

From: [Sunset Advisory Commission](#)
To: [Brittany Calame](#)
Subject: FW: Public Input Form for Agencies Under Review (Public/After Publication)
Date: Thursday, August 2, 2018 3:28:38 PM

-----Original Message-----

From: sunset@sunset.texas.gov <sunset@sunset.texas.gov> On Behalf Of Texas Sunset Commission
Sent: Thursday, August 2, 2018 3:18 PM
To: Sunset Advisory Commission <Sunset@sunset.texas.gov>
Subject: Public Input Form for Agencies Under Review (Public/After Publication)

Agency: TEXAS BOARD PROFESSIONAL GEOSCIENTISTS TBPG

First Name: James

Last Name: Harcourt

Title: Manager Groundwater Advisory Unit Railroad Commission of Texas

Organization you are affiliated with: Railroad Commission of Texas

Email: james.harcourt@rrc.texas.gov

City: Austin

State: Texas

Your Comments About the Staff Report, Including Recommendations Supported or Opposed:

I am a Manager at the Railroad Commission of Texas, heading up the Groundwater Advisory Unit. All Geoscientists working in my group are required to be licensed Texas P.G.s. We investigate and determine where oil and gas operators need to place surface casing and where they place plugs when abandoning oil and gas wells to protect groundwater resources in Texas (we issue 25 to 75 determinations of this type per working day). We also determine where rock layers are sufficient to support the injection and disposal of oil field wastes (Texas has an average of 706 million barrels per month of injected liquid and 191 million MCF per month of injected gas and 10 to 30 determination issued every working day). We advise the Underground Injection Control Group (UIC) on projects involving Underground Storage Caverns (USC). Nearly every 5 to 10 years there at least one event in a USC including an explosion, collapse, or subsidence event in the State of Texas. We participate in investigations of seismic events to determine if there are factors involving Oilfield Operations.

I take exception with the statement that "the regulation of Professional Geoscientists does not provide meaningful public protection." I can and will provide documentation of the protection provided by licensed Geoscientist to the public but I will need several days to get this together.

Last but not least, 47 US States and Puerto Rico have Geoscientists license requirements and Geoscientist License Boards. Texas is the largest oil and gas producing State in the US so it is of greater utility in Texas not less utility than the majority of other States.

Any Alternative or New Recommendations on This Agency: Review and revise any policies, procedures, or fiscal practices of the Texas Board of Professional Licensing that have the potential to increase efficiency or effectiveness of the core mission but asserting that no protection is afforded to the public by licensing Geoscientist in the State of Texas and proposing to abolish the Board and License is a poorly informed opinion and extremely short sided. Texas is the largest oil and gas producing State in the US and 47 US States and Puerto Rico have determined that there is value in licensing Geoscientists and having a Geoscientist License Board.

My Comment Will Be Made Public: I agree

From: [Sunset Advisory Commission](#)
To: [Brittany Calame](#)
Subject: FW: Class II Underground Injection Control (UIC) Volumes in Texas
Date: Tuesday, August 14, 2018 12:11:47 PM
Attachments: [Geoscientist I Job Posting.html](#)
[RRC UIC Volumes Monthly 2015 2016.xlsx](#)
[P - Geoscientist I \(10241-GAU\) JGH.doc](#)

From: james harcourt
Sent: Tuesday, August 14, 2018 12:11 PM
To: Sunset Advisory Commission <Sunset@sunset.texas.gov>
Subject: Fwd: Class II Underground Injection Control (UIC) Volumes in Texas

To: Morgan Constantino,

We discussed the ways in which PG's protect the health and safety of the people of Texas and I was asked to provide additional documentation. I am an employee of the Railroad Commission of Texas (RRC) but I do not represent the RRC in this matter and this information and opinion is provided by a private citizen accessing only public information sources off public access web sites.

What is an injection well? For every barrel of oil produced there are 10 barrels of produced water that must be disposed. Most of the produced water is saltier than sea water and much of it has at least some sulfur, some natural occurring radioactive material (NORM), or other naturally occurring chemicals leached from minerals and some of it is order of magnitude more saltier than sea water. In some cases the injection is for the purposes of recovering oil and gas but the topic of UIC is so big it fills volumes and people study it for years. For the purposes of this email it probably enough to say there are several classes of underground injection wells. We can divide them up into Commercial and Mining. The mining wells include oil and gas and are exempt and that is the category I deal with professionally and there are over 30 thousand Class II UIC wells in Texas. The Commercial UIC wells are non-exempt and some inject real nasty stuff under the ground including toxic compounds and radioactive compounds. You can get Class I Commercial statistics from the TCEQ. I think they have 300 or 400 active wells in the State. The TCEQ requires all there geologic work for UIC wells to be stamped and sealed by licensed Geologists. I did Class I UIC wells in Florida for about 10 years but I have not done them in Texas. The RRC only hires licensed PG's for their work but we do prefer signed and sealed documentation, but it is not required. For the purposes of this email I am dealing with the exempt Class II injection not Class I but you should really contact the TCEQ about them. Proper engineering and construction of UIC wells can only take place if the geology is done properly by an experienced and competent geologist. In the Commercial side they required signed and sealed PG documentation. Obviously on the oil and gas side it is not required but without the geologic analysis the engineering of UIC wells is just a random stab in

