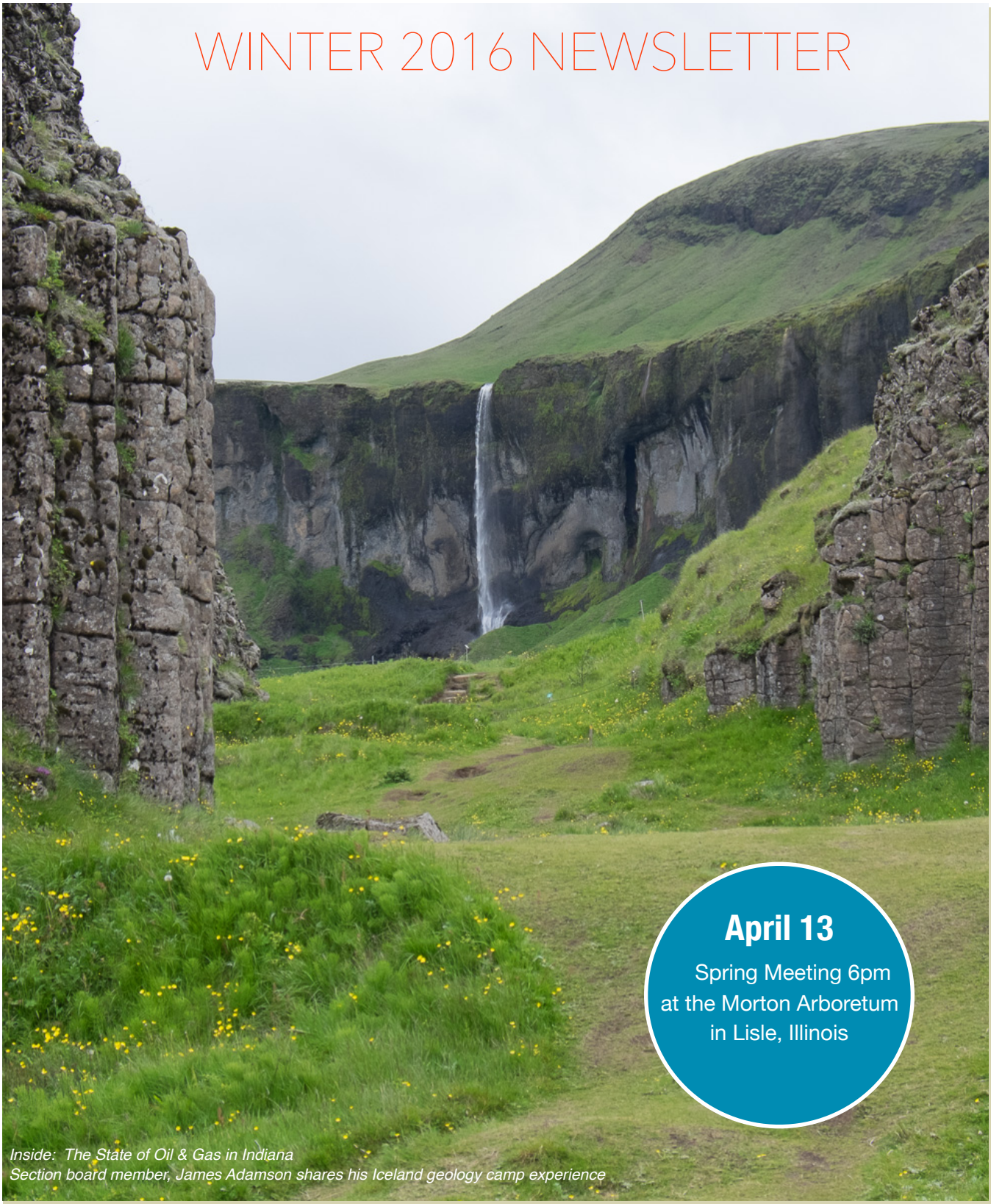
WINTER 2016 NEWSLETTER



April 13

Spring Meeting 6pm
at the Morton Arboretum
in Lisle, Illinois

Inside: The State of Oil & Gas in Indiana
Section board member, James Adamson shares his Iceland geology camp experience

Illinois-Indiana Section: American Institute of Professional Geologists

Section President's Message

Jeff Groncki - CPG-11118, Walgreen Co.

This newsletter marks the start of my 4th year as President of the Section. Over the past 4 years, a lot has changed within our section and that change continues. While change is challenging, we welcome the opportunities to be more relevant and more value oriented to our membership.

