd gd
Regina Primavera	5th gd
Justin Sardi	4th gd
Casey Scott	2nd gd
Justin Scott	4th gd
Sarah Talaba	5th gd
Mike Worley	4th gd

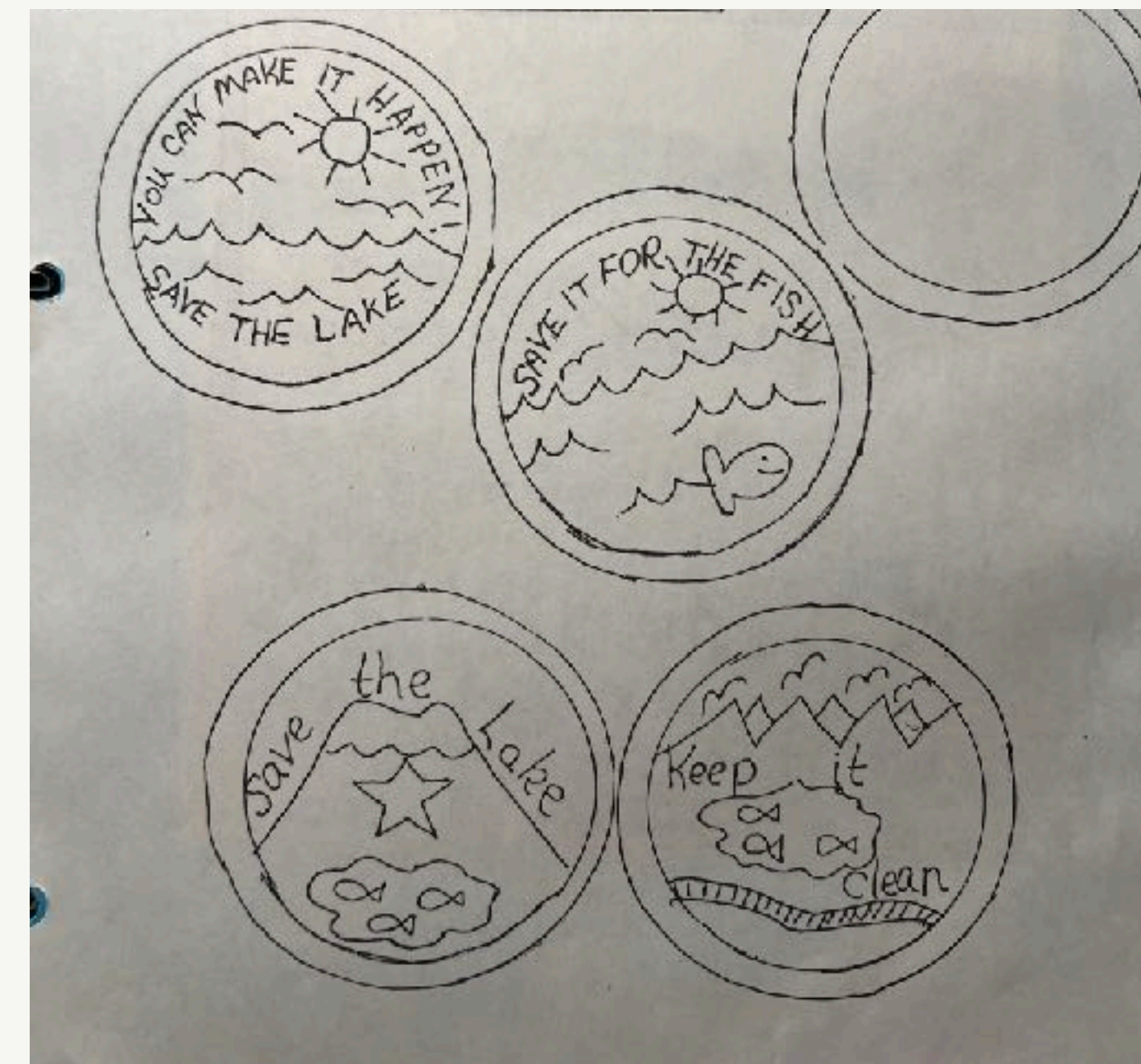
Early Fundraisers

T-shirt Sales

Local Restaurant Partnership

Button Sales

Class fundraiser coffee cans



STATE OF COLORADO

COLORADO STATE PARKS

1313 Sherman Street, Room 618
Denver, Colorado 80203
Phone (303) 866-3437
FAX (303) 866-3206



January 31, 1996

Jason Phillips
P O Box 1085
520 Columbine
Palmer Lake, CO 80133

Koy Romer
Governor

James S. Lochhead
Executive Director/
Department of
Natural Resources

Laurie A. Mathews
Director/
Colorado State Parks

Dear Jason,

Your letter to Governor Romer regarding the Lake at Palmer Lake was forwarded to Colorado State Parks.

Colorado Board of Parks
and Outdoor Recreation

Kathleen M. Farley
Chairman

Clark L. Scriven
Vice Chairman

Peggy E. Mortario
Secretary

Patricia B. McCleam
Member

James M. Robb
Member

Colorado State Parks does not have jurisdiction over the Lake, so we are not the agency you need to work with. I was impressed, however, with all the work and dedication you have shown for this project. It certainly sounds worthwhile.

It is my understanding that the Lake is owned by the city of Palmer Lake and that El Paso County Parks leases the trailhead and the surface water for recreation. I am returning your letter for you to pass on to the Town Council, Mayor or other official in your city. They might look into the possibility of applying for Lottery funds to help save the lake.

You also might consider writing a letter to the editor of your local newspaper to generate some support.

I wish you success. You are a thoughtful and industrious person, and I am sure you are learning valuable lessons as you pursue your goal.

