ENVIRONMENTAL ENGINEERING NEWSLETTER 16 FEB. 2015

This week's edition includes:
If you need older URLs contact George at ghh@att.net.
Please Note: This newsletter contains articles that offer differing points of view regarding climate change, energy and other environmental issues. Any opinions expressed in this publication are the responses of the editor alone and do not represent the positions of the Environmental Engineering Division or the ASME.
George Holliday
This week's edition includes:

ENVIRONMENT: A. SUCCESSOR COMPANY FACES CERCLA LIABILITY BASED ON VEIL PIERCING THEORY

On February 2, a federal district court in Oklahoma held that a successor-in-interest to company whose subsidiary had acted as its "alter ego" can be held liable in a contribution action under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) for the liabilities of that former subsidiary. In *Cyprus Amax Minerals Company v. TCI Pacific Communications, Inc.*, Case No. 11-CV-0252-CVE-PJC, the plaintiff filed suit seeking contribution under CERCLA from defendant TCI Pacific Communications, Inc. (TCI) on the grounds that TCI is the successor-in-interest to the New Jersey Zinc Company (New Jersey Zinc), whose subsidiary Tulsa Fuel and Management Company (Tulsa Fuel) had operated a zinc smelter alleged to have contributed to the contamination at issue.
TCI conceded that it is the successor-in-interest to New Jersey Zinc, so the issue before the district court on cross-motions for summary judgment was whether to pierce the corporate veil between New Jersey Zinc and its subsidiary, Tulsa Fuel, a company which was dissolved in 1926. After considering the veil piercing factors under the applicable state law (Kansas law), the court concluded that Tulsa Fuel was the alter ego of New Jersey Zinc, and that it had "no separate mind, will, or existence of its own and [was] but a business conduit for the principal." Factors that the court determined pointed conclusively toward this finding were that New Jersey Zinc had held itself out as the owner of Tulsa Fuel's stock; New Jersey Zinc's officers and directors held the same positions with Tulsa Fuel; and New Jersey Zinc had represented that it controlled the operations of all its subsidiaries including Tulsa Fuel. The court also examined representations that New Jersey Zinc had made before the Interstate Commerce Commission in the 1920s, and found that it would be a fraud or injustice to allow New Jersey Zinc to have represented that it controlled or dominated the operations of Tulsa Fuel for purposes of those ICC proceedings, but now allow TCI "to take a contrary position for the purpose of avoiding CERCLA liability."
Roger Zygmunt

B. IMECE CALL FOR PAPERS: CCS

Carbon capture and storage (CCS) is one of the technologies expected to reduce greenhouse gas emissions. Efficient, economic, and environmentally friendly solutions are always being sought. This symposium brings together the work of prominent researchers in the field with the emphasis on both CCS fundamentals and applications. Main areas of interest are 1) engineering challenges of CCS, and 2) progress made in recent years in terms of novel materials, processes and applications. Papers, extended abstracts and technical presentation are solicited in areas including but not limited to:

- CCS system - general (control, behavior, response, interaction with power generation and transmission systems, etc.)
- Gas capture (separation) from large point sources (power generation, natural gas processing, heavy industries, hydrogen production, etc.)
- Gas compression/dehydration
- CO_2 transport and transport system maintenance
- Beneficial reuse of CO_2 (e.g. enhanced oil recovery (EOR), urea application, food industry, beverage carbonation, carbonate/bicarbonate, biomass processing)
- Materials developed for CO_2 capture, separation, purification, transport, storage, and applications

Interested authors should submit a (maximum) 400-word abstract via the web tool at the Congress 2015 website. http://www.asmeconferences.org/Congress2015/
Final papers will be available on CD-ROM at the meeting.

SUBMISSION DEADLINE: March 2, 2015
See Conference website for detailed Publication Schedule
http://www.asmeconferences.org/IMECE2015/

C. OBAMA BUDGET WOULD SLASH OIL TAX BREAKS WHILE BOOSTING RENEWABLES

WASHINGTON — President Barack Obama is proposing billions of dollars in government spending to tackle climate change and boost alternative energy sources, even as he makes another plea for Congress to spike tens of billions of dollars in oil and gas industry tax breaks.
The climate ventures include a program to boost the resiliency of coastal communities that could be battered by more intense storms and a $4 billion fund to encourage states to cut greenhouse gas emissions more quickly than federal regulations require.
Posted on February 2, 2015 at 2:06 pm by Jennifer A. Dlouhy in Politics/Policy
http://fuelfix.com/blog/2015/02/02/obama-budget-would-slash-oil-tax-breaks-while-boosting-renewables/
Roger Zygmunt

D. SECRET EPA MEMO EXPOSED: HIDE THE SHIFT!

H. Sterling Burnett, The Heartland Institute
The Environmental Protection Agency is deliberately misleading the public about the basis for its efforts to restrict carbon dioxide emissions, according to a secret internal memo exposed by a Freedom of Information Act request filed by the Competitive Enterprise Institute (CEI).
According to the memo, written in 2009, senior EPA staff call for a “shift” from talking about

climate science to pretending global warming is “about our neighbor with respiratory illness.” In fact, actions to reduce carbon dioxide emissions can increase emissions of real pollutants!
http://blog.heartland.org/2015/01/memo-reveals-bogus-epa-climate-strategy/

E. A FEDERAL GAS TAX? JUST SAY NO!

Taylor Smith, for *Somewhat Reasonable*

U.S. Sens. Bob Corker (R-Tennessee) and Chris Murphy (D-Connecticut) have proposed hiking the federal gas tax by 12 cents over two years and indexing it to inflation. In a coalition letter dated January 28, The Heartland Institute and more than 50 other free-market think tanks and advocacy organizations call on Congress to reject the proposal and others like it, noting, “Not only is increasing the gas tax an ineffective way to address the nation’s transportation infrastructure needs, it would further increase the burden of government on families and business and would disproportionately hurt lower income Americans already hurt by trying times in our economy”
http://blog.heartland.org/2015/01/americans-for-prosperity-backs-coalition-opposing-federal-gas-tax-hike/

F. CLIMATE CHANGE WEEKLY #157: MEMO REVEALS BOGUS EPA CLIMATE STRATEGY

A memo released as part of an ongoing Freedom of Information Act request examining the Environmental Protection Agency’s (EPA) rule-making has arguably revealed EPA uses misleading claims to stoke fears of global warming.

The March 2009 memo shows EPA feared it was losing support for its climate efforts because opinion polls consistently showed the public ranked fighting global warming very low on its list of priorities. The polls revealed the public felt harms from global warming were exaggerated and had little bearing on people’s lives.

In response, the memo describes EPA’s decision to shift the debate from concerns about melting ice caps and declining caribou and polar bear populations, to promoting the idea global warming poses a direct threat to public health, especially children’s health, and air and water quality.

Most Americans will never see a polar ice cap, nor will [they] ever have a chance to see a polar bear in its natural habitat. Therefore, it is easy to detach from the seriousness of the issue. Unfortunately, climate change in the abstract is an increasingly – and consistently – unpersuasive argument to make. However, if we shift from making this issue about polar caps [to being] about our neighbor with respiratory illness we can potentially bring this issue home to many Americans

The problem for EPA is, there has been no serious research linking global warming or greenhouse gas emissions to human health problems or air or water pollution.

According to the memo, an additional step EPA took was to raise concerns about climate change among minority groups and women, using headline-catching “hooks” concerning social justice and children’s health.

The memo details ways to create a positive association in the public’s mind between concerns about the safety of the water they drink and the air they breathe, and the need to act on global warming. Per the memo, “We must begin to create a causal link between the worries of Americans and the proactive mission we’re pushing.”

Chris Horner, an attorney and senior fellow of the Competitive Enterprise Institute, obtained the memo through a FOIA request. Horner said, “This memo shows EPA’s recognition the global

warming case is ‘consistently – an unpersuasive argument to make,’ and thus required a facelift, from a pro-scarcity movement of wealthy white elites to a racial and ‘social justice’ issue.
“This memo candidly affirms EPA’s conscious approach of yelling ‘clean air’ and ‘children’ at every turn in the push for an agenda that not long ago was about the end of the world in a climatic calamity, openly and rightly confident in getting a media assist,” said Horner.
John Dale Dunn, a physician and lawyer who has written on government and scientific corruption for more than 25 years, recognized the shift in EPA’s climate focus in 2009. “The children/baby risks panic strategy fit the EPA goals, according to secret strategy documents, when the cute Coca Cola polar bear cubs and mothers imagery failed to motivate public outrage,” Dunn said.
“The internal documents obtained under FOIA revealed the EPA and enviros were looking for a hook and decided the hook they were looking for was the health of children,” continued Dunn. “Why not? Nothing better to get politicians moving than marching and chanting women in matching t-shirts on a tear, worried about and advocating for their babies.”
-- H. Sterling Burnett
http://dailycaller.com/2015/01/26/exposed-epa-memo-tie-fighting-global-warming-to-americans-personal-worries/

G. TAXONOMY OF CLIMATE/ENERGY POLICY PERSPECTIVES

Posted on February 3, 2015 | 177 comments
by Planning Engineer
Debates on policy issues around climate and energy often feature opposing sides talking past each other.
http://judithcurry.com/2015/02/03/taxonomy-of-climateenergy-policy-perspectives/#more-17744

H. IS THE PENTAGON HYPING CLIMATE CHANGE? HERE, TAKE A LOOK.

By Lori Montgomery January 30, 2015
Let’s face it: Climate change can be a murky thing, hard to see and touch in the here and now. Except for some melting icecaps and vanishing species, it’s more future threat than current crisis.
http://www.washingtonpost.com/news/energy-environment/wp/2015/01/30/is-the-pentagon-hyping-climate-change-here-take-a-look/?postshare=5241422652227132
Judith Curry

I. EPA TURNING REGULATORY EYES TO NATURAL GAS, EXPERT SAYS

By Steve Wilson
Published February 04, 2015
A former Environmental Protection Agency regulator warns that while the Obama administration now has coal in its crosshairs, natural gas is next in line.
David Schnare cites a proposed rule on methane emissions as one of the ways President Obama and the EPA will clamp down on natural gas. The 33-year EPA veteran, who once sued utilities

for coal-fired plants that didn't meet Clean Air Act standards, is director of the Center of Energy and Environmental Stewardship at the Thomas Jefferson Institute for Public Policy.
Schnare said the EPA — as part of its "Clean Power Plan" rule that would largely put coal-fired power plants out of business — is contemplating forcing natural gas plants to increase their capacity from 46 percent to 70 percent to reduce carbon emissions by working them harder to replace older generation units that emit more carbon dioxide. This would lead to equipment failures as turbines designed for the lower workload could not endure a heavier one. Their carbon dioxide emissions would also be more regulated "at the very limit" of present technology.
"They've already started to pursue methane pollution, which the industry has been trying to control for a very long time, because that's their product," Schnare told Mississippi Watchdog. "The cost of running the drilling equipment, the pipelines and the plants themselves are being tightened."