the dark. I attached an excel file with 2 years of results and then I attached a link below called [Web Query for UIC Wells](#) to the public access query tool I used which you can use to double check the numbers. The queries are a little tricky but I can talk you through it if you interested. The monthly data is off of our online H-10 query. H-10 filings are for all injection and disposal wells. The volumes and quality of stuff injected into the ground in Texas means that in the absence of reliable and accurate geologic investigations there could be real risks to public health and safety. (See attached UIC sink hole film clip in Texas).

In summary, 2016 is the most recent year with complete data. In calendar years 2015 and 2016 an average of 706 million barrels per month of liquid and 191 million MCF per month of gas. There are 42 gallons to a barrel so that's over 29 billion gallons injected underneath our drinking aquifers. Converting to daily that's 23 million barrels per day and 6.3 million MCF per day. It does not include storage wells which are large structures under the ground containing crude Oil. There are hundreds of storage caverns mostly along the Gulf Coast. (See attached article on Barbers Hill)

How is this a risk to people, health, and safety? We have over 30K of these UIC wells all over Texas and if the geology is not done correctly it is a risk to our water aquifers and in some cases can cause sink holes or subsidence. I also attached a [You Tube film of a sink hole](#) that opened up along the Gulf Coast. I visited this sink hole and personally oversaw the plugging of some of the wells on the outside margins of the sink hole. My group also did the geologic investigative work on this sink hole and there is evidence that it was caused by improper engineering of one of the injection wells which resulted from a previously incorrect geologic model of the salt piercement structure which we have now updated. Without the PG's doing the investigation this would not have been discovered and the models corrected. It is PG's that make these models. The other link is for Barbers hill. I have personally gone out there to investigate explosions in cavern storage wells in 2016 (see the link below). Sink holes, underground blow outs, and spills are a risk of these UIC and Cavern Storage Facilities. Nearly every year in Texas we have one or more incidents. See also the attached advertisement for a Licensed P.G. to work in the RRC GAU Unit. This advertisement states that applicants must be a licensed PG in the state of Texas and these advertisements are also Public Access. We require P.G.'s for a reason and we have been requiring it since its inception. Its a significant quality control layer when you are dealing with stuff like this.

Daisetta Sink Hole:

<https://www.youtube.com/watch?v=MF9PO51D3tc>

Barbers Hill History

<https://www.nytimes.com/1988/11/28/us/chemicals-in-salt-caverns-hold-pain-for-texas-town.html>

Web Query for UIC Wells

<http://webapps2.rrc.texas.gov/EWA/uicQueryAction.do>

Please let me know if you have any questions. I happen to know that the Railroad Commission requests and sometimes requires P.G. signed and sealed reports for Site Remediation, Browns Fields, and Environmental Permitting (Pits and Surface disposal). Again, explaining this stuff would fill volumes. If yo have not talked with fol,s from these groups I think you may have missed real evidence that P.G. actually protect the health and safety of people and resources in Texas.

James G. Harcourt

From: [Sunset Advisory Commission](#)
To: [Brittany Calame](#)
Subject: FW: Class II Underground Injection Control (UIC) Volumes in Texas
Date: Wednesday, August 15, 2018 8:55:08 AM

From: james harcourt
Sent: Wednesday, August 15, 2018 8:19 AM
To: Sunset Advisory Commission <Sunset@sunset.texas.gov>
Subject: Re: Class II Underground Injection Control (UIC) Volumes in Texas

Morgan,

There is a lot going on in Texas, and all over the world, with oil field induced seismicity too. We do quite a bit here with oil field seismicity and all the folks doing the work are P.G.'s both in GAU and the UIC group. Its all about the Underground Injection Control (UIC) or lack there of! See links below. This is not a scare tactic or alarmist rhetoric and it is not going to be a problem as we are on it and it is something we basically now understand and can measure and control with proper investigation and regulation thanks to hard working but under appreciated P/G's. We are still learning about our earth and how to protect the health and safety of our citizens while letting big industry do what it has to do to provide us with the resources we need. Geologists do protect the safety and health of the societies they live and work in.

<http://www.rrc.state.tx.us/all-news/102814b/>

<https://www.mysanantonio.com/business/article/Texas-other-states-will-collaborate-on-oil-12241829.php>

https://www.washingtonpost.com/news/speaking-of-science/wp/2017/11/24/fracking-and-other-human-activities-are-causing-texas-earthquakes-study-suggests/?noredirect=on&utm_term=.b0bd6f36a846

Thanks for you time.

James Harcourt

On Tue, Aug 14, 2018 at 12:10 PM, james harcourt

To: Morgan Constantino,

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James G. Harcourt, P.G.