Sincerely,

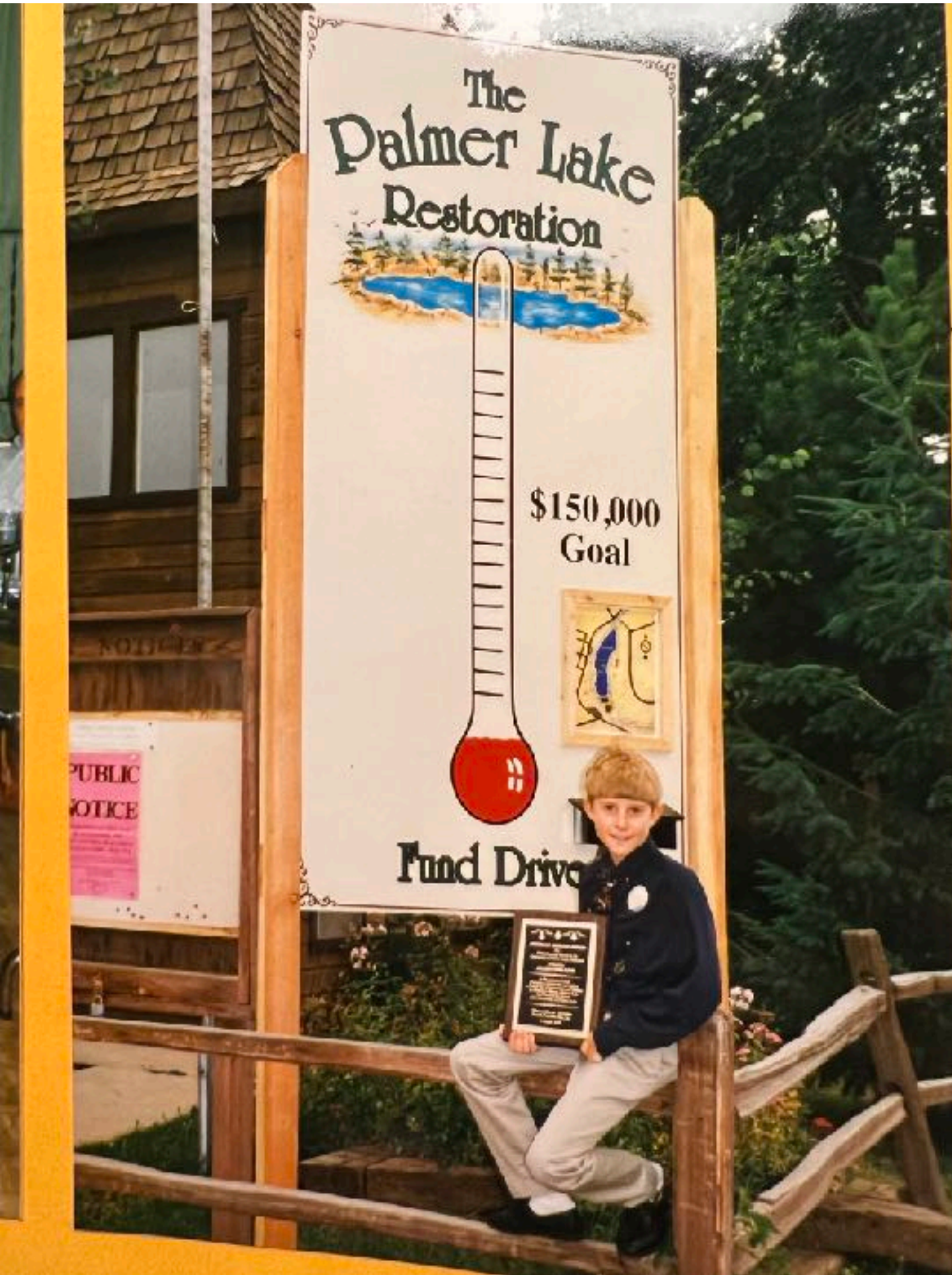
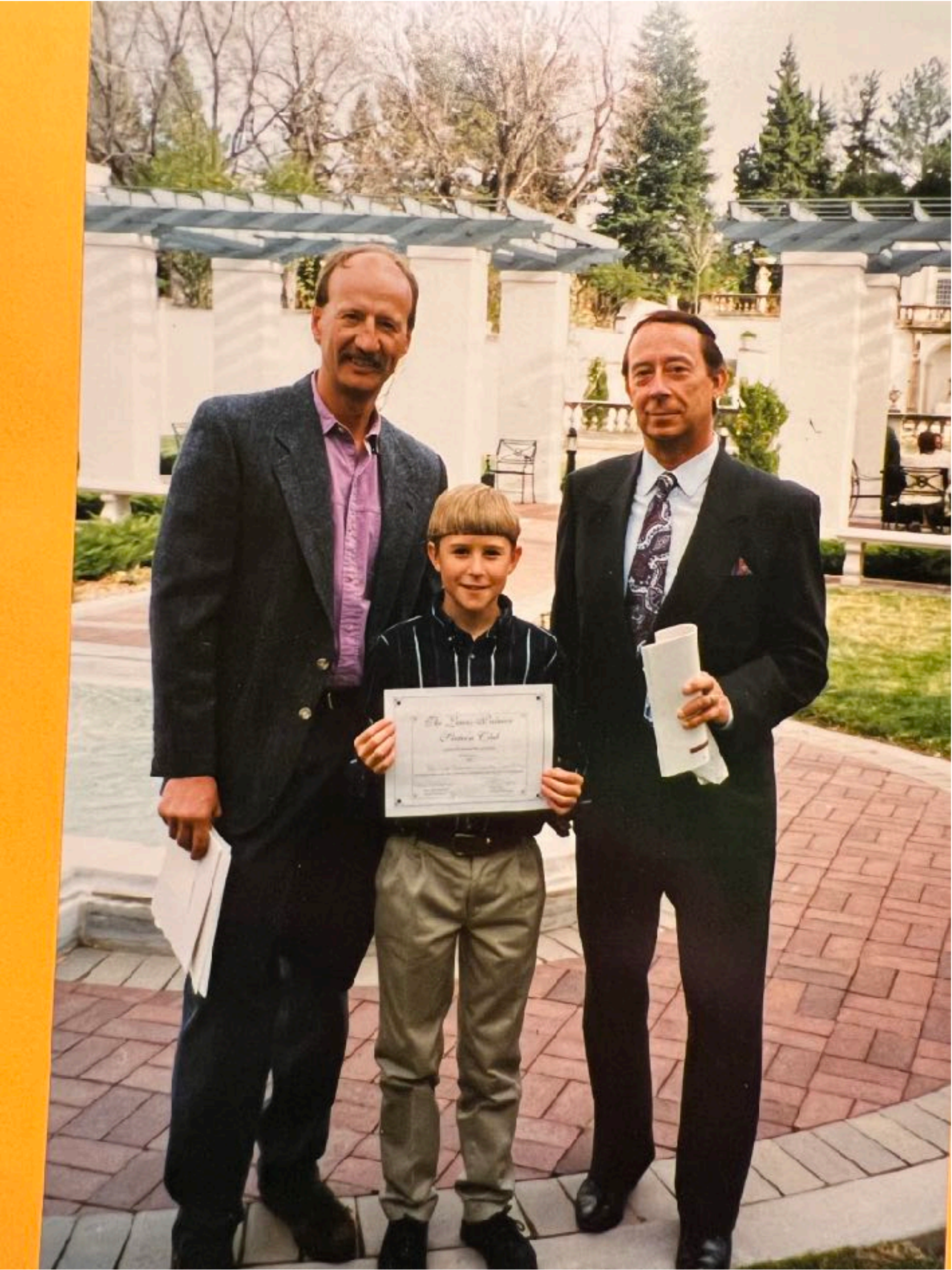
Jane Burns
Jane Burns