Click for more from Watchdog.org**.**
http://www.foxnews.com/politics/2015/02/04/epa-turning-regulatory-eyes-to-natural-gas-expert-says/?intcmp=latestnews

J. TEXAS SUPREME COURT DECLINES TO ADDRESS WHETHER SUBSURFACE MIGRATION IS TRESPASS

On February 6, 2015, the Texas Supreme Court issued its long-awaited decision in the case *Environmental Processing Systems, L.C. v. FPL Farming Ltd.*, No. 12-0905 (Tex. Feb. 6, 2015). The case presented an opportunity for the Court to finally determine whether Texas law recognizes a claim for subsurface trespass. However, the Court (in a unanimous opinion) decided not to decide the issue.
EPS operates a non-hazardous wastewater injection well in Liberty County pursuant to a Texas Commission on Environmental Quality underground injection control permit. FPL Farming, which owns adjacent property currently used for rice farming, sued EPS under common law theories, including trespass, based on the alleged subsurface migration of injected fluids under FPL's property. FPL lost at trial. After a series of appeals (*see* TIP 2011-30), the court of appeals reversed the judgment for EPS, holding that Texas recognizes a subsurface trespass claim. The court of appeals also held that the jury was improperly instructed as to the burden of proof to show consent on the trespass claim.
The Texas Supreme Court resolved the case by deciding (as an issue of first impression) that lack of consent is an element of a trespass claim on which the plaintiff has the burden of proof. At the FPL trial, the jury instruction properly required FPL to prove lack of consent for the trespass claim, and the jury found no trespass, so the Court reinstated the jury verdict and reversed the court of appeals's judgment. The Court noted that it "neither approves nor disapproves" the court of appeals holding or analysis on the issue of subsurface trespass
Env150216
Roger Zygmunt

B. THE WEEK THAT WAS: 2015-02-07 (FEB. 7, 2015)

By Ken Haapala, President, Science and Environmental Policy Project (SEPP)
Threat of Climate Change: The White House has issued a report, "National Security Strategy", stating that climate change (what used to be global warming before it stopped) is one of the greatest threats to US national security. The report contains choice terms such as "carbon

pollution" which implies that the authors do not consider that their breathing is polluting, emitting carbon dioxide (CO2) concentrations 100 times that of the air they inhale.

The section "Confront Climate Change" states: *"Climate change is an urgent and growing threat to our national security, contributing to increased natural disasters, refugee flows, and conflicts over basic resources like food and water. The present day effects of climate change are being felt from the Arctic to the Midwest. Increased sea levels and storm surges threaten coastal regions, infrastructure, and property. In turn, the global economy suffers, compounding the growing costs of preparing and restoring infrastructure."*

As presented below, and in prior TWTWs, there are **NO** growing threats of storm intensity to the US or globally. Sea level rise appears to be in line with the past century, [local conditions are most important], the accumulated cyclone energy (ACE), is not increasing, temperatures have plateaued, in general the globe is greening, except for conflicts created for ideological reasons there are few areas of famine, the decline in Arctic ice has reversed, and even the White House report recognizes that the US is becoming more self-sufficient in production of oil and natural gas, even though the Administration has denied access for increased production in Federal lands and waters. In short, the Administration's campaign against climate change is out-of-touch with reality.

For example, the section "Advance Our Energy Security" opens with the statement: "*The United States is now the world leader in oil and gas production."* What has this administration done to create the US as the world leader – deny offshore drilling, deny Arctic drilling, deny hydraulic fracturing on federal lands and waters? The great increase in production of oil and gas is occurring on private and state-owned lands. This increase in production has led to a dramatic drop in world price of oil – a benefit to most American citizens and the world in general. The claim of "peak oil" in the foreseeable future is an idea of the past.

Almost amusingly, the report states: "Seismic shifts in supply and demand are underway across the globe."… "Increasing global access to reliable and affordable energy is one of the most powerful ways to support social and economic development and to help build new markets for U.S. technology and investment." Yet, the Administration continues to restrict the flow of oil to global markets, as can be seen in its refusal to approve the Keystone XL pipeline after six years of study.

According to newspaper- reports: *Energy Secretary Ernest Moniz underscores the importance of energy security in his own statement on the plan.*

"Now more than ever, it is critical for us to focus our efforts to cooperate on security issues that are increasingly critical to the stability of global markets and underscore the risk of relying on one source of energy," he said.

"At the same time, collective action on security also presents an opportunity to diversify our low-carbon energy options, combat climate change, and strengthen our economies." Apparently, Energy Secretary Moniz is unaware of the tremendous benefits to the US of low cost fossil fuels and the hardships that unreliable solar and wind are placing on the public and industries in Europe.

Unfortunately, the White House report gives an insight on how this ambitious administration will use whatever means it has available to expand control of the economy and energy use. The report states: *More than 100 countries have also joined with us to reduce greenhouse gases under the Montreal Protocol—the same agreement the world used successfully to phase out ozone-*

depleting chemicals. The Montreal Protocol is being misused on the now questionable claim that hydro fluorocarbons (HFCs) were depleting the stratospheric ozone layer, although little effect was being measured on the surface. Now, the administration is manipulating the meaning and intent of the Protocol to cover greenhouse gases, particularly methane and CO2.
The Administration's actions illustrate why the US should be wary of international agreements. Once approved by the Senate, an ambitious administration can manipulate international agreements for its own purposes. The administration's actions have been a quiet endeavor, with little publicity. But, the effects on US energy and prosperity can be severe and long-lasting.
See links under Defending the Orthodoxy, EPA and other Regulators on the March and, for ACE, http://models.weatherbell.com/tropical.php
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Natural Catastrophes – Losses: The December 20, 2014 TWTW linked to a preliminary report by Swiss Re, the world's second largest re-insurer (those companies that take on insurance risks by other companies). The report stated that in 2014 global disaster events cost insurers USD 34 billion, below recent annual averages. It also stated a total loss of life of 11,000 from natural catastrophe and man-made disaster events in 2014 were down from the more than 27 000 fatalities in 2013. It should be remembered that natural disasters include earthquakes, tidal waves, and etc. as well as extreme weather events.
The report of the world's largest re-insurer, Munich Re is out, *Review of natural catastrophes in 2014: Lower losses from weather extremes and earthquakes.* This report states that more than nine out of ten (92%) of the loss-related natural catastrophes were due to weather events. *"A striking feature was the unusually quiet hurricane season in the North Atlantic, where only eight strong – and thus named – storms formed; the long-term average (1950–2013) is around 11. In contrast, the tropical cyclone season in the eastern Pacific was characterized by an exceptionally large number of storms, most of which did not make landfall."*
The first and the fourth most expensive losses were winter damage, not heat or storm related. Japan was most hit by winter damage, which took 37 lives. Winter damage in the US and Canada ranked fourth in losses. Flooding in Asia took the most lives. Flooding has always been a major problem in Asia, and the rate of loss of lives is declining, not increasing.
Also, Roger Pielke posted a report on "The Precipitous Decline in US Flood Damage as a Percentage of GDP" Pielke states: *The US is prone to very large flood events, resulting in tens of billions of dollars in losses. However, the trend since 1940 is striking. As the nation has seen its economic activity expand by a factor of almost 13, flood losses as a proportion of that activity have dropped by about 75%.*

Please don't use this data to say anything about the incidence of flooding in the US or changes in climate. For that, I urge you to look at data and research, discussed here. You'll find very little evidence of increasing flood frequency or magnitude either in the US or globally. Regardless, the diminishing economic impact of floods in the US is undeniable.
It is becoming evident that the authors of the US "National Security Strategy" failed to consult with companies whose business it is to understand losses from extreme weather events or US academics who study these issues. See links under Changing Weather and http://www.swissre.com/media/news_releases/Preliminary_sigma_estimates_global_disaster_events_cost_insurers_USD_34_billion_in_2014.html
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Health: The EPA is heavily publicizing its anti-coal campaign on the grounds of public health, particularly fear of asthma. According to reports, early in this administration, officials at EPA decided that fear of respiratory diseases will be an excellent way to convince many in the public that action was needed to reduce coal-fired power plants. Asthma was a great fit. It was a disease often contracted in childhood and the incidence of the disease was increasing. The cause was unknown. It was assumed that the cause was outdoor air pollution in urban areas. namely, in poorer neighborhoods where coal-fired power plants were located. The EPA built its anti-coal and the anti-ozone campaigns on this assumption. However, empirical science may get in the way.