What is inside?

With mixed emotions, I announce Ramona Cornea will be retiring from AIPG as our Section Treasurer. Ramona joined the AIPG Section board long before I moved to Illinois from Michigan. As long as I can remember, she has managed the finances of our section with steadfast consistency and accuracy. Her passion for 'seeing' geology has been a guiding principle for our section. In fact, most of the field trips that we've offered as a section, including those offered when we hosted the AIPG national convention are due to Ramona's leadership. It's been a great journey working alongside Ramona over the past 10+ years. We will miss her knowledge, professionalism, and relentless enthusiasm.

On a lighter note, we have two very exiting bits of news to share with you:

•This winter we approved Anna Sutton Stinson (Stantec) as a Section Board Member. We are very excited to have Anna on the Board, and you can learn more about her later in the newsletter.

•We are proud to announce that Northern Illinois University (NIU) is our 2nd Student Chapter and the charter has been approved by AIPG National. Since its inception in 1969, the NIU Department of Geology and Environmental Geosciences has continuously evolved and remained a sector leading institution. We are hopeful that the partnership with AIPG will help students understand future opportunities and bridge the gap from academia to the community of practicing Geologists. Special thanks to Harvey Pokorny (Student Section Sponsor) for spearheading this effort and to David Pyles (AIPG National Vice-President) for steering this through the approval process at National Headquarters.

It is unfortunate that the budget impasse that the State of Illinois is experiencing is resulting in delayed implementation of the Geology Act changes. This is also restricting graduates and professionals from sitting for the ASBOG exams. As a licensing board member, I have a direct line of communication with the State and will provide updates to our membership as necessary.

Looking forward, the Spring Meeting is scheduled for Wednesday, April 13, 2016 at Morton Arboretum. Greg Dunn of the IEPA and Dick Berg of the ISGS are both presenting. I look forward to seeing you on April 13!

Executive Committee

NEWS & UPDATES

Summer Field Trip Planning

Our section is currently evaluating field trip options for the summer of 2016, we hope to announce the details at the spring meeting on April 13.

North Central GSA Meeting, April 18-19 in Champaign-Urbana, IL

The 50th Annual Meeting will take place at the I Hotel and Conference Center on the campus of the University of Illinois at Urbana-Champaign, USA. In celebration of the 50th year of North-Central Section meetings, presentations and posters will highlight advancements in the geosciences since 1967, review developments and current or emerging research issues in the various geoscience disciplines, and explore emerging research techniques or technologies.

Impacts to IEPA Bureau of Land - State Budget Impasse

The budget impasse has impacted the ability of the IEPA BOL to pay UST Fund reimbursement claims, to award grants, and to pay contractors. These impacts to payouts will remain until a budget is passed.

AGI Paper - Status of Recent Geoscience Graduates

The AGI published an interesting report that evaluates the level of preparedness of recent geoscience graduates. It includes an analysis of exit interviews from around the country.

http://www.americangeosciences.org/sites/default/files/ExitSurvey_2015_web.pdf

Paperless Licensure Renewals in Illinois Effective February 23, 2016

The Illinois Department of Financial and Professional Regulation is pleased to announce that paperless licensing and renewals have now been implemented. Regulated professionals will now be able to renew their license quickly and easily online, and be provided proof of licensure through email and IDFPR's License Lookup application. The move to paperless technology is part of State efforts to modernize and will save the state nearly $3 million in postage, paper and printing costs over the next five years.

Eastern Section of American Association of Petroleum Geologists: 2016 Annual meeting in Lexington, KY

Several hundred professional geologists, as well as educators and students from around the eastern U.S., are expected to converge onto Lexington, KY, for the annual meeting of the Eastern Section of the American Association of Petroleum Geologists, September 25-27, 2016. With a theme of "Basins to Barrels," the meeting's program will focus on the opportunities and challenges of energy resources in the Appalachian, Illinois, and Michigan Basins, while offering participants the opportunity to sample the region's famous variety of bourbon whiskeys.

Co-hosted by the Geological Society of Kentucky and the Kentucky Geological Survey in the heart of Bourbon Country, the 2016 meeting will be at the Lexington Convention Center complex and adjoining Hyatt Regency Hotel in downtown Lexington. Meeting organizers are planning technical sessions and workshops on current industry issues, regulations, and research. Pre- and post-meeting field trips to unique geologic features in the Bluegrass Region will be offered on the 24th and 28th.