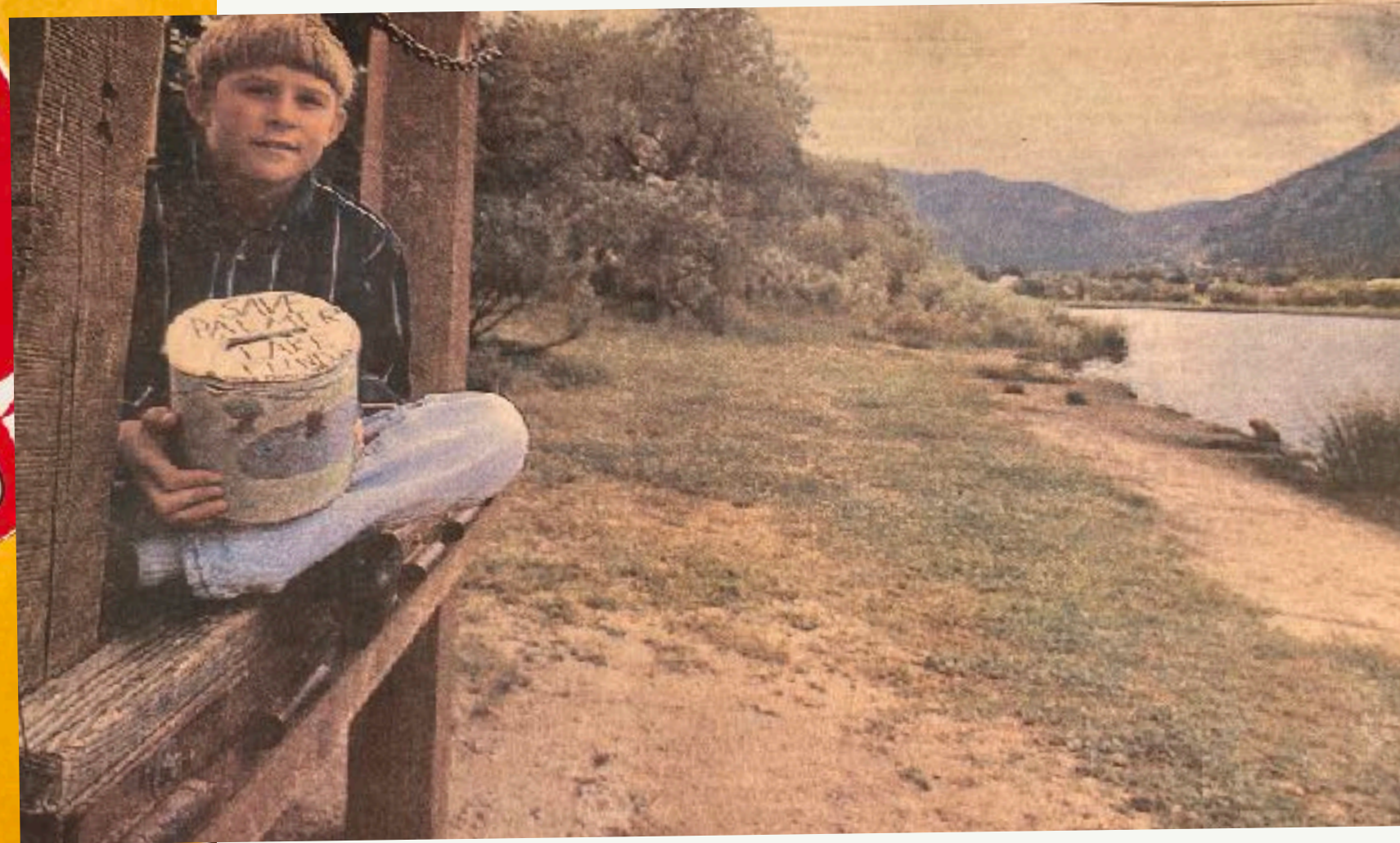


Formed Palmer Lake Restoration Committee

Kurt Ehrhardt, Dale Platt, Dick Allen

1995





National Geographic, Pizza Hut

Kids Hall of Fame Winner

Vol. 33 No. 25 June 19, 1997 • Monument, CO (USPS 418-960)

Palmer Lake gets \$75,000 state grant

By LYNNETTE JACKSON
THE TRIBUNE

A third time was a charm for the Palmer Lake Restoration Committee.

On its third try for a grant, the committee received \$75,000 from the Colorado Division of Wildlife. The money will pay for deepening the lake and area beautification.

"The deciding factor in winning the grant was that we had so much community support," said committee secretary and treasurer Richard Allen. "It was very complimentary and impressed them."

Thus far, the community has raised \$43,000 to restore the lake through individual, civic organization and business contributions ranging from \$5 to thousands of dollars.

Allen said some older residents

its present depth of 2 1/2 feet to 12 feet.

The increased depth will allow year-round fishing opportunities. Currently the lake will not support fish during the winter and during the summer when its temperature increases enough to cause rapid growth of algae and other plants.

Allen said the lake's east shore will be leveled soon.

This summer, workers will discontinue their digging, but the DOW will stock the lake with put-and-take fish — fish meant to be caught within a couple days of their introduction.

Originally the Palmer Lake Restoration Committee divided the restoration into three stages costing \$50,000 each.

Since then, the committee has decided the final stage — the building of a sports complex at the lake's south end, is too big to handle. Committee members decided to

Dirt piles from the dredging operation will so
Palmer Lake

ANTO R LA PLE CAT

It was very complimentary and impressed them'...Richard Allen discussing how town support swayed the Division of Wildlife to approve the grant.



In 1997 Town was finally awarded a Grant from Colorado Division of Wildlife for \$75,000

Efforts from Save the Lake Kids Committee raised over \$10,000 in those 4 years

Current Water levels



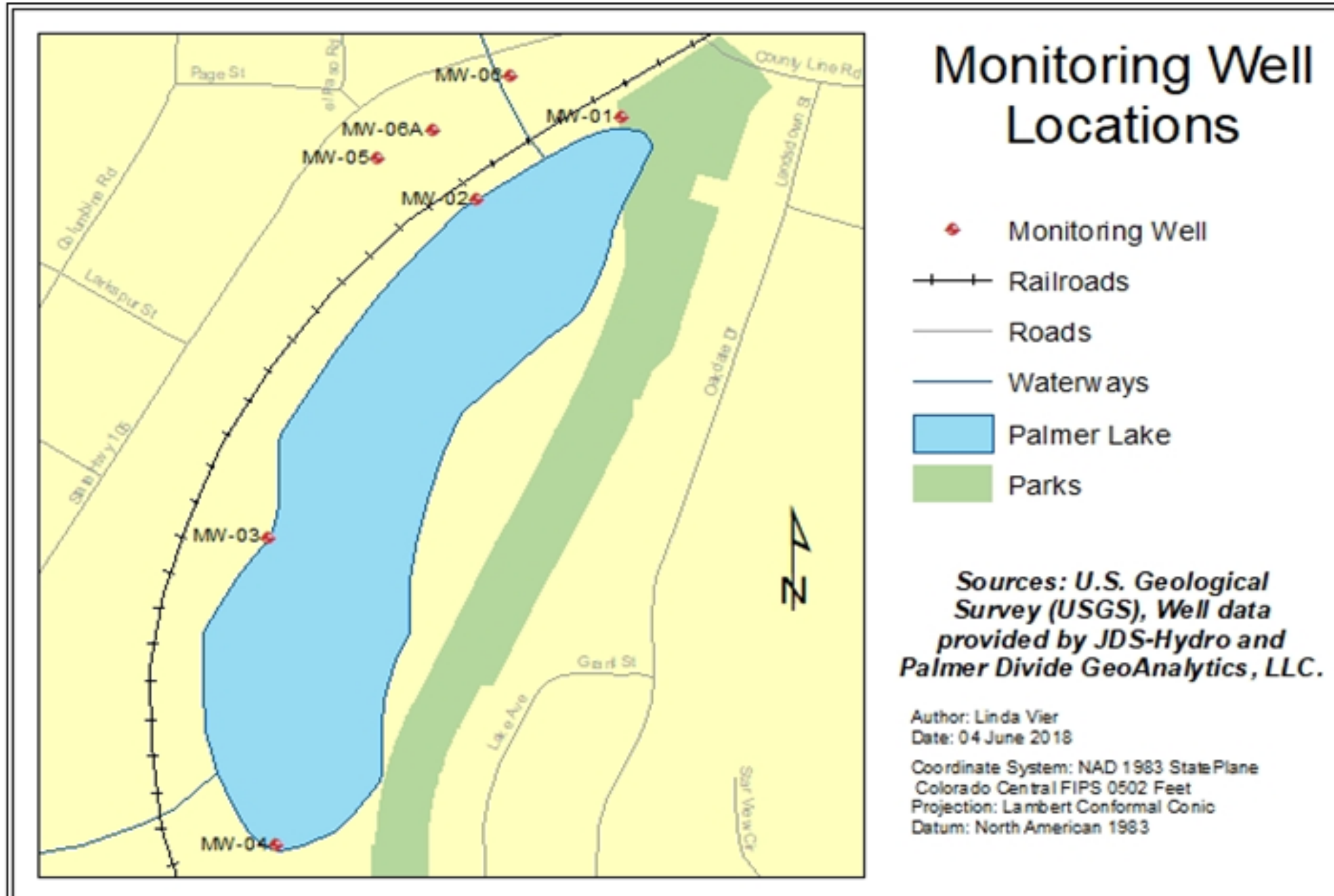
Palmer Lake

Monthly Hydrologic Inspection & Climatic Recordings

Date: 3 December 2022

Inspector: Linda Vier

Well ID	Surface Elevation (ft.)	Depth Reading (ft.)	Water Level (ft.)	Lake / Reservoir	Water Level	Wx Recordings	
MW-01	7221.863	10.200	7211.663	Palmer Lake (ft.)	7218.040	Avg. Temperature (°F)	33.37°
MW-02	7225.332	8.000	7217.332	Staff Gauge (ft.)	N/A	Avg. Humidity (%)	55.9%
MW-03	7224.953	8.300	7216.653	Surface Temp. (°F)	28.3°	Avg. Wind Speed (mph)	5.59 mph
MW-04	7225.435	9.800	7215.635	PL Surface Area (ac)	9.32	Max. Gust (mph)	32.31 mph
MW-05	7228.311	13.200	7215.111	PL Volume (af)	32.73	Precipitation (in.)	0.54"
MW-06	7233.000	16.200	7216.800	Lake Evaporation (af)	1.01		