A problem has developed in this great plan. A study published in the *Journal of Asthma and Clinical Immunology* found little or no relationship in incidence of asthma between children in urban areas and children in rural area, after adjustments for other factors such as poverty. The study emphasizes that air pollution may be a cause for asthma; only it's indoor air pollution, such as second hand smoke, rodents, mold, etc. According to *The Hill* newspaper: *The study couldn't come at a worse time for the agency. EPA is preparing to tighten national standards for ground-level ozone (the main ingredient in smog) by as much as 20 percent. To justify the move, EPA Administrator Gina McCarthy argued she was "following science" to "protect those most at-risk—our children, our elderly, and people already suffering from lung diseases like asthma." But it's hard to see how lowering the current ozone limit either "follows the science" or "protects those most at-risk" for asthma.*

No doubt, the environmental industry will condemn the study, to include claims of coal industry funding, etc. But, the problem of asthma cannot be solved by condemning the research of others on the dubious basis of funding. If asthma is a pressing national issue, then it must be approached with scrupulous examination, not personal attacks. See links under Health, Energy, and Climate.

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The Race to the Bottom — Circular Reasoning? As explained in last week's TWTW, surveys (opinion polls) frequently disguise the scientific issues regarding global warming/climate change. The issue is not what climate scientists think, but how and why they think it — what physical evidence do they use to justify their claims? For example, given the best surface temperature records available, there were two periods of general warming during the 20th century; one from about 1910 to 1940 and the second from about 1976 to 1998. There has not been a generalized warming of the globe as one would expect from increasing atmospheric carbon dioxide. Surveys of scientists that fail to make these points as central issues are generally meaningless.

Many of those who create global climate models also ignore these points and are now trying to justify the failure of the models to predict the current plateau in global temperatures with ever imaginative explanations. Researchers at the Max Planck Institute used climate model simulations in 15 year periods to claim that the climate models are correct, except for natural variations (??). They concluded that there are no systematic errors in the models. To make matters worse the claim was summarized in Phys Org as:

Skeptics' who still doubt anthropogenic climate change have now been stripped of one of their last-ditch arguments: It is true that there has been a warming hiatus and that the surface of the earth has warmed up much less rapidly since the turn of the millennium than all the relevant climate models had predicted. However, ***the gap between the calculated and measured warming***

is not due to systematic errors of the models, as the skeptics had suspected, but because there are always random fluctuations in the Earth's climate. [Emphasis added, from Matt Briggs]
Who claimed that there were no fluctuations in the Earth's climate? Certainty, not most of the skeptics who have repeatedly pointed out that climate has been changing for hundreds of millions of years, long before humanity existed.
When analyzing the paper further, Nicholas Lewis (technical) and Andrew Montford (general) recognized the entire effort was another example of circular reasoning – an effort based on model outputs to verify models rather than rigorously comparing model output with physical observations of temperatures.
This affair exposes the poor quality of climate research being conducted and published by the UN Intergovernmental Panel on Climate Change (IPCC), and it's following among government entities. Some have argued that under the UN Framework Convention on Climate Change (UNFCCC), **it is not the function of the IPCC to understand natural variation in climate change, but only the human influence.** If so, then every report, every press release should boldly state that **the report is addressing the issue of human cause of climate change and does not address the natural causes that have been on-going for hundreds of millions of years.** Such a statement would help clarify the confusion in the public that the reports are from experts on climate, not experts on human influence who ignore natural influences. See links under Un-Science or Non-Science – Circular Reasoning?
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Non-Sustainable Alternative Energy? In discussing the experience of wind farms in Australia, David Archibald points out that the electricity from coal used to manufacture wind turbines cost far less than the electricity produced by wind turbines. How can such an activity be considered sustainable?
One can imagine the manufacturing difficulties that occur when electricity is unreliable. Pierre Gosselin has graphs on Germany's offshore wind capacity and actual production. See links under Alternative, Green ("Clean") Solar and Wind and Questioning European Green
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US National Security – Threat of Climate Change: The White House has issued a report, "National Security Strategy", stating that climate change (what used to be global warming before it stopped) is one of the greatest threats to US national security. The report contains choice terms such as "carbon pollution" which implies that the authors do not consider that their breathing is polluting, emitting carbon dioxide (CO_2) concentrations 100 times that of the air they inhale.
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See links under Defending the Orthodoxy, EPA and other Regulators on the March and, for ACE, http://models.weatherbell.com/tropical.php

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Quote of the Week: *If I had an hour to solve a problem, I'd spend 55 minutes thinking about the problem and 5 minutes thinking about solutions."* – Albert Einstein [H/t High Frontier]

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simulations in 15 year periods to claim that the climate models are correct, except for natural variations (??). They concluded that there are no systematic errors in the models. To make matters worse the claim was summarized in Phys Org as:
Sceptics who still doubt anthropogenic climate change have now been stripped of one of their last-ditch arguments: It is true that there has been a warming hiatus and that the surface of the earth has warmed up much less rapidly since the turn of the millennium than all the relevant climate models had predicted. However, ***the gap between the calculated and measured warming is not due to systematic errors of the models, as the sceptics had suspected, but because there are always random fluctuations in the Earth's climate.*** [emphasis added, from Matt Briggs]
Who claimed that there were no fluctuations in the Earth's climate? Certainty, not most of the skeptics who have repeatedly pointed out that climate has been changing for hundreds of millions of years, long before humanity existed.
When analyzing the paper further, Nicholas Lewis (technical) and Andrew Montford (general) recognized the entire effort was another example of circular reasoning – an effort based on model outputs to verify models rather than rigorously comparing model output with physical observations of temperatures.
This affair exposes the poor quality of climate research being conducted and published by the UN Intergovernmental Panel on Climate Change (IPCC), and its following among government entities. Some have argued that under the UN Framework Convention on Climate Change (UNFCCC), **it is not the function of the IPCC to understand natural variation in climate change, but only the human influence.** If so, then every report, every press release should boldly state that **the report is addressing the issue of human cause of climate change and does not address the natural causes that have been on-going for hundreds of millions of years.** Such a statement would help clarify the confusion in the public that the reports are from experts on climate, not experts on human influence who ignore natural influences. See links under Un-Science or Non-Science – Circular Reasoning?
****
Non-Sustainable Alternative Energy? In discussing the experience of wind farms in Australia, David Archibald points out that the electricity from coal used to manufacture wind turbines cost far less than the electricity produced by wind turbines. How can such an activity be considered sustainable?
One can imagine the manufacturing difficulties that occur when electricity is unreliable. Pierre Gosselin has a graphs on Germany's offshore wind capacity and actual production. See links under Alternative, Green ("Clean") Solar and Wind and Questioning European Green
****
Number of the Week: 12.9% and 10.6%. A study of over 23,000 children by a team headed by Dr Corrine Keet of the Johns Hopkins Children's Center found that 12.9% of inner city children had asthma while 10.6% of rural children did. When adjusting for factors such as poverty, the team found no statistical difference.
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http://www.sepp.org/twtwfiles/2015/TWTW%202-7-15.pdf

B. OBAMA PULLS THE PLUG ON $1.1 BILLION 'CLEAN COAL' PROJECT

By Michael Bastasch. Published February 05, 2015

The Obama administration is pulling the plug on a stimulus-backed "clean coal" power plant in central Illinois that was supposed to play a key support role for a proposed regulation to mandate carbon capture technology for coal plants.

The Energy Department announced it was pulling funding for the FutureGen 2.0 power plant after awarding project developers $1.1 billion as part of the 2009 stimulus package — most of the awarded funds were never spent.

"In order to best protect taxpayer interests, the Department of Energy has initiated a structured closeout of federal support for the project that will help maximize the value of investments to date while minimizing ongoing risks and further costs," said DOE spokesman Bill Gibbons.

The DOE's dismantling of the project is a huge blow to the Obama administration's climate agenda, mainly because FutureGen's failure undermines pending rules mandating coal plants use carbon capture and storage (CCS) technology. Obama was hoping to use FutureGen to show that CCS was commercially viable, a point that the coal industry has been contesting.

"The Obama Administration is engaging in misleading double-talk on clean coal technology. Although the administration leaned heavily on FutureGen technologies to justify its flawed New Source Performance Standards rule," said Laura Sheehan, spokeswoman for the American Coalition for Clean Coal Electricity.

http://www.foxnews.com/politics/2015/02/04/obama-pulls-plug-on-11-billion-clean-coal-project/?intcmp=latestnews

C. INCONVENIENT STUDY: SEAFLOOR VOLCANO PULSES MAY ALTER CLIMATE – MODELS MAY BE WRONG

New data show strikingly regular patterns, from weeks to eons From The Earth Institute at Columbia University: Vast ranges of volcanoes hidden under the oceans are presumed by scientists to be the gentle giants of the planet, oozing lava at slow, steady rates along mid-ocean ridges. But a new study shows that they flare up…

http://wattsupwiththat.com/2015/02/05/inconvenient-study-seafloor-volcano-pulses-may-alter-climate-models-may-be-wrong/

D. MANY MIXED SIGNALS IN THE UKMO'S LATEST 5-YEAR GLOBAL SURFACE TEMPERATURE FORECAST

Guest Post by Bob Tisdale

The UKMO issued their most recent 5-year global temperature forecast about a week ago. See their Decadal forecast press release for 2015. It has been getting a little press recently. The forecast description wasn't as clear as it could have been, but the UKMO openly displayed the failure of the…

http://wattsupwiththat.com/2015/02/05/many-mixed-signals-in-the-ukmos-latest-5-year-global-surface-temperature-forecast/

E. TENTH INTERNATIONAL CONFERENCE ON CLIMATE CHANGE

Thursday & Friday
June 11-12, 2015
The Washington Court Hotel

525 New Jersey Avenue N.W. Washington, DC 20001
(register now open)

F. DOE PULLS PLUG ON FUTUREGEN PROJECT

The Department of Energy (DOE) pulled the plug on the FutureGen 2.0 "clean-coal" power plant slated to be built in central Illinois. According to an article appearing in Crain's, "The U.S. Department of Energy has directed the suspension of FutureGen 2.0 project development activities. The DOE has concluded that there is insufficient time to complete the project before federal funding expires in September 2015."