The meeting will kick off Sunday night with an icebreaker in the exhibitor hall followed by the popular "Jammin' Geologists" event, with entertainment by musically-inclined meeting participants. There will also be an off-site event Monday night, and networking breakout sessions throughout the meeting.

Professional organizations and energy-sector companies are encouraged to exhibit or sponsor events to promote their products and services.

For information and updates, please visit the website at http://www.esaapgmtg.org

25 Years at AIPG!

We have four of our very own section members who are celebrating 25 years with AIPG. Please join us in congratulating the following CPGs.

- Dr. Richard Berg, CPG 08041
- Mr. William Bow, CPG 07966
- Mr. Harvey Pokorny, CPG 07919
- Mr. Peter Vagt, CPG 07947
- Mr. Donald Brice, CPG 07986
- Mr. Ronald Hosek, CPG08029
- Mr. Solomon Isiorho, CPG 07788

Section Votes Anna Sutton Stinson to the Board

Anna has over ten years of professional experience in the environmental consulting field. She has experience with project management for major oil companies; work planning, field work, and rRCRA program reporting, Illinois EPA, Indiana DEM, and New Hampshire DES; proposing, managing, and conducting Phase I and II ESAs; managing and conducting field work including soil, groundwater, soil gas, and air sampling, remediation system pilot testing and O&M, monitoring well installation, and aquifer testing; and training new hires in field work and conducting Phase I ESAs.

She also enjoys her dogs, traveling, camping, hiking, eating, geek culture, feminism, yoga, theatre, playing bluegrass music, fiber arts, and soap making. She is active on the Fox Country Players board, the Kendall County Soil and Water Conservation District board, and Stantec's corporate Diversity & Inclusion Council.

REGULATORY UPDATES

Lobbyist Report "10 Year Extension of Illinois Licensure Act"

Brad Babcook, Director of Legislative Affairs

A number of Chemical Industry Council of Illinois (CICI) members employ professional geologists. As the Professional Geologists Licensure Act was scheduled to sunset on January 1, 2016, and with AIPG – Illinois Indiana Section not having a lobbying presence in Springfield, CICI, through a contract with its for-profit subsidiary Monroe Street Associates, ensured a law would be passed to extend the licensing act for another 10 years.

CICI was able to get a bill drafted and secured the necessary sponsors in both the House of Representatives and the Senate. CICI presented the bill to the Department of Financial and Professional Regulation (DFPR), which requested some administrative changes to better conform to their regulatory structure since the last time the Act was amended. These changes, once approved by AIPG members here in Illinois, were made through an amendment in the Senate. The bill received unanimous support throughout the legislative process in both the House and Senate after some lobbying of particular members in each chamber's respective committees. Once passed by the legislature, CICI lobbied the governor's office to ensure the Governor's signature on the bill.

The bill was SB 749 (Martinez, D-Chicago), now PA 99-26, and it extends the Professional Geologist Licensing Act from January 1, 2016 to January 1, 2026 with the aforementioned administrative changes. A copy of the law can be found here: http://www.ilga.gov/legislation/publicacts/99/PDF/099-0026.pdf

Illinois EPA Bureau of Land Staffing Changes

Lynn Smith – MEM-2506

In 2015, the IEPA Bureau of Land (BOL) reportedly had 13 staff retire, as a result there have been numerous staffing changes.

As of December 2015, the most notable changes for BOL staffing follow:

- Heather Nifong has been assigned Acting Chief of the Bureau of Land, effective October 2015.
- Steve Nightingale retired in November 2015 and Joyce Munie replaced him as Permits Section Manager, effective December 1, 2015.
- Greg Dunn is now Acting Manager of the Remedial Project Management and Leaking Underground Storage Tank (LUST) Sections replacing Joyce Munie.
- Tom Henninger retired from his position as Unit Manager in the LUST Section in November 2015.
- Steve Colantino moved from the Brownfields Program and is now Acting Unit Manger in the LUST Section, replacing Tom Henninger.
- Mike Charles from the Brownfields Program will assist Greg Dunn with both the Remedial Project Management and LUST Sections.
- Dave Walters, Section Manager for the Waste Reduction and Compliance Section, reportedly retired December 31.

As of December 2015, the most notable changes for the Bureau of Water are as follows:

- Bud Bridgewater, Manager of Field Operations Section, and Jeff Hutton retired in 2015. Mr. Hutton reviewed sludge application permits and was the technical lead for the stormwater permit program. No replacements have been announced yet for Mr. Hutton.