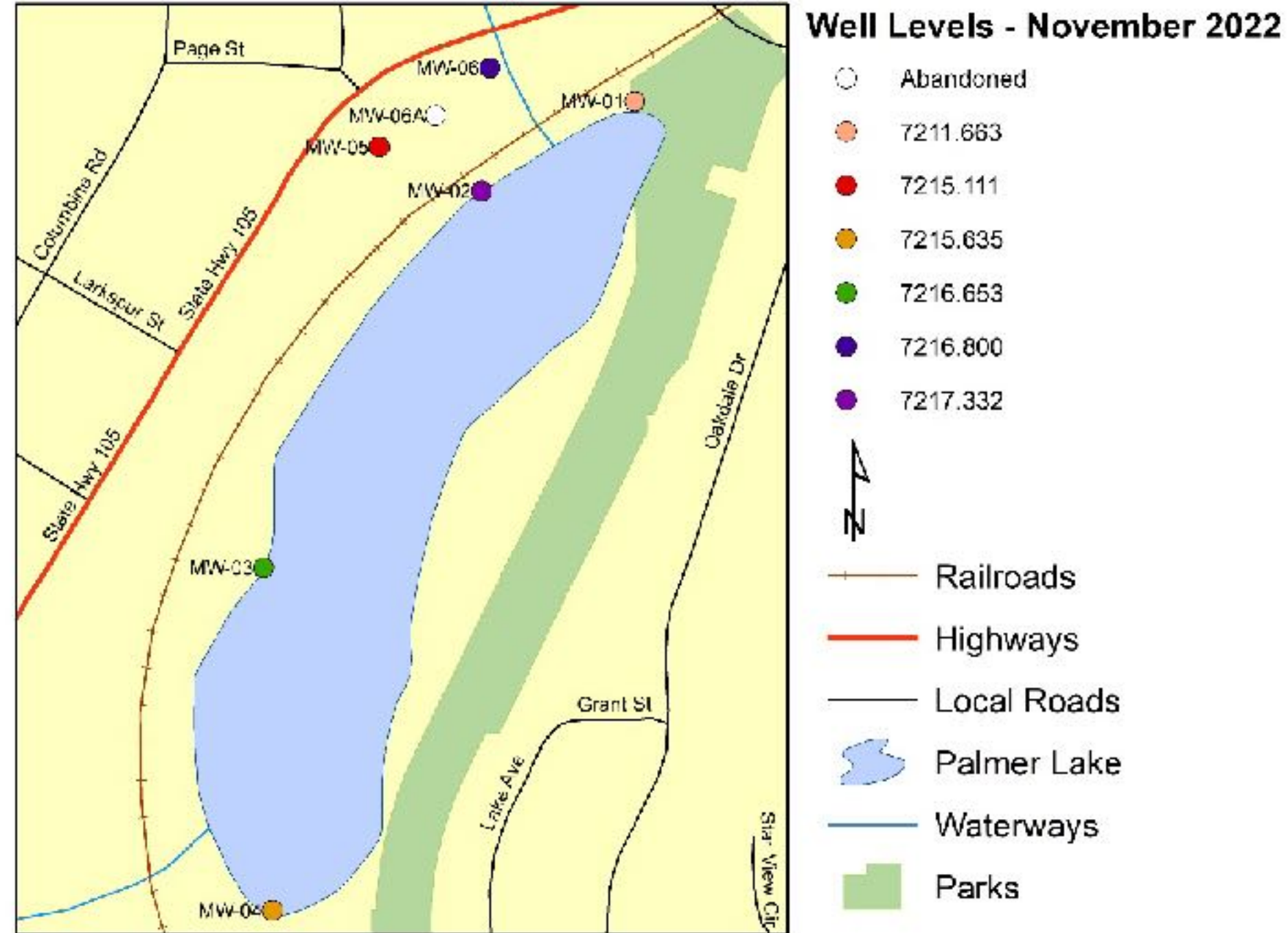


Notes:

There were four rain events for the entire month resulting in 0.10" of precipitation. There were three measurable snow events for a total of 8.05" and 0.44" of precipitation. The combination of rain and snow events provided a total of 0.54" of precipitation. This is lower than the normal total of 0.76".

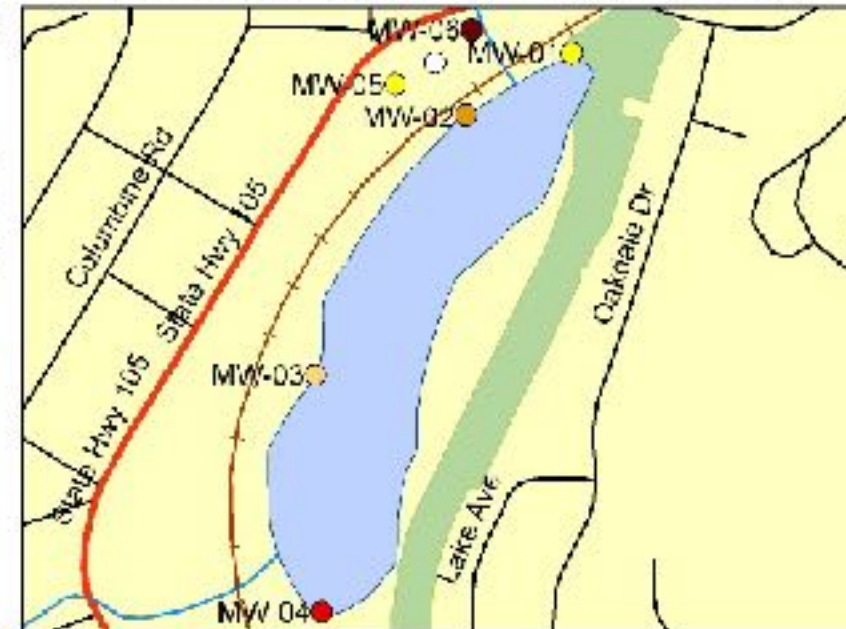
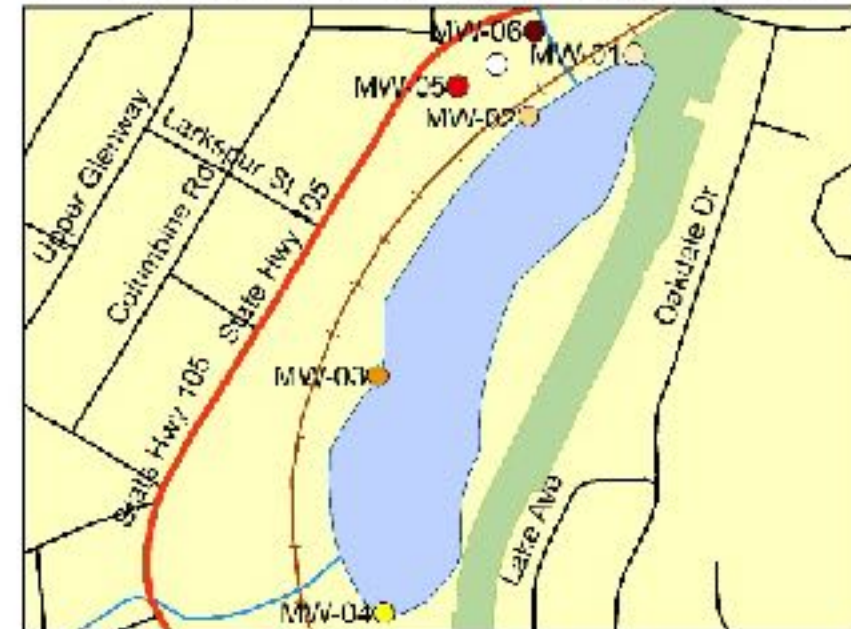
******The lake level was calculated by averaging MW-02, MW-03, and MW-04 and adding 1.5 feet. This addition takes into account the amount that the average was below the staff gauge measurement taken prior to staff gauge installation.

Monitoring Well Inspection



Previous Month Change (in ft.)

Previous Year Change (in ft.)



