THE WEST BENEATH THE SURFACE:
NATURAL GAS DEVELOPMENT IN THE BIG PICTURE OF WESTERN EXRACTIVE INDUSTRIES
A Very Visible Subject
Rulison: An Easy Shot at Hindsight Wisdom
The Vision of the Center of the American West: Professors Race into the Field of Public Discourse!
What Every Westerner Should Know About Energy Efficiency and Conservation
A GUIDE TO A NEW RELATIONSHIP

Patty Limerick • Howard Geller
With the assistance of Jason Hanson, Claudia Puska, and Mark Ruzzin

Center of the American West  Southwest Energy Efficiency Project
Adrenaline Escalation in Adventures In Applied History: The National Science Foundation Sustainability Research Network Grant, 2012-2017

Report from the Center #5

Making the Most of Science in the American West: An Experiment

Patricia Nelson Limerick • Claudia Puska

Center of the American West | University of Colorado at Boulder
WHAT DO WE WANT?!

RESPECTFUL DISCOURSE.

WHEN DO WE WANT IT?!

NOW WOULD BE

AGREEABLE TO ME,

BUT I AM INTERESTED

IN YOUR OPINION.

Turning Hindsight Into Foresight™
The Shale Gas Revolution of Our Times
Drilling rig, Central Arkansas  Arkansas and Rockies—Resource Kinfolk?
Shale Plays

Turning Hindsight Into Foresight™

Shale Gas Production 2007-2011

Has increased more than fourfold since 2007.

More than 75% of the gas has been produced from Barnett, Marcellus, Fayetteville, and Haynesville.
Arkoma Basin:
Fayetteville Shale, Mississippian, dry gas, development starting in early 2000s, largely rural

Turning Hindsight Into Foresight™
Denver-Julesburg Basin

Wattenberg Field, Cretaceous, Codell, Niobrara, Muddy “J” Sandstones and Limestone/Chalk, oil & gas, boom since early 2000s, increasingly suburban

Weld County alone has more than 18,000 oil and gas wells
Arkansas Response: ArkansasFracking.org

"While we maintain our goal of a temporary moratorium on hydraulic fracturing in Arkansas, we feel that our original name [StopArkansasFracking] does not express our group’s intentions. The name has led many people to assume that we are asking for a permanent ban. We are currently asking for a temporary shutdown until more study is done and proper regulations are in place. We will continue to raise public awareness, as well as advocate for this moratorium and better regulation of the industry.”
Environmental Concerns & State Regulatory Action

COLORADO
• Fracturing fluid disclosure (2011)
• Baseline groundwater monitoring (2012)
• Drilling “setback” distance from houses and schools (2012)

ARKANSAS
• Fracturing fluid disclosure (2010)
• Groundwater sampling by USGS (2011)
• Moratorium on deep injection due to seismicity (2011)
Arkansas Response

“I think people are getting comfortable... they’ve become real comfortable with the shaking,” Dirk DeTurck told the New York Times, after unsuccessfully organizing an earthquake preparedness meeting in early 2011.
Boulder County Response

Protesting in Longmont, fall 2012.
Boulder Daily Camera.
Denver-Julesburg Basin
(Wattenberg Field)

Image credits: Adrianne Kroepsch, Center of the American West and Ed Andrieski, Associated Press
Rifle, Colorado  (Rural/Suburban Contrasts)
Marcellus Shale well site, near Waynesburg, PA:
“It’s happening in the Northeast; now it’s important!”
The Big Picture of Western Extractive Industries: Boulder’s Origins

“Always begin right where you are.”  
Thomas Hornsby Ferril, Colorado Poet Laureate
Boulder, c. 1870
Boulder, late 19th Century
Boulder oil fields a century ago
An “Odd Couple” of Policies?

Creation of a municipal utility (cutting loose from Excel Energy) and planning an energy future in which natural gas will remain a big component

Moratorium on fracking and natural gas development within Boulder City Limits

The “disconnect” between consumers and resource production moving uncomfortably toward connection?
The West Beneath the Surface

Smart people who wrote about Virginia City, Nevada, and the Comstock Lode: Dan DeQuille, Eliot Lord, and J. Ross Browne
Virginia City, Nevada
Turning Hindsight Into Foresight™
The Troubles of Mining History

Disruption of Indian people’s worlds
Racism—anti-Chinese movements and riots
Dangerous workplaces
Oppression of labor: wage cuts and too many hours
Big-time and lasting environmental damage

.... And now our speaker is planning to make a few positive comments about the history of mining?!?
Cleaning Up Abandoned Hardrock Mines in the West
Prospecting for a Better Future

Patricia Nelson Limerick • Joseph N. Ryan
Timothy R. Brown • T. Allan Comp

Report from the Center #7

Center of the American West | University of Colorado at Boulder
Resilient Humans

The robust community life of mining towns . . . .
and an equally robust clarification of my message.
Rock Springs, Wyoming
A miner’s Erie home.—Photo, Daisy Bracegirdle Swallow
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“Resilience Thinking”

“Resilience is the capacity of a system to absorb disturbance and still retain its basic function and structure.”
Brian Walker and David Salt, Resilience Thinking (2006)
Aspen—Resilience or Just Different Disturbance?
Durango smelter
A Economic Premium on an Undisturbed Surface
Butte and Montana
Old Works Golf Course, Anaconda
Milltown State Park, Montana
Turning Hindsight Into Foresight™
Bingham Canyon, Utah (The Evening’s Speaker Made Possible)
Time for Some Montana Reading?
And Now for Something Completely (?) Different: The West and the Suburb
Highlands Ranch, Colorado
Derricks in Los Angeles 1896

Lessons on Urban/Industrial Coexistence: Awaiting Harvest?
Suburban Neighbors with Complicated Origins
Denver-Julesburg Basin
(Wattenberg Field)

Image credits: Adrianne Kroepsch, Center of the American West and Ed Andrieski, Associated Press
Lafayette Coal Mine, Colorado  Turning Hindsight Into Foresight™
Turning Hindsight Into Foresight™
Baseline Mine subsided in 2007 under Bonanza Drive; fourth and final treatment begins Thursday
By John Aguilar Camera Staff Writer Boulder Daily Camera

Erie's deep, dark history just won't let go of this town on the border of Boulder and Weld counties.

Starting Thursday, state mining officials will bring heavy equipment to Erie for a fourth and final time to shore up a 116-year-old mine that collapsed 60 feet underground, cratering and closing a segment of Bonanza Drive in 2007.

Al Amundson, project manager with the Colorado Division of Reclamation, Mining and Safety, said his crews have been back to the site twice since the collapse of the Baseline Mine -- in 2009 and 2011 -- to inject grout into the abandoned tunnel. The work that begins Thursday and lasts through most of February should shore up the mine once and for all.

"We'll drill down to the mine floor and grout as we come up," he said. "We'll be drilling 10 to 12 holes and each hole can take between one day and three days to grout."

Amundson expects that anywhere from 500 to 1,000 cubic yards of low-slump grout -- a mix of cement, water and sand -- will be injected into the mine during the six-week project. He said about half of the northbound lane on Bonanza, between Piper and Sunset drives, will be blocked during the job, but the work site shouldn't pose much of a problem for motorists on the lightly traveled road.

The state will have spent around $1.2 million dealing with the subsidence of the Baseline Mine, which operated from 1896 until 1942, when it wraps up its work next month, Amundson said. The money comes from a statewide coal severance tax fund.
Conclusions

History is most fulfilling when it shows us a multitude of meanings, demands more questions of itself, and compels us to read it from as many angles as we can.

Elliott West, The Essential West
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