U.S. Senator Dick Durbin (D-IL) released the following statement after learning that the Department of Energy has been forced to cancel federal funding for the FutureGen project due to the FutureGen Alliance's failure to find agreement with the private partners before the expiration of the $1 billion in funding that was secured for the public-private partnership as part of the American Recovery and Reinvestment Act:

"The Secretary of Energy informed me that because the FutureGen Alliance was unable to secure the private financing necessary to meet the conditions of the project, the Department of Energy has been forced to end their participation. This is a huge disappointment for both Central Illinois and supporters of clean coal technology." Read his entire statement at: http://www.durbin.senate.gov/newsroom/press-releases/durbin-statement-on-futuregen-announcement (**Not available**)

As part of the President's FY 2016 budget, the administration has proposed creating a "Carbon Dioxide Investment and Sequestration Tax Credit". The new credits are intended to accelerate commercial deployment of Carbon Capture, Utilization, and Storage (CCUS), as well as to catalyze development of new CCUS technologies. The proposal, part of the President's POWER+ Plan to invest in coal communities, would authorize $2 billion in refundable investment tax credits for carbon capture technology installed at a new or retrofitted electric generating unit that captures and permanently "sequesters" carbon dioxide. A minimum of 70 percent of the credits must flow to projects fueled by greater than 75 percent coal. The proposal would also provide a 20-year, refundable sequestration tax credit for facilities qualifying for the investment credit that would provide $10 per metric ton or $50 per metric ton of carbon dioxide permanently sequestered and either beneficially reused or not beneficially reused, respectively. For more information, visit: http://www.whitehouse.gov/sites/default/files/omb/budget/fy2016/assets/fact_sheets/building-a-clean-energy-economy-improving-energy-security-and-taking-action-on-climate-change.pdf

G. NRC PUBLISHES FINAL TWO VOLUMES OF YUCCA MOUNTAIN SAFETY EVALUATION

The Nuclear Regulatory Commission (NRC) staff has published volumes two and five of its safety evaluation report on the geologic high-level nuclear waste repository proposed for Yucca Mountain in Nevada.

Publication of these volumes completes the technical safety review of the Department of Energy's (DOE) Yucca Mountain application. The safety evaluation report includes the staff's recommendation that the Commission should not authorize construction of the repository because DOE has not met certain land and water rights requirements identified in Volume 4,

published in December, and a supplement to DOE's environmental impact statement has not yet been completed.
Volume 2 covers repository safety before permanent closure. It contains the staff's conclusion that with reasonable assurance, subject to proposed conditions, DOE's application meets the NRC's regulatory requirements in that area. Volume 5 covers proposed conditions on the construction authorization, probable subjects of license specifications, and the staff's overall conclusions.
NUREG-1949, Safety Evaluation Report Related to Disposal of High-Level Radioactive Wastes in a Geologic Repository at Yucca Mountain, Nevada, Volumes 1-5, is available on the NRC website at http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1949/

H. BILL WOULD REMOVE CORN FROM MANDATE FOR RENEWABLE FUEL

By Jennifer A. Dlouhy February 5, 2015
WASHINGTON - Lawmakers are reviving their fight against the nation's renewable fuel policy, introducing legislation to lift mandates that force refiners to blend corn-based ethanol into gasoline.
The measure sponsored by Rep. Bob Goodlatte, R-Va., would preserve requirements for cellulosic ethanol made from wood, grasses and other inedible plant material.
The legislation marks the first major bid this year to overhaul the 10-year-old renewable fuel standard, and represents a balance between the forces that want to repeal the law entirely and those that are only targeting ethanol derived from corn.
"It's the corn-based ethanol mandate that's got to go," said Rep. Peter Welch, D-Vt., one of 34 co-sponsors. "This doesn't get in the way of research for other cellulosic approaches to energy."
The top oil industry trade group, the American Petroleum Institute, is pushing for a full repeal of the renewable fuel standard, although it praised Goodlatte's bill.
"We continue to believe the misguided program should be repealed," said Bob Greco, API's downstream group director. "Mr. Goodlatte's reform bill addresses the core problem of the ethanol blend wall that could put consumers in harm's way, hurt the economy and disrupt the
The blend wall refers to opponents' contention that the standard, which mandates rising volumes of renewables in the nation's fuel supply, eventually will require more than the 10 percent mixture approved for all cars and trucks. Goodlatte also introduced separate legislation that would simply repeal the renewable fuel standard.
But the more nuanced "Renewable Fuel Standard Reform Act" Goodlatte touted Wednesday would spike the corn-based ethanol requirement and cap the proportion of ethanol that can be blended into conventional gasoline at 10 percent. It also would require the EPA to make sure cellulosic biofuel targets match production levels.
Overhauling the standard could face strong political headwinds, as Corn Belt lawmakers seek to preserve a mandate popular with their constituents, and as presidential contenders stump in Iowa.
Biofuel supporters cast Goodlatte's bipartisan bill as a sop to the oil industry. Bob Dinneen, president of the Renewable Fuels Association, called it "a reckless paean to Big Oil."
Although Congress set out the basic framework, it is up to the Environmental Protection Agency to establish annual quotas for the four types of biofuels mandated under the law: renewable fuel, mostly corn-based ethanol; advanced biofuels that aren't derived from corn starch; biodiesel; and cellulosic biofuel.

The EPA has struggled to issue final biofuel quotas; the agency has yet to finalize requirements for 2014 that were legally required in November 2013.
"Our fuel industry has no way to plan for the requirements that will be imposed on them in the future, much less the ability to plan for what they already owe," said Rep. Steve Womack, R-Ark. "If the RFS is so complicated that regulators are running a couple years behind in writing the rule, I would suggest it's time for a change."
http://www.houstonchronicle.com/business/energy/article/Bill-would-remove-corn-from-mandate-for-renewable-6065779.php

I. FATALLY FLAWED MAROTZKE CLIMATE SCIENCE PAPER 'SHOULD BE WITHDRAWN'

Climate scientists should take some basic courses in statistics From the GWPF – London, 6 February: A recent paper in Nature has received worldwide media attention because of its claim to have shown that the recent hiatus in surface temperature rises was the result of natural variability. The lead author, Jochem Marotzke of the Max…
http://wattsupwiththat.com/2015/02/06/fatally-flawed-marotzke-climate-science-paper-should-be-withdrawn/

J. REVIEW: DISASTERS & CLIMATE CHANGE BY ROGER PIELKE, JR.

Submitted by Doug L. Hoffman on Thu, 11/06/2014 - 11:02
The rightful place of Science: Disasters & Climate Change is the latest book by Roger Pielke, Jr., noted political scientist and professor in the Environmental Studies Program and a Fellow of the Cooperative Institute for Research in Environmental Sciences (CIRES). In it he addresses the controversial subject of whether natural disasters are becoming more frequent and more fearsome due to manmade climate change. This short volume is an excellent summary of his work in this area and a reference that anyone serious about climate change should have on their shelf. After receiving an advance copy of the work, here is my review
http://theresilientearth.com/?q=content/review-disasters-climate-change-roger-pielke-jr

K. THE MET OFFICE UK: OUR HEROS

Guest Essay by Kip Hansen
Those following the various versions of the "2014 was the warmest year on record" story may have missed what I consider to be the most important point. The UK's Met Office (officially the Meteorological Office until 2000) is the national weather service for the United Kingdom. Its Hadley Centre…
http://wattsupwiththat.com/2015/02/07/the-met-office-uk-our-heros/

L. TIDES, EARTHQUAKES, AND VOLCANOES

Guest Post by Willis Eschenbach [Graphs updated to include error bars] Inspired by the paper by the charmingly-named Anna Maya Tolstoy discussed here on WUWT, I decided to see if tidal forces affect the timing of earthquakes and volcanoes. Dr. Tolstoy's hypothesis is that tidal forces affect the timing of the subterranean eruptions … but she

M. POLAR BEARS OUT ON THE SEA ICE EAT FEW SEALS IN SUMMER AND EARLY FALL

Even back in the 1970s, polar bears that spent the summer and early fall on the sea ice did not eat very often and some probably didn't eat at all Guest essay by Dr. Susan Crockford, zoologist (blogging at http://www.polarbearscience.com) We hear endlessly about the polar bears 'forced' to go without food for months because…
http://wattsupwiththat.com/2015/02/09/polar-bears-out-on-the-sea-ice-eat-few-seals-in-summer-and-early-fall/

N. THANKS TO THE IPCC, THE PUBLIC DOESN'T KNOW WATER VAPOR IS MOST IMPORTANT GREENHOUSE GAS

Guest Opinion: Dr. Tim Ball It is not surprising that Roe and Baker explained in a 2007 Science paper that, "The envelope of uncertainty in climate projections has not narrowed appreciably over the past 30 years, despite tremendous increases in computing power, in observations, and in the number of scientists studying the problem." The Intergovernmental…
http://wattsupwiththat.com/2015/02/08/thanks-to-the-ipcc-the-public-doesnt-know-water-vapor-is-most-important-greenhouse-gas/