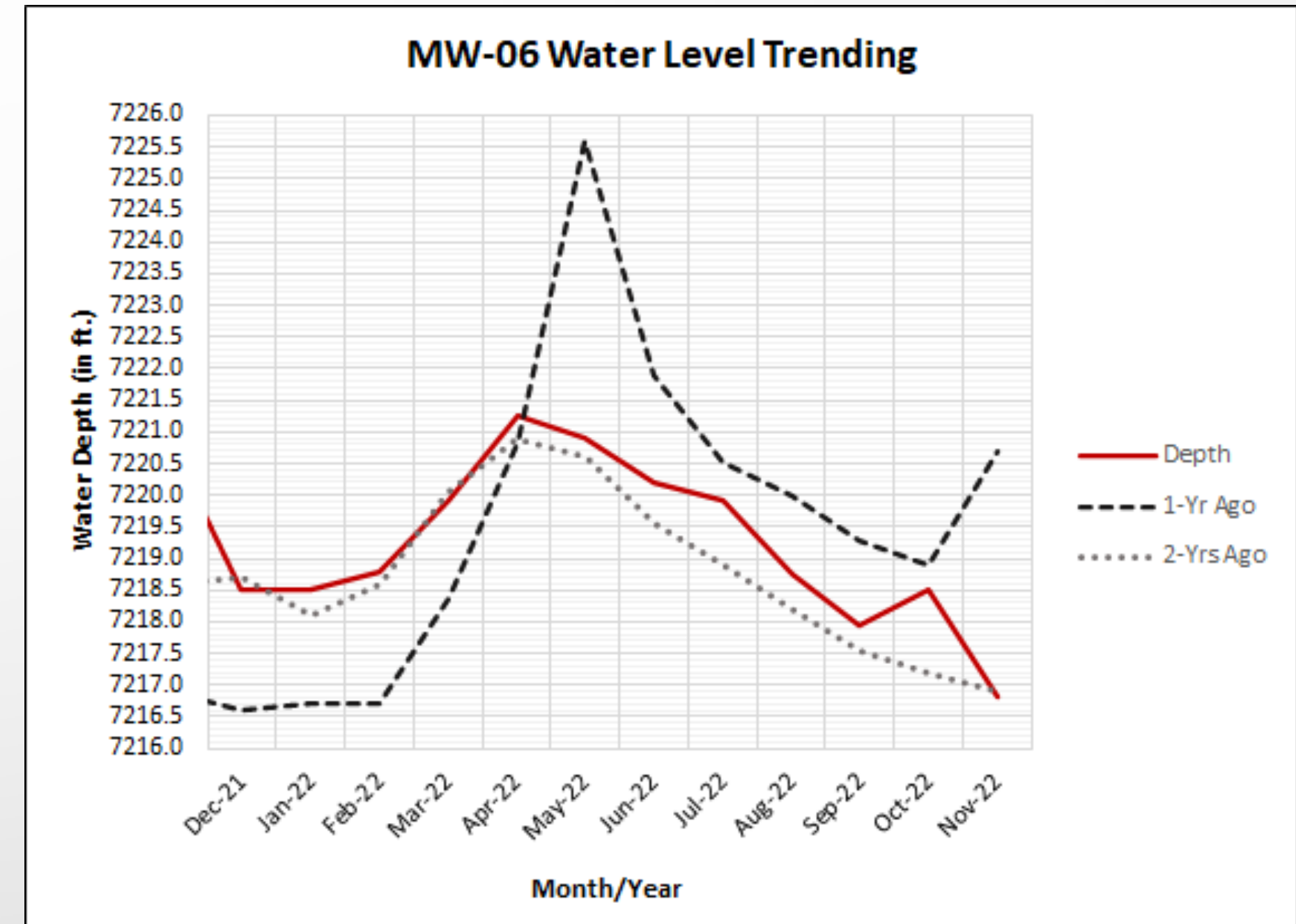
Monthly Change from October 2022

Yearly Change from November 2021

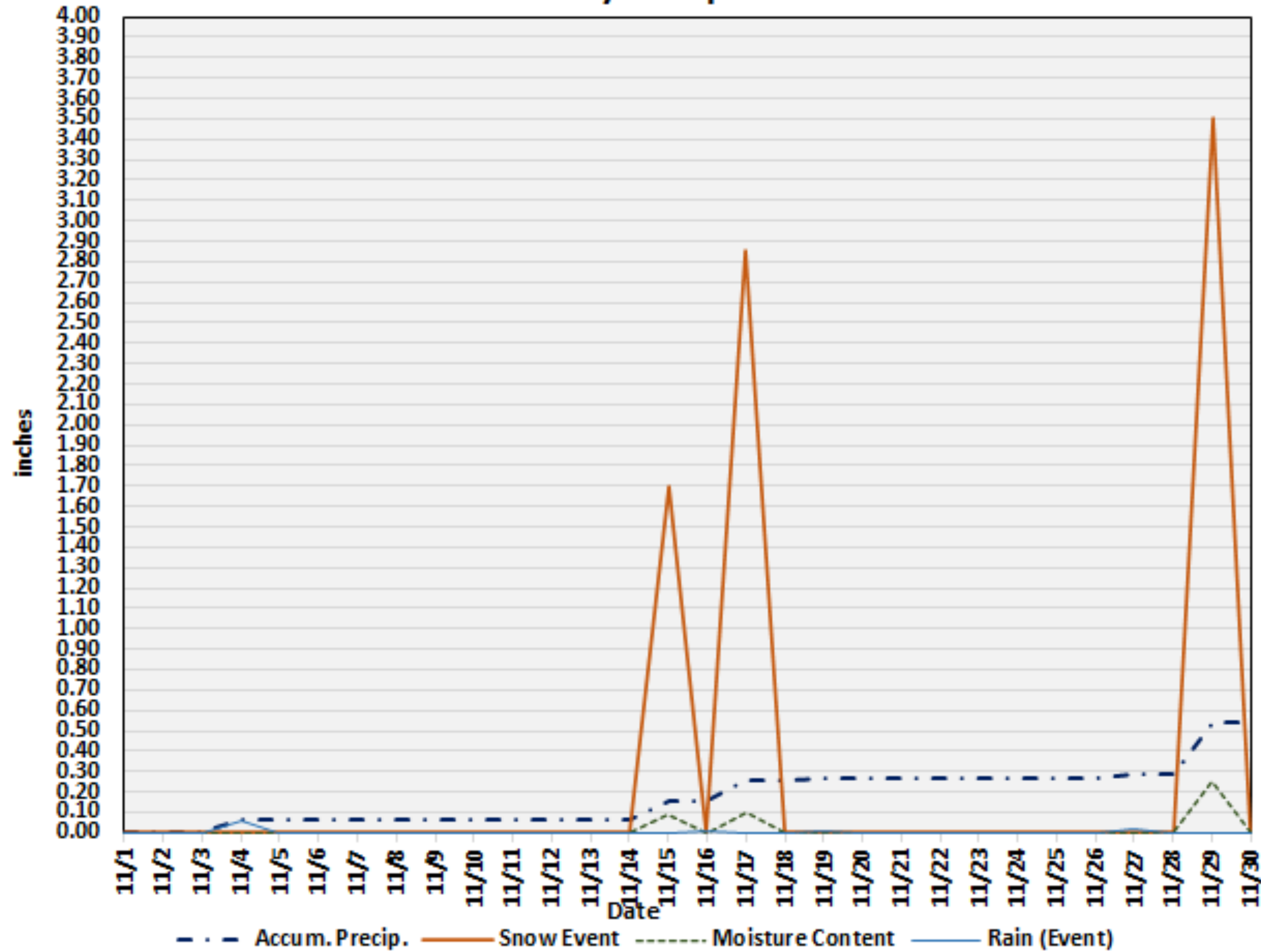
- Abandoned
- -1.700
- -1.500
- -0.850
- -0.800
- -0.550
- -0.500