O. WHY REDUCING CO2 EMISSIONS IS LIKE THE 'PRISONER'S DILEMMA'

Guest essay by Eric Worrall
The Prisoner's dilemma is a games theory scenario which explores cooperation in difficult circumstances. The classic description, there are two prisoners accused of a crime. Their options are: They both keep quiet, and when convicted they both receive moderate sentences. One prisoner rats on the other prisoner. The prisoner who…
http://wattsupwiththat.com/2015/02/08/why-reducing-co2-emissions-is-like-the-prisoners-dilemma/

P. CLAIM: RESEARCHERS FIND NEW EVIDENCE OF WARMING

New study reveals remote lakes in Ecuador are not immune to climate change From Queen's University. A study of three remote lakes in Ecuador led by Queen's University researchers has revealed the vulnerability of tropical high mountain lakes to global climate change – the first study of its kind to show this. The data explains…

http://wattsupwiththat.com/2015/02/10/claim-researchers-find-new-evidence-of-warming/
http://post.queensu.ca/~pearl/Andes/Andes.html

Q. FAILED CLIMATE PREDICTIONS GETS A WEBSITE

From climatechangepredictions.org, where the proprietor writes: I've started a website with the idea of making it entertaining as well as informative. The website presents global warming predictions that have been made over the past 40 or so years, especially predictions that are either contradictory or alternatively plainly ridiculous and thus amusing. From the About

http://wattsupwiththat.com/2015/02/10/failed-climate-predictions-gets-a-website/

R. WARMING STAYS ON THE GREAT SHELF

Global temperature update: the Pause is now 18 years 2 months By Christopher Monckton of Brenchley Since December 1996 there has been no global warming at all (Fig. 1). This month's RSS temperature shows a sharp uptick to warmer worldwide weather than for two years, shortening the period without warming by a month to 18…
http://wattsupwiththat.com/2015/02/09/warming-stays-on-the-great-shelf/

S. THE TRANSFORMATION OF THE SCIENCE OF CLIMATOLOGY, IN LIKE A LAMB, OUT LIKE A LION

Hubert Lamb And The Transformation Of Climate Science London, 10 February: A new paper by Bernie Lewin and published today by the Global Warming Policy Foundation re-examines the legacy of the father of British climatology Hubert Lamb (1913-1997). After leading and establishing historical climatology during the 1960s, Hubert Lamb became the founding Director of the…
http://wattsupwiththat.com/2015/02/10/transformation-of-the-science-of-climatology-in-like-a-lamb-out-like-a-lion/

T. SEA ICE 101 – INSOLATED, ISOLATED, INSULATED ICEBERGS IN SPACE, A MID-TERM EXAM

(Or, How Climate Science Is Taught Today)

Guest essay by Robert A. Cook

The following begins a series of topics on Arctic and Antarctic Sea Ice. And, since we (behind the keyboard) will be talking to you (the readers, and perhaps even the learners) as if we were openly addressing you in a classroom or…
http://wattsupwiththat.com/2015/02/09/sea-ice-101-insolated-isolated-insulated-icebergs-in-space-a-mid-term-exam/

Regards
George

IN THE SUPREME COURT OF TEXAS

NO. 12-0905

ENVIRONMENTAL PROCESSING SYSTEMS, L.C., PETITIONER,

v.

FPL FARMING LTD., RESPONDENT

ON PETITION FOR REVIEW FROM THE
COURT OF APPEALS FOR THE NINTH DISTRICT OF TEXAS

Argued January 7, 2014

JUSTICE GREEN delivered the opinion of the Court.

In this case, a landowner sued its neighbor, the operator of an adjacent wastewater disposal facility, on the theory that deep subsurface wastewater trespassed beneath the landowner's property. The jury returned a verdict in the wastewater disposal facility's favor. After a series of appeals that included an opinion and remand from this Court, the court of appeals reversed the jury's verdict. 383 S.W.3d 274, 289 (Tex. App.—Beaumont 2012). Today we hold that the jury instruction properly included lack of consent as an element of a trespass cause of action that a plaintiff must prove, and that the trial court properly denied the plaintiff's motion for directed verdict on the issue of consent. We reverse the court of appeals' judgment, reinstate the trial court's judgment that the landowner take nothing, and decline the invitation to address the remaining question presented in

this appeal—namely, whether deep subsurface wastewater migration is actionable as a common law trespass in Texas.

I. Factual and Procedural Background

FPL Farming Ltd. owns land in Liberty County, Texas, which it uses primarily for rice farming. It owns all of the surface and non-mineral subsurface rights to this land. Environmental Processing Systems (EPS) leased a five-acre tract on an adjacent property, where it constructed and operated a wastewater disposal facility. EPS began operating this facility under a 1996 permit from the Texas Natural Resource Conservation Commission (TNRCC).[1] During the initial permitting process, FPL Farming's predecessor-in-title, J.M. Frost III, requested a hearing to contest EPS's permit applications. Frost later reached a settlement with EPS, forgoing his contest in exchange for $185,000. The parties reduced their agreement to a writing reflecting that the settlement was binding on all successors-in-title. EPS then drilled a well and began injecting wastewater approximately 8,000 feet below ground into the Frio rock formation.

In 1999, EPS applied to the TNRCC/TCEQ to amend its permits to increase the volume of wastewater it could inject into the Frio formation. FPL Farming, by then the surface owner of the Frost property, requested a hearing to contest the permit amendments. The administrative law judge acknowledged that wastewater would likely enter the subsurface of FPL Farming's land in the future, but found that FPL Farming did not have the right to exclude EPS from the deep subsurface because

[1] EPS requested and received two permits to operate two Class I wastewater injection wells. It is undisputed, however, that during the relevant time in this case EPS only drilled and injected wastewater through one well. Years after it issued EPS's permits, the TNRCC was renamed the Texas Commission on Environmental Quality (TCEQ). *See* Act of May 28, 2001, 77th Leg., R.S., ch. 965, § 18.01, 2001 Tex. Gen. Laws 1933, 1985. We refer to this entity as the TNRCC/TCEQ for clarity purposes.

FPL Farming's right to obtain its own injection well permit would not be impaired. The TNRCC/TCEQ granted EPS's permit amendments upon the recommendation of the administrative law judge, and the district court affirmed. The court of appeals also affirmed, noting the possibility that "should the waste plume migrate to the subsurface of FPL Farming's property and cause harm, FPL Farming may seek damages from EPS." *FPL Farming, Ltd. v. Tex. Natural Res. Conservation Comm'n*, No. 03-02-00477-CV, 2003 WL 247183, at *5 (Tex. App.—Austin Feb. 6, 2003, pet. denied) (mem. op.) (citation omitted).

Less than three years after the court of appeals affirmed the permit amendments, FPL Farming sued EPS and alleged that wastewater had migrated into the deep subsurface of its land, possibly contaminating the briny groundwater beneath it. FPL Farming sued for injunctive relief and damages for trespass, negligence, and unjust enrichment. At trial, the contested issues were whether EPS's injected wastewater had actually entered beneath FPL Farming's land, whether FPL Farming consented to the alleged entry (either by its own conduct or through Frost's), and the amount of damages, if any. The trial court excluded the settlement agreement between Frost and EPS. Before the jury verdict, the trial court denied FPL Farming's no-evidence motion for a directed verdict on the issue of whether EPS provided evidence that FPL Farming or Frost had consented to the subsurface entry. The jury charge included consent in the definition of trespass over FPL Farming's objection that consent should be treated as an affirmative defense:

> Question 1: Did EPS trespass on FPL [Farming's] property?
>
> > "Trespass" means an entry on the property of another *without having consent of the owner*. To constitute a trespass, entry upon another's property need not be in person, but may be made by causing or permitting a thing to cross the

> boundary of the property below the surface of the earth. Every *unauthorized* entry upon the property of another is a trespass, and the intent or motive prompting the trespass is immaterial.
>
> Answer yes or no.

(emphasis added). The jury answered "No."

Following a jury verdict for EPS on all claims and issues, the trial court entered a take-nothing judgment. The court of appeals affirmed, holding that FPL Farming could not recover in tort, as a matter of law, because the TNRCC/TCEQ had authorized EPS's underlying actions. *FPL Farming Ltd. v. Envtl. Processing Sys., L.C.*, 305 S.W.3d 739, 744–45 (Tex. App.—Beaumont 2009), *rev'd*, 351 S.W.3d 306 (Tex. 2011), *remanded to* 383 S.W.3d 274 (Tex. App.—Beaumont 2012, pet. granted). This Court reversed, holding that a government-issued permit does not shield the permit holder from civil tort liability, but we reserved the question of whether "subsurface wastewater migration can constitute a trespass, or whether it did so in this case." *FPL Farming Ltd.*, 351 S.W.3d at 314–15. On remand, the court of appeals reversed the trial court's take-nothing judgment, holding that: (1) Texas recognizes a common law trespass cause of action for deep subsurface water migration; (2) consent is an affirmative defense to trespass, on which EPS bore the burden of proof, and therefore the jury charge was improper; (3) FPL Farming was not entitled to a directed verdict because there was some evidence that it (or Frost) impliedly consented to the subsurface entry; and (4) the trial court erroneously excluded the settlement agreement between EPS and Frost from evidence. 383 S.W.3d at 282, 284–85, 288–89.

Both parties petitioned this Court for review. EPS challenges the court of appeals' decision recognizing a trespass cause of action under these circumstances and holding that consent is an

affirmative defense. FPL Farming challenges the court of appeals' decision affirming the denial of its motion for directed verdict and reversing the settlement agreement's exclusion. We granted both petitions for review. 57 TEX. SUP. CT. J. 53 (Nov. 22, 2013).

II. Consent in Trespass Causes of Action

We first consider whether lack of consent is an element of the trespass cause of action (on which the plaintiff bears the burden) or whether consent is an affirmative defense (on which the defendant bears the burden). If lack of consent is an element of a trespass cause of action as the jury charge instructed here, then we need not address whether Texas law recognizes a trespass cause of action for deep subsurface wastewater migration because the jury found in EPS's favor on all of FPL Farming's claims and any error would be harmless. *See* TEX. R. APP. P. 61.1(a); *see also Gilbert Wheeler, Inc. v. Enbridge Pipelines (E. Tex.), L.P.*, ___ S.W.3d ___, ___ (Tex. 2014) (declining to address a question related to a trespass allegation because "even if the submission of the trespass cause of action was error, it was harmless").

We have not squarely addressed the question of which party bears the burden of proving consent in a trespass action, nor have the courts of appeals answered it uniformly.[2] We recently observed that "we have rarely addressed trespass damages in detail," *Coinmach Corp. v. Aspenwood*

[2] *Compare Stukes v. Bachmeyer*, 249 S.W.3d 461, 465 n.1 (Tex. App.—Eastland 2007, no pet.) (referencing consent as an affirmative defense without analyzing the question directly), *Gen. Mills Rests., Inc. v. Tex. Wings, Inc.*, 12 S.W.3d 827, 835 (Tex. App.—Dallas 2000, no pet.) (same), *Cain v. Rust Indus. Cleaning Servs., Inc.*, 969 S.W.2d 464, 470 (Tex. App.—Texarkana 1998, pet. denied) (same), *Ward v. Ne. Tex. Farmers Co-op. Elevator*, 909 S.W.2d 143, 150 (Tex. App.—Texarkana 1995, writ denied) (same), *Carr v. Mobile Video Tapes, Inc.*, 893 S.W.2d 613, 623 (Tex. App.—Corpus Christi 1994, no writ) (same), *and Stone Res., Inc. v. Barnett*, 661 S.W.2d 148, 151 (Tex. App.—Houston [1st Dist.] 1983, no writ) (performing some analysis on the consent question and holding that consent is an affirmative defense), *with Watson v. Brazos Elec. Power Coop., Inc.*, 918 S.W.2d 639, 645–46 (Tex. App.—Waco 1996, writ denied) (approving a jury charge that defined trespass as entering another's property without consent).

Apartment Corp., 417 S.W.3d 909, 920 (Tex. 2013), so it is unsurprising that we have also not addressed which party bears the burden to prove consent in a trespass lawsuit.[3] Although important trespass issues have not frequently drawn this Court's attention, our historical precedent guides the present inquiry.

Examining our historical treatment of trespass is important because we adhere to prior decisions that have established rules relating to property rights unless, or until, the Legislature modifies those rules. *See Friendswood Dev. Co. v. Smith-Sw. Indus., Inc.*, 576 S.W.2d 21, 29 (Tex. 1978) (stating that "[t]he doctrine of *stare decisis* has been and should be strictly followed by this Court in cases involving established rules of property rights," but giving effect to subsequent changes in legislative policy); *see also Southland Royalty Co. v. Humble Oil & Ref. Co.*, 249 S.W.2d 914, 916 (Tex. 1952) (stating that when this Court reviews property rights, previously established rules "should not be changed in the absence of other controlling circumstances, even though good reasons might be given for a different holding") (quoting *Tanton v. State Nat'l Bank of El Paso*, 79 S.W.2d 833, 834 (Tex. 1935)); *cf. Marcus Cable Assocs., L.P. v. Krohn*, 90 S.W.3d 697, 702 (Tex. 2002) (acknowledging "[t]he emphasis our law places upon . . . important public policies by promoting certainty in land transactions"). A review of this Court's trespass-related jurisprudence reveals that

[3] In a recent case involving a civil battery claim, however, we recognized that "[c]onsent to contact 'negatives the wrongful element of the defendant's act, and prevents the existence of a tort.'" *City of Watauga v. Gordon*, 434 S.W.3d 586, 591 (Tex. 2014) (quoting W. PAGE KEETON ET AL., PROSSER & KEETON ON THE LAW OF TORTS, § 18, at 112 (5th ed.1984)). We concluded that the plaintiff pleaded the existence of an intentional tort because his pleadings demonstrated he did not consent to the defendant's conduct, and "battery is defined to require an intentional touching without consent." *Id.* at 594 (citation omitted).

a common definition of trespass has emerged over time that is consistent with the trespass definition submitted to the jury in this case.

This Court has consistently defined a trespass as encompassing three elements: (1) entry (2) onto the property of another (3) without the property owner's consent or authorization. Our review of this Court's trespass cases begins with our first recorded opinions.[4] In 1841, the Supreme Court of the Republic of Texas reviewed a case in which:

> A jury found that the defendant entered on the premises of the plaintiff without any title in law or warrant of authority from the plaintiff; that the plaintiff, with a view to be restored to possession, gave up one portion of his land to get possession of the other portion, and that the title of the plaintiff was genuine.

Hall v. Phelps, Dallam 435, 436 (Tex. 1841). The Court noted that the trial court refused the defendant's proposed instructions, which sought to depict the parties' transaction as consensual and not coerced. *Id.* at 436–37 (noting, for example, one proposed instruction: "If [the jury] believed the parties compromised their difficulties and settled the same, they should find for the defendant."). Instead, the Court approved the trial court's instructions, *id.* at 439–40, 441, which the Court summarized as stating:

> [If the jury] believed the defendant entered on the premises *without any title in law or warrant of authority from the plaintiff*, and that [the plaintiff], with a view to be restored to possession, gave up one portion of his land to get back the other, they might declare the title so made as void; that they should determine from the evidence, if this had been such a case; that if they believed the defendant had a doubtful claim to the league granted to plaintiff, they might find for the defendant; but to come to that conclusion they should be satisfied the defendant had more than a shadow of

[4] We recognize that this historical examination involves cases decided before formal pleading rules went into effect. We cite them not as conclusive authority on their allocation of the burden of proof, but as examples of how this Court has defined trespass or approved the definition of trespass over time.

> title; and that if they believed the defendant's entry on the land was *without any right* to enter, they might find such damages as the evidence warranted.

Id. at 437 (emphasis added). After the plaintiff proved that "the defendant's entry on the land was without any right to enter," the trial court ruled in the plaintiff's favor and issued an injunction prohibiting the defendant from entering the plaintiff's land.[5] *Id.* The Court affirmed the trial court's judgment in all respects. *Id.* at 441.

In 1878, the now-Supreme Court of Texas had an opportunity to review jury instructions that involved trespass issues. In *Houston & Great Northern Railroad Co. v. Meador*, 50 Tex. 77 (1878), a landowner's heirs sued a railroad company and alleged it negligently constructed a railroad through the landowner's property by damaging fences and failing to install cattle guards, which caused livestock to enter the property and damage crops. *Id.* at 81. The railroad requested a jury instruction on the defense that because it used independent contractors to construct the railroad, the contractors were solely liable for any damages caused by their own negligence. *Id.* at 81, 83–84. The trial court denied the railroad's proposed instruction based on an exception to independent contractor liability rules that an employer can still be held liable if it authorized an independent contractor to commit a wrongful act. *Id.* at 82–84. Apart from the question of negligence, the case turned on whether the railroad caused the independent contractors to wrongfully trespass on the landowner's property because causing such a wrongful act would have made the railroad responsible for the independent

[5] We specifically note this portion of the relief granted—an injunction against future entry— because it is wholly consistent with the relief available in a common law trespass action. *See, e.g.*, *Allen v. Keeling*, 613 S.W.2d 253, 255 (Tex. 1981) (enjoining defendants from trespassing).

contractor's negligence. *Id.* at 84. The Court approved of the trial court's instruction that defined trespass:

> If, [the evidence] should show either that the defendants [or the independent contractors] entered upon the [landowner's property] for the purpose of constructing said railroad, *without first having obtained the consent of the [landowner]*, . . . then the defendants, if the evidence under the law of the charge would otherwise justify it, would be liable for damages to [the landowner's crops based on the negligent construction of the railroad].

Id. at 83 (emphasis added). In approving this instruction, the Court noted that "[u]nder the evidence, it was for the jury to say whether [the landowner] had consented to the entry on his premises or not." *Id.* at 84.

In a trespass to try title case in 1881, this Court defined a trespasser as "one who, not having the title to land, *without the consent* of the true owner, makes entry thereon." *Pilcher v. Kirk*, 55 Tex. 208, 216 (1881) (emphasis added). Similarly, in 1884, this Court recognized that "[t]he ordinary signification of the term 'trespass' is the wrongful interference with another's personal or property rights." *Cahn Bros. & Co. v. Bonnett*, 62 Tex. 674, 676 (1884). In determining the appropriate venue for a plaintiff to bring suit for a wrongful writ of attachment, the Court explained that "the pith of the action is the wrongful interference thereby with the property rights of the plaintiff." *Id.*

In 1889, in a case involving questions of trespass and the lawful recovery of personal property, a married couple alleged that a group of defendants entered their home, removed rented furniture, and threatened the wife. *Loftus v. Maxey*, 11 S.W. 272, 272 (Tex. 1889). The parties contested the issue of whether the couple consented to the defendants' entry, and this Court approved

of a jury instruction that read: "If the proof satisfy you that the defendants . . . did take and remove the bed, as alleged in the plaintiffs' petition, *without the consent* of [the plaintiffs], . . . then you will find for plaintiffs for such an amount as you may deem proper and adequate . . . ." *Id.* (emphasis added).