- Abandoned
- -3.900
- -1.800
- -1.600
- -1.400
- -1.300

MONITORING WELLS



Daily Precipitation



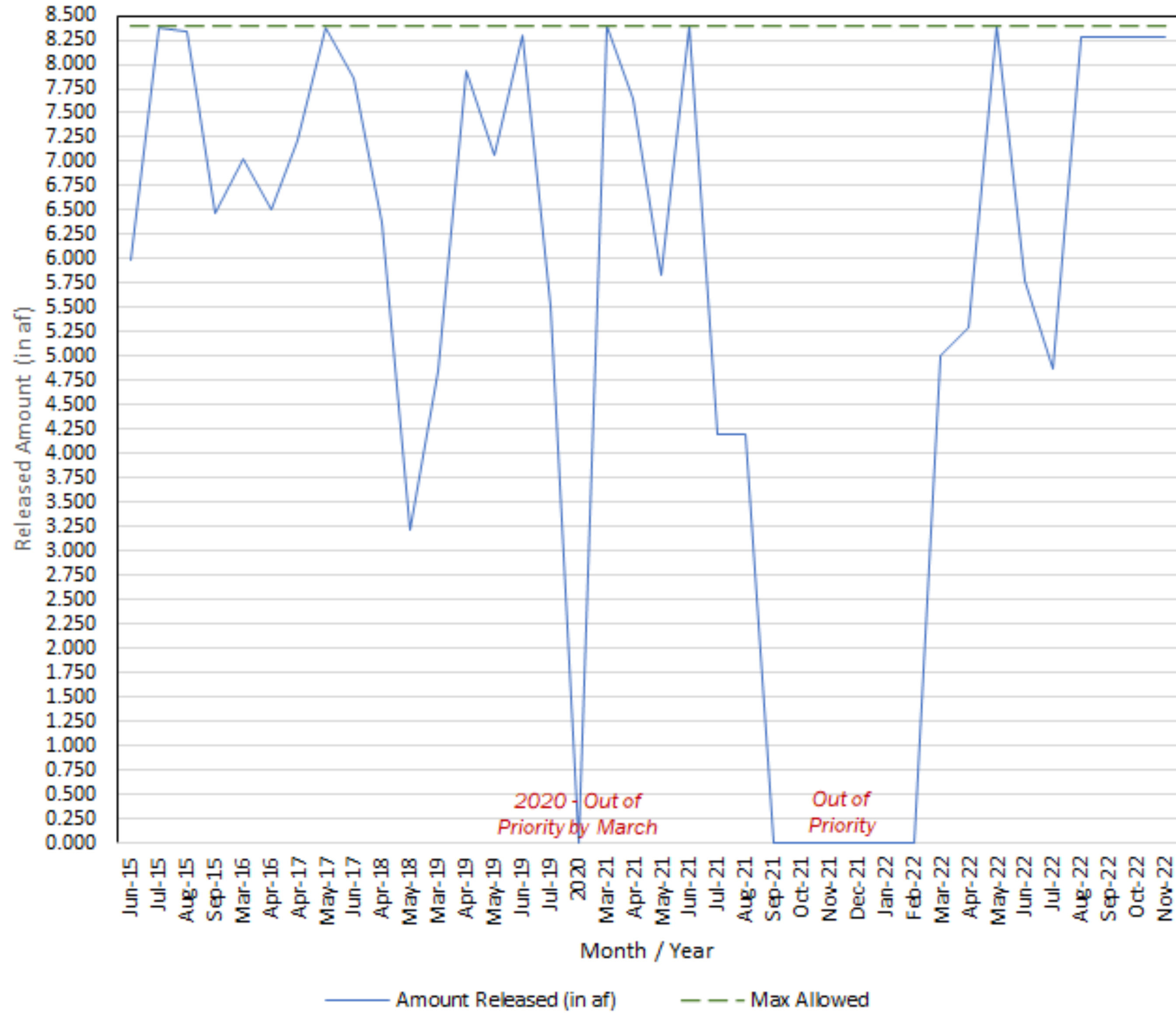
November Precipitation (Rain & Snow) Events

Event Date	Snowfall (in.)	Moisture (in.)	Gallons/ft ²	gallons	af
4-Nov-22		0.06	0.03738	19272.30265	0.442431
15-Nov-22	1.70	0.09	0.05607	28908.45397	0.663647
16-Nov-22		0.01	0.00623	3212.050442	0.073739
17-Nov-22	2.85	0.10	0.0623	32120.50442	0.737385
19-Nov-22		0.01	0.00623	3212.050442	0.073739
27-Nov-22		0.02	0.01246	6424.100883	0.147477
29-Nov-22	3.50	0.25	0.15575	80301.26104	1.843463
Totals	8.05	0.54	0.33642	173450.7238	3.981881

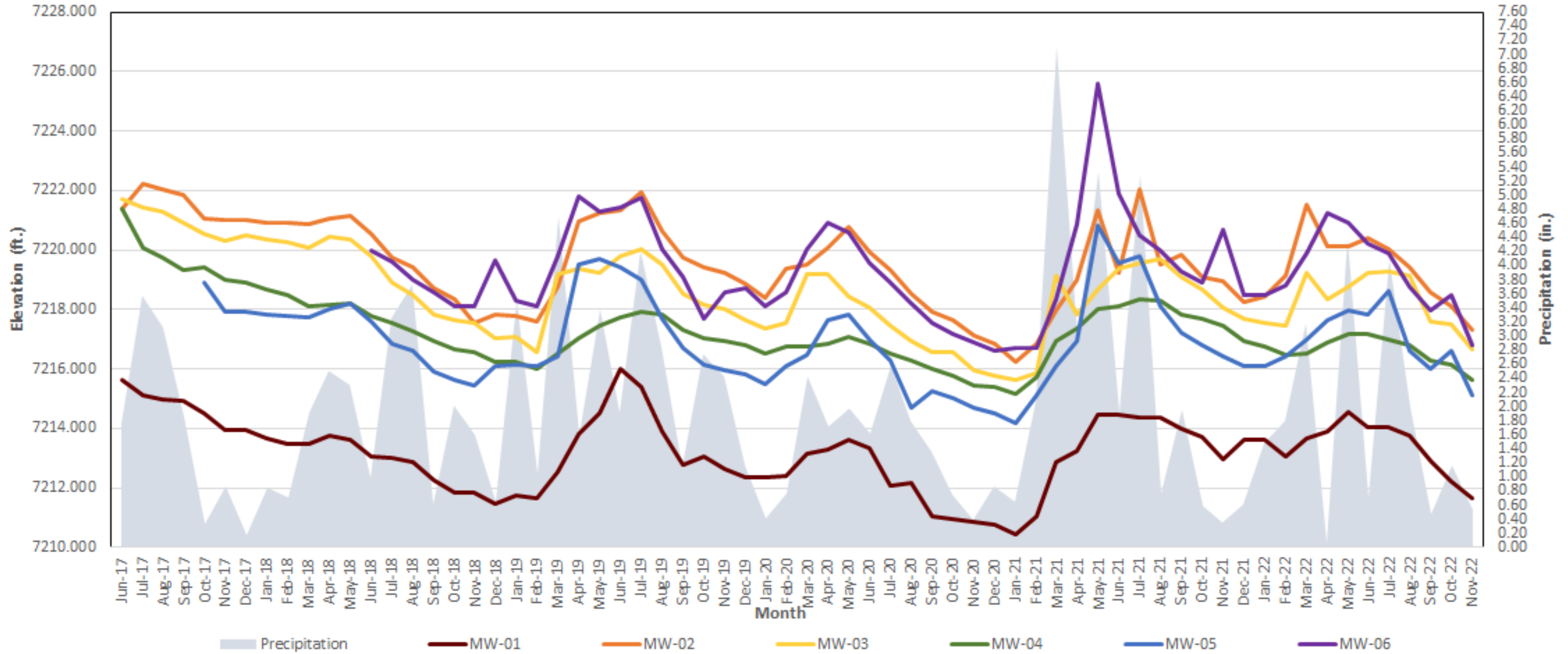
Notes:

- One inch of precipitation produces 0.623 gal in an area of 1 ft²
- Full lake elevation is assumed to be 7,222 ft. with a surface area of 515,577.92 ft² and volume of 75.18 af
- Calculations do not take into account run-off to lake from surrounding area.