Later, in 1926, this Court noted that construction and maintenance of a dam on another's property for thirty-five years would constitute a continuing trespass if it occurred without the landowner's consent. *See Motl v. Boyd*, 286 S.W. 458, 476 (Tex. 1926), *disapproved of on other grounds by Valmont Plantations v. State*, 355 S.W.2d 502 (Tex. 1962). Ten years later, in a premises liability case, this Court defined a trespasser, in part, as someone who "enters upon the property of another without any right, lawful authority, or express or implied invitation, permission, or license." *Tex.–La. Power Co. v. Webster*, 91 S.W.2d 302, 306 (Tex. 1936) (citation omitted). Later still, in *Shell Oil Co. v. Howth*, 159 S.W.2d 483 (Tex. 1942), a case involving adverse claims to mineral land, this Court distinguished another case by explaining that "[t]he entry of the [defendant] on the land *without the consent* of [the landowner] constituted a trespass and ouster in denial of [the landowner's] rights. That was the gravamen of the wrong, and a recovery was based upon that ground." *Id.* at 491 (emphasis added) (citing *Humble Oil & Ref. Co. v. Kishi*, 276 S.W. 190, 190–91 (Tex. Comm'n App. 1925, judgm't adopted), *judgm't set aside on reh'g*, 291 S.W. 538 (Tex. Comm'n App. 1927, holding approved)).

In recent years, this Court's definition of a common law trespasser has remained consistent with our historical precedent. In 1997, we cited a writ refused, court of appeals case for its holding that "every *unauthorized* entry upon land of another is a trespass." *Trinity Universal Ins. Co. v.*

Cowan, 945 S.W.2d 819, 827 (Tex. 1997) (emphasis added) (quoting *McDaniel Bros. v. Wilson*, 70 S.W.2d 618, 621 (Tex. Civ. App.—Beaumont 1934, writ ref'd)). In a 2006 premises liability case, we stated that "[a] trespasser at common law was one who entered upon property of another *without any legal right or invitation*, express or implied." *State v. Shumake*, 199 S.W.3d 279, 285 (Tex. 2006) (emphasis added) (citing *Tex.–La. Power Co.*, 91 S.W.2d at 306). Two years later, in a case involving a trespass allegation, we once again approvingly quoted the rule from *McDaniel Brothers* that "every *unauthorized* entry upon land of another is a trespass even if no damage is done or injury is slight, and gives a cause of action to the injured party." *Coastal Oil & Gas Corp. v. Garza Energy Trust*, 268 S.W.3d 1, 12 n.36 (Tex. 2008) (emphasis added) (quoting *McDaniel Bros.*, 70 S.W.2d at 621).

Further, we reiterated the now-familiar standard in a 2011 trespass case, stating that "[t]respass to real property is an *unauthorized* entry upon the land of another, and may occur when one enters—or causes something to enter—another's property." *Barnes v. Mathis*, 353 S.W.3d 760, 764 (Tex. 2011) (per curiam) (emphasis added) (citations omitted). In *Barnes*, the burden of proving consent was not challenged, but the jury instruction defined trespass, in relevant part, as "any unauthorized intrusion or invasion of private premises or land of another, committed when a person enters another's land without consent; or alternatively, unauthorized entry upon land of another." *Id.* at 765 n.4. Finally, in 2013, this Court approved of a court of appeals' definition of trespass when we noted, "Texas courts of appeals have provided helpful explanations of the common law principles that apply [in trespass cases]," and we recited the general definition that "[e]very

unauthorized entry upon land is a trespass even if no damage is done." *Coinmach Corp.*, 417 S.W.3d at 920 (emphasis added) (quoting *Watson*, 918 S.W.2d at 645).

In sum, the definition of a common law trespass has remained constant throughout this Court's jurisprudence and has become a well-established rule relating to property rights. At its core, a "[t]respass to real property is an *unauthorized* entry upon the land of another, and may occur when one enters—or causes something to enter—another's property." *Barnes*, 353 S.W.3d at 764 (emphasis added) (citations omitted). We have never departed from the inclusion of lack of consent or authorization in the definition of a trespass. With this well-established definition of a trespass in mind, we next address whether the jury charge properly placed the burden of proving an unauthorized entry, or lack of consent, on the plaintiff.

FPL Farming argues that section 167 of the Restatement (Second) of Torts clearly establishes that consent is an affirmative defense to a trespass claim. *See* RESTATEMENT (SECOND) OF TORTS § 167 cmt. c (1965). Comment c to section 167, the provision defining the trespass cause of action, states: "*Burden of proof.* The burden of establishing the possessor's consent is upon the person who relies upon it." *Id.* Despite FPL Farming's contrary contention, it is not clear from this language which party is "the person who relies upon [consent]," and the only case in Texas that has cited this comment is the court of appeals' opinion below.[6] *See* 383 S.W.3d at 283–84.

[6] Colorado cites this comment in its pattern jury charge, which treats consent as an affirmative defense in a trespass cause of action. COLO. SUP. CT. COMM. ON CIVIL JURY INSTRUCTIONS 18:3. It is the only state that cites comment c in providing how consent is incorporated into a trespass causes of action.

A handful of courts of appeals have stated that consent is an affirmative defense to be pleaded and proven by the defendant, but the issue is far from settled.[7] There is no pattern jury charge for a trespass to real property cause of action in Texas. At least one court of appeals has approved of a proposed charge definition and question that included lack of consent as an element of trespass. *See Watson*, 918 S.W.2d at 645–46.[8] And although other courts of appeals have stated that "consent is an affirmative defense to a cause of action for trespass," *e.g.*, *Gen. Mills Rests., Inc.*, 12 S.W.3d at 835, the more precise statement from the courts of appeals' case law is that "consent to enter the property is sufficient to defeat the cause of action for trespass," *e.g.*, *Carr*, 893 S.W.2d at 623, because only one court of appeals has given more than cursory treatment to the present issue of whether consent is an affirmative defense to a trespass claim. *See Stone Res., Inc.*, 661 S.W.2d at 151. There, the court of appeals held, without citing any authority for the proposition, that:

> [R]egardless of the definition given to the term "trespass", the courts have held that once the plaintiff has proven ownership of the property "or a lawful right to possession", and an entry by the defendant, the burden of proof falls upon the defendant to plead and prove consent or license as a justification for the entry.

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[7] *See supra* note 2 (listing cases).

[8] The tendered definition and question on trespass were:

> "Trespasser" means one who enters on the property of another without having consent of the owner. To constitute a trespass, entry upon another's property need not be in person but may be made by causing or permitting a thing to cross the boundary of the premises. Every unauthorized entry upon land of another is a trespass and the intent or motive prompting the trespass is immaterial.
>
> Did [Brazos] trespass causing damage to [Watson's] property on the date of the fire that is the basis of this suit?

Watson, 918 S.W.2d at 645–46. The court of appeals held that the trial court erred by refusing this tendered definition and question, and by failing to include them in the charge. *See id.* at 641–42.

Id. Subsequent courts of appeals' opinions have merely cited *Stone Resources* for this rule of law in dicta, and perhaps hastily used the term "affirmative defense" to describe the proposition.[9] Thus, no well-reasoned allocation of the burden of proving consent in trespass cases has emerged from our courts of appeals,[10] despite FPL Farming's arguments to the contrary.

Ignoring the well-established definition of a trespass as "an unauthorized entry upon the land of another," *see, e.g.*, *Barnes*, 353 S.W.3d at 764, FPL Farming argues that the defendant bears the burden of proving authorization, or consent, as an affirmative defense. In determining the burden allocation of a fact a party must prove, we consider: (1) "[t]he comparative likelihood that a certain

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[9] *See Stukes*, 249 S.W.3d at 465–66 & n.1; *Gen. Mills Rests., Inc.*, 12 S.W.3d at 831–32, 835; *Cain*, 969 S.W.2d at 470; *Ward*, 909 S.W.2d at 150; *Carr*, 893 S.W.2d at 623–24.

[10] Our review of other jurisdictions reveals a similar lack of reasoning and consistency in allocating the burden of pleading and proving consent. *Compare Loftus v. Mingo*, 511 N.E.2d 203, 210 (Ill. App. Ct. 1987) (requiring plaintiff's pleadings to negate performance of official duties and allege wrongful interference with property rights to claim trespass against a public official), *Sullivan v. Wallace*, 766 So. 2d 654, 658 (La. Ct. App. 2000) (concluding that a defendant "enter[ing] onto the land and remov[ing] timber without the plaintiff's knowledge or consent" was sufficient to support a finding of trespass), *Mitchell v. Balt. Sun Co.*, 883 A.2d 1008, 1014 (Md. Ct. Spec. App. 2005) (recognizing that a trespass plaintiff must prove lack of consent), *and Ondovchik Family Ltd. P'ship v. Agency of Transp.*, 996 A.2d 1179, 1183, 1187 (Vt. 2010) (holding that a landowner failed to plead a trespass claim because, "[b]y definition, trespass involves conduct that the trespasser has *no right* to engage in" and defendant's actions were privileged) (citations omitted), *with McCaig v. Talladega Publ'g Co.*, 544 So. 2d 875, 879 (Ala. 1989) ("Consent is a defense to an action for damages for trespass."), *Rosenthal v. City of Crystal Lake*, 525 N.E.2d 1176, 1181 (Ill. App. Ct. 1988) (finding that plaintiff in a trespass and ejectment action did not have the burden to prove defendant's initial entry was unlawful), *and Grygiel v. Monches Fish & Game Club, Inc.*, 787 N.W.2d 6, 18 (Wis. 2010) (concluding that a trespass defendant must plead and prove lack of consent). Further, some jurisdictions appear to allocate the burden of proving and disproving consent on plaintiffs and defendants simultaneously. *See Lee v. Konrad*, 337 P.3d 510, 522 (Alaska 2014) (citations omitted) (inconsistently stating that "[c]onsent is generally considered to be an affirmative defense to trespass," but "consent marks a deficiency in the plaintiff's prima facie case at the most fundamental level; where the plaintiff consents, the defendant's act is simply not tortious"); *Singleton v. Haywood Elec. Membership Corp.*, 588 S.E.2d 871, 874 (N.C. 2003) (citations omitted) (referring to trespass as a "wrongful invasion" and stating that "a claim of trespass requires . . . an unauthorized entry by [a] defendant," but inconsistently stating that "[i]n a trespass action a defendant may assert that the entry was lawful or under legal right as an affirmative defense"). But requiring a defendant to carry the burden of proof on an element that is also fundamental to the plaintiff's prima facie case "obviates the tort: Where there is a consensual entry, there is no tort, because lack of consent is an element of the wrong." *Spinks v. Equity Residential Briarwood Apartments*, 90 Cal. Rptr. 3d 453, 484 (Ct. App. 2009) (citation omitted).

situation may occur in a reasonable percentage of cases"; and (2) the difficulty in proving a negative. *20801, Inc. v. Parker*, 249 S.W.3d 392, 397 (Tex. 2008) (citations omitted).