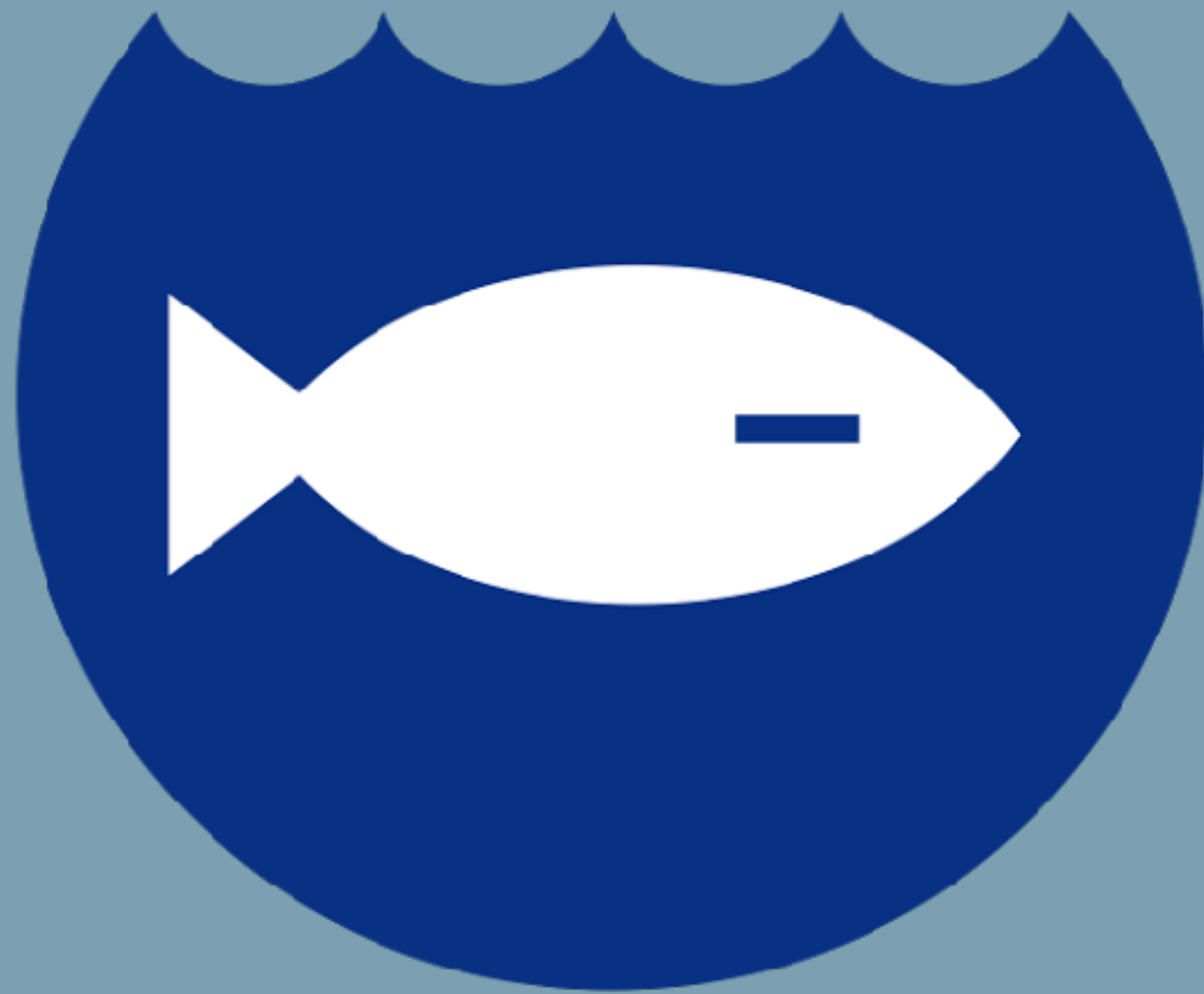
Released Water to the Lake



Lifetime Well & Precipitation Trending



Awake



the Lake

Presented by
Jeff Hulsmann

Palmer Lake is one of the highest natural spring fed lakes in the country.



It has no natural outlets



1999 was a
very wet, near
record year

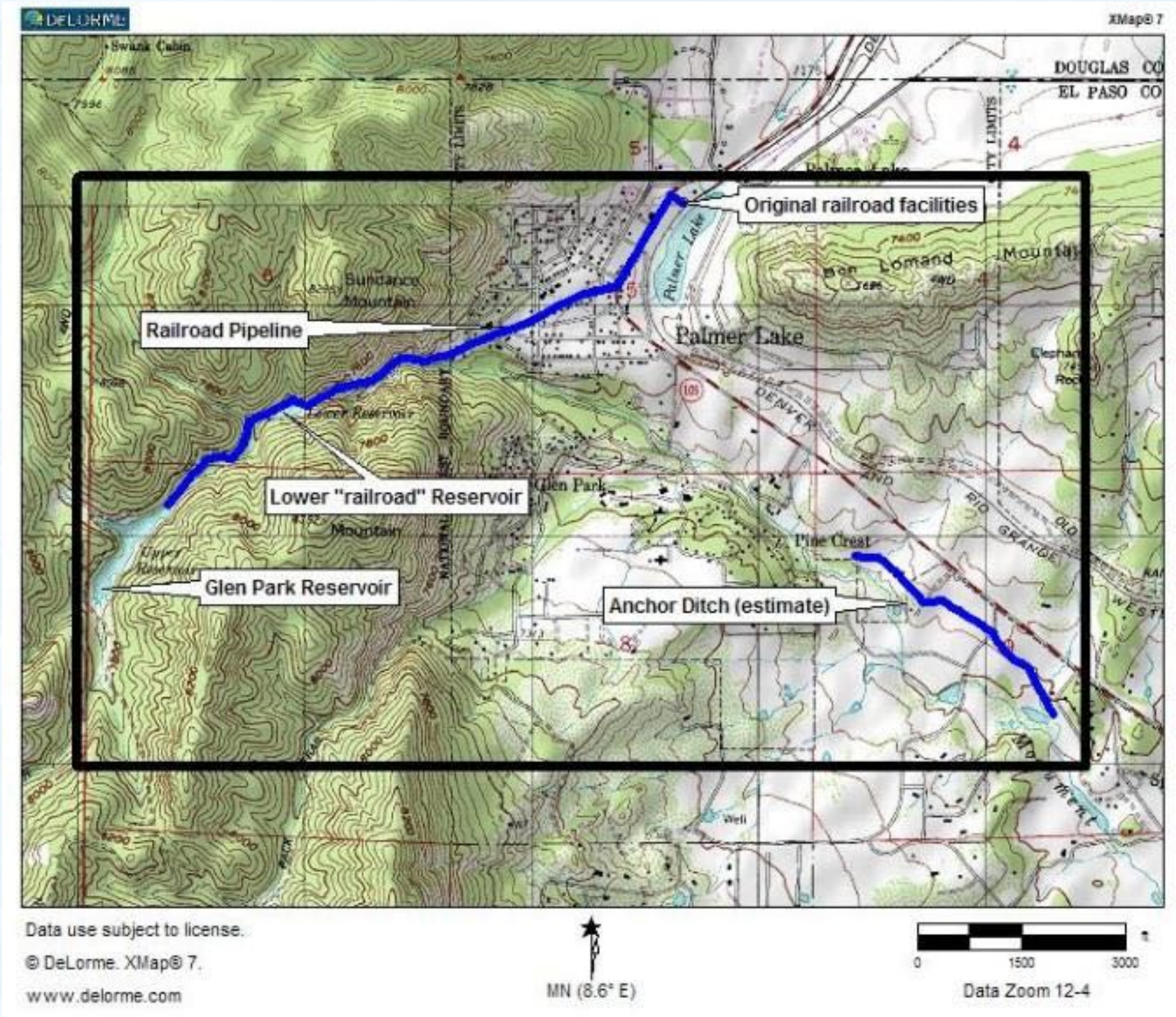


Record Drought
begins in
2002-03 Palmer
Lake is still pristine.

Why?



The Town of Palmer Lake had historically been adding a portion of the senior Anchor Ditch water right, diverted from Monument Creek, to the Palmer Lake to keep it full in times of drought.





The railroad diverts the only natural source of inflow to the Palmer Lake north into the West Plum Creek.

Palmer Lake NW tributary - 1999

Write a description for your map.

Legend

Palmer Lake



Underground stream

Google earth

Image U.S. Geological Survey

600 ft

N

DWR stops the town's “decades-long” use of the RR Anchor Ditch water right.



Second Record-setting
wave of drought hit in
2011-13.

The Lake stayed nearly
empty, from 2012 through
2015

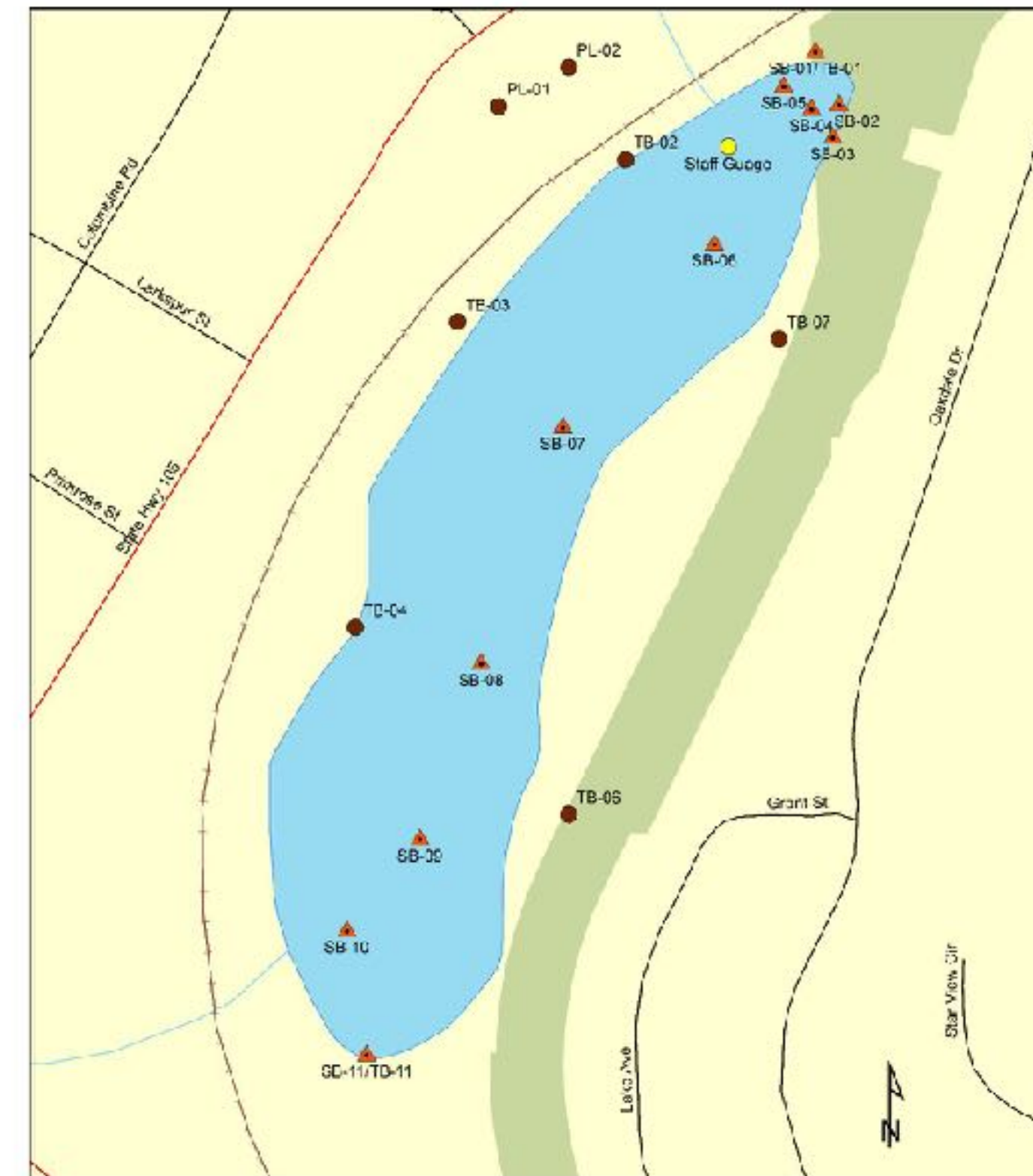


The Lake Goes Dry



ATL took advantage of the empty Lake to drill monitoring well holes

Borehole and Soil Survey Locations



▲ Soil Survey	— Roads
● Borehole Only	— Waterways
● Staff Gauge	■ Palmer Lake
— Railroads	■ Parks
— Highways	

Sources: U.S. Geological Survey (USGS),
Well and borehole data provided
by JDS-Hydro.

Coordinate System: NAD 1983 StatePlane
Colorado Central FIPS 5002 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983

Author: Linda Viter
Date: 7 May 2017

Volunteer geologist
Pat Duby and I rented
a “push drill rig” for the
day. We had a late
snowstorm but
persevered!



Due to the efforts of Awake
Palmer Lake's Chris
Cummins, our volunteer
water lawyer,
in 2013 the Town filed a
change of water rights
application



In 2014 volunteer Doug Schwenke from JDS Hydro, UCCS student-volunteers and professor George Bolling develop a Preliminary report on the Lakes hydrology/ Geology



In December 2014 excavation to remove nonnative soil and sediment begins



2015 – The Lakes historical footprint is restored!



In 2016 the Town obtained a decree for
this change



What does the future hold from a legal standpoint?

- We have established the “natural” status of Palmer Lake with the DWR.
- The Town has succeeded in securing a supplemental source of fill through the Anchor Ditch

What remains to complete legally?

- To continue to explore the potential to restore the Lake's sole source of natural inflow at the northwest corner, reclaiming this source of supply for the Lake



What remains to complete legally?







Fundraising Efforts



AWAKE THE LAKE PRESENTS

THE PALMER LAKE
5K
(YES, POINT 5K)

"THE RUN FOR THE REST OF US"
PALMER LAKE, CO
ELEV 7,297'



PALMER LAKE FUN RAISERS: PRESENT

RED, WINE & BLUE

TICKETS ARE LIMITED
ADULTS 21 AND UP

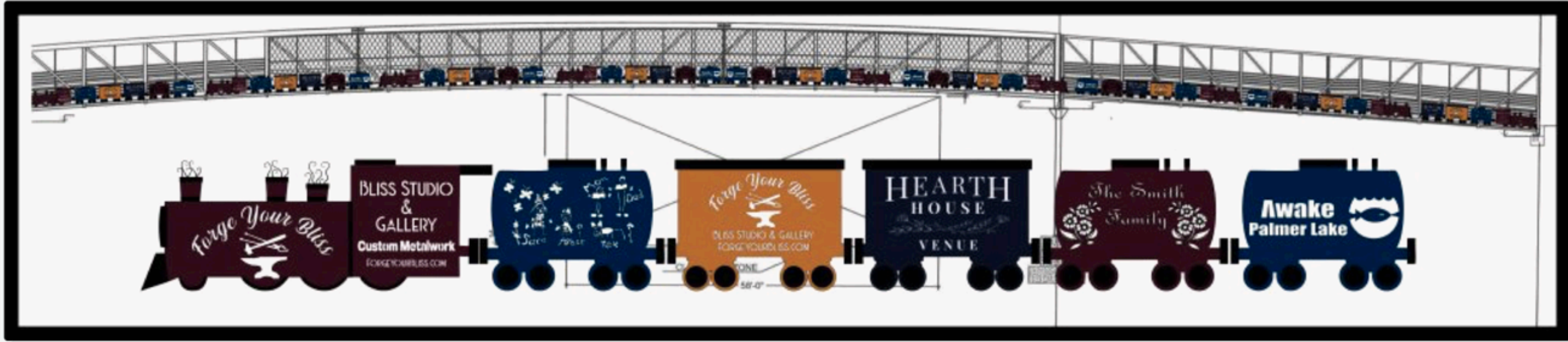
BBQ

CASH BAR
DINNER & DANCE \$20

INDOOR/OUTDOOR EVENT

DANCE FOR THE FIREWORKS

BRIDGE TRAIN ART FUNDRAISER



Family - Businesses - Celebrations - Legacy

Sponsor your own Locomotive, Box Car, Caboose, or Box Square



Current State of the Lake

- Lake is very low
- Seeking solutions
- How do we fix it?



Get involved!

www.awakepalmerlake.org

Video

Awake



Palmer Lake

Thank you!