Applying the *20801, Inc.* factors, we are mindful that consent is an issue in only a fraction of trespass cases, as represented by the dearth of case law on point. The fact that consent (or authorization) is rarely contested reflects "the assumption that landowners normally have no reason to expect trespassers or know about them," *Shumake*, 199 S.W.3d at 285, and landowners or possessors will normally not be presented with the opportunity to provide consent or authorization before an entry occurs.

Regarding the second *20801, Inc.* factor, we do not believe it will be difficult for a landowner or possessory interest holder to prove lack of consent or authorization. After all, the landowner or possessor who is bringing suit is in the best position to provide evidence on whether an alleged trespasser's presence was unauthorized because only "someone acting with the authority of the landowner or one with rightful possession" can authorize, or consent to, the entry. *Gen. Mills Rests. Inc.*, 12 S.W.3d at 835; *see also Armintor v. Cmty. Hosp. of Brazosport*, 659 S.W.2d 86, 90 (Tex. App.—Houston [14th Dist.] 1983, no writ); *cf. Tex.–La. Power Co.*, 91 S.W.2d at 306 (indicating that only "the owner or person in charge" can authorize entry onto the property). Given these parameters, it makes sense to treat consent, or lack thereof, as an element of the trespass cause of action rather than as an affirmative defense. Otherwise, a trespass cause of action would require plaintiffs to prove only an entry onto their property, which ignores our well-established definition that the entry is actionable only if it is unauthorized or without consent.

Relatedly, we recognize the fundamental notion that "[g]enerally, an owner of realty has the right to exclude all others from use of the property." *Severance v. Patterson*, 370 S.W.3d 705, 709 (Tex. 2012); *see also Marcus Cable Assocs., L.P.*, 90 S.W.3d at 700. Of course, this right to exclude may be relinquished, s*ee, e.g.*, *Marcus Cable Assocs., L.P.*, 90 S.W.3d at 700 (granting an easement is a relinquishment of the right to exclude), and therefore, mere entry onto the property of another may not always be actionable as a trespass. Further, we have stated that "[t]he misfeasance or the *wrongful act* is the trespass." *Lyle v. Waddle*, 188 S.W.2d 770, 773 (Tex. 1945) (emphasis added). This aligns with our well-established definition that trespass is "an *unauthorized* entry upon the land of another." *See, e.g.*, *Barnes*, 353 S.W.3d at 764 (emphasis added). It follows that an entry onto the land of another is wrongful, and therefore actionable, if it is without consent or authorization. *Cf. City of Watauga*, 434 S.W.3d at 591 (recognizing that consent prevents a defendant's conduct from being wrongful). Thus, to maintain an action for trespass, it is the plaintiff's burden to prove that the entry was wrongful, and the plaintiff must do so by establishing that entry was unauthorized or without its consent.

In conclusion, we hold that the jury charge here provided the well-established definition of a trespass, which includes lack of consent or authorization as an element of the cause of action. Because the charge provided the correct definition and resulted in a jury verdict and judgment in favor of EPS, any error in submitting the trespass question about a possible deep subsurface water migration was harmless. *See* TEX. R. APP. P. 61.1(a); *see also Gilbert Wheeler, Inc.*, ___ S.W.3d at ___ (declining to address a question related to a trespass allegation because "even if the submission of the trespass cause of action was error, it was harmless"). Therefore, without the need

to decide whether Texas law recognizes a trespass cause of action for deep subsurface water migration, we next address whether the trial court properly denied FPL Farming's motion for directed verdict.

III. Directed Verdict

FPL Farming moved for a directed verdict on the basis that EPS provided no evidence to support any of the affirmative defenses it pleaded, which included consent and authorization.[11] The trial court denied the motion on all grounds. Later, the trial court overruled FPL Farming's objection that the issue of consent was improperly included in the jury charge's definition of trespass and should have been an affirmative defense that EPS had to prove as the defendant.

As discussed above, we agree with the trial court that consent is not an affirmative defense to a trespass action, but rather lack of consent or authorization is an element of a trespass cause of action that a plaintiff must prove. Accordingly, FPL Farming's motion for directed verdict relied on an erroneous premise because EPS was not obligated to prove that FPL Farming consented to the alleged entry. *Cf. Croucher v. Croucher*, 660 S.W.2d 55, 58 (Tex. 1983) (stating that no-evidence challenges "are appropriate when the party without the burden of proof complains of a . . . finding"). Instead of moving for a directed verdict that EPS provided no evidence of consent, FPL Farming's motion should have sought relief on the ground that it established as a matter of law an element of its cause of action on which it bore the burden of proof—lack of consent or authorization. *See id.* (citing *O'Neil v. Mack Trucks, Inc.*, 542 S.W.2d 112, 113 (Tex. 1976)) ("When . . . the party having

[11] Although EPS included consent and authorization in the many affirmative defenses it pleaded, we note that FPL Farming also pleaded lack of consent as an element of its trespass claim.

the burden of proof appeals from an adverse fact finding in the trial court, the point of error should be that the matter was established as a matter of law . . . ."); *see also Dow Chem. Co. v. Francis*, 46 S.W.3d 237, 241 (Tex. 2001) (per curiam).

Despite FPL Farming's reliance on the wrong burden in its motion for directed verdict, we will consider its contentions because "[i]t is our practice to liberally construe the points of error in order to obtain a just, fair and equitable adjudication of the rights of the litigants." *Holley v. Watts*, 629 S.W.2d 694, 696 (Tex. 1982); *see also O'Neil*, 542 S.W.2d at 114. Thus, liberally construing FPL Farming's contentions, FPL Farming would have been entitled to a directed verdict if it conclusively established, as a matter of law, that it did not authorize or consent to EPS's alleged entry. *See Dow Chem. Co.*, 46 S.W.3d at 241 (citing *Croucher*, 660 S.W.2d at 58). At the time of its motion, FPL Farming did not argue or cite to *any* evidence upon which the trial court could have found as a matter of law that FPL Farming did not consent to EPS's alleged entry. *See* TEX. R. CIV. P. 268 ("A motion for directed verdict shall state the specific grounds therefor."). Accordingly, the trial court properly denied the motion for directed verdict and submitted the issue of lack of consent to the jury. *See Dow Chem. Co.*, 46 S.W.3d at 241 (noting that a matter of law challenge can be sustained only if it is conclusively established); *see also Collora v. Navarro*, 574 S.W.2d 65, 68 (Tex. 1978) (stating that a directed verdict is proper when the evidence leads to only one conclusion).

FPL Farming's challenge to the trial court's denial of its motion for directed verdict fails even when we liberally construe its contentions. We agree with the court of appeals' holding that FPL Farming was not entitled to a directed verdict on the issue of consent, albeit for different reasons than the court of appeals stated.

IV. Remaining Issues

EPS challenged the trial court's exclusion of the 1996 settlement agreement between FPL Farming's predecessor-in-title and EPS at the time of the initial permit applications, and the court of appeals held that the trial court erroneously excluded it from evidence. We need not address the admissibility of the settlement agreement, however, because the jury found in EPS's favor. Thus, even if the trial court erroneously excluded the settlement agreement, any error was harmless. *See* TEX. R. APP. P. 61.1(a). Because we are rendering judgment in favor of EPS and not remanding the case for a new trial, the admissibility of the settlement agreement is an unnecessary inquiry.

Similarly, because it prevailed at trial, EPS was not harmed by the submission of a jury question asking whether it committed a trespass by causing deep subsurface wastewater to migrate underneath FPL Farming's property. This lack of harm eliminates the need to address whether Texas law recognizes a trespass cause of action for deep subsurface wastewater migration.

Accordingly, we neither approve nor disapprove of the court of appeals' analysis and holding on these remaining issues.

V. Conclusion

Lack of consent is a required element of a trespass cause of action that the plaintiff must prove, and the jury charge here correctly reflected the longstanding definition of trespass in Texas. Additionally, FPL Farming failed to conclusively establish that it did not consent to EPS's alleged entry in connection with its motion for directed verdict, so the trial court did not err in denying the motion and submitting the issue to the jury. There was no harmful error in excluding the settlement agreement because the jury found for EPS without considering it. Finally, any error in submitting

the question of trespass for deep subsurface wastewater migration was harmless because the jury found no such liability, which obviates the need to address whether this is a viable cause of action in Texas. Accordingly, we reverse the court of appeals' judgment and reinstate the trial court's judgment that FPL Farming take nothing.

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Paul W. Green
Justice

OPINION DELIVERED: February 6, 2015