Indiana IDEM Update

With Indiana's 2016 General Assembly legislative session currently underway, no new regulatory guidance has of yet been issued. However, now is a great time to highlight the Indiana Department of Environmental Management's publically available technical guidance to assist consultants conducting environmental investigations throughout the State.

Navigating through IDEMs 2012 Remediation Closure Guidance can be challenging. The focus of investigation is now on pathway elimination rather than meeting numerical criteria. Often the agency receives investigative reports that have any number of inadequacies in the characterization which lead to incomplete reporting. This incomplete characterization and documentation leads to multiple phases of investigation where the subsequent costs are passed along to property owners, responsible parties, insurance, and in some instances taxpayers. In an effort to promote investigative "best practices", various departments within IDEM routinely issue Technical Guidance, which is made publically available on IDEMs website and is sometimes promoted at quarterly Consultant's Day events.

IDEM's Office of Land Quality offers Technical Guidance in several categories, such as Sampling Guidance, Closure Guidance, and Investigative Guidance. Useful topics include:

- Investigation of Manmade Preferential Pathways,
- Proper Investigative Techniques for Fractured and Shallow Bedrock,
- Vapor Remedy Selection and Implementation,
- Various sampling and remedial considerations.

These and other topics can get investigators on the right track at the beginning of site investigations.

Utilization of the guidance should streamline the path to closure on Indiana sites while providing scientifically sound investigative guidance to site investigation and environmental cleanup in surrounding states.

Guidance can be found at http://www.in.gov/idem/landquality/2328.htm.

New guidance documents are periodically uploaded to the website.

SPRING MEETING ANNOUNCEMENT

Wednesday, April 13, 2016: Morton Arboretum, Lisle, Illinois: 6pm - 9pm

The Illinois-Indiana Section of AIPG is excited to announce that the Spring Section Meeting will be held on April 13, 2016, at the beautiful Morton Arboretum facility in Lisle, Illinois. The Morton Arboretum is a terrific venue to mingle with colleagues and vendors and enjoy a light dinner (included) and drinks from the cash bar. The meeting will feature important updates and presentations by Dr. Richard C. Berg and Mr. Greg Dunn, PG. We hope to announce our summer field trip at the meeting and share other exciting news.


Sunset at Morton Arboretum, Photo: Joe Lekas


Dr. Richard C. Berg, Director of ISGS

Featured Speakers

Dr. Richard C. Berg (CPG 08041) is the Director of the Illinois State Geological Survey and will join us to present a summary of the Survey's ongoing work and discuss the budget conditions issued by the governance of Illinois.

Mr. Greg Dunn, PG is one of the few remaining at the IEPA BOL, after 13 staff retired in 2015. Greg now serves as the Acting Manager of the Remedial Project Management and Leaking Underground Storage Tank (LUST) Sections and will talk about the changes at BOL and discuss other important information and updates.

2015 Fall Meeting & Vendor Technology Night Recap


Craig McCammack

Craig McCammack – CPG 11731, V3 Companies

The AIPG Fall Section Meeting consisted of our annual Vendor Technology & Networking Night in combination with an Innovative Technologies Workshop. The event was held on October 28, 2015 at the Morton Arboretum in Lombard, Illinois. The Morton Arboretum is a beautiful venue, providing a relaxed atmosphere to mingle with colleagues and vendors.

First off, we want to take this opportunity to acknowledge all of the exhibitors who were on hand to discuss their services and capabilities by including their company logos, and to sincerely thank them for their support of AIPG's Illinois / Indiana Section activities throughout the year. At the halfway point of our meeting, the vendors and exhibitors were available to talk to participants about the engineering and geoscience services they provide throughout the region.

The workshop program was comprised of four diverse topics, each one providing worthwhile information and practical guidance to the participants.

- Darryl Carstensen, P.E., of Huff & Huff, discussed the topic of Building Control Technologies (BCTs) for Vapor Intrusion under Illinois TACO, focusing on the selection of appropriate BCTs for typical situations and examples of their use in real-world situations.
- Keith Oswald, P.E., with V3 Companies, presented a captivating look at the current challenges being faced within the Calumet Open Space Reserve, where the balancing of eco-based recreation, phytoremediation and ecotox risks will achieve the redevelopment goals for these public lands.
- Martin Hamper, P.G., from GZA GeoEnvironmental, Inc., offered a detailed and very practical presentation of the steps that must be successfully navigated to satisfy the Illinois TACO Pathway Exclusion regulatory requirements.
- Harvey Pokorny, CPG, with NAVFAC Midwest Great Lakes (and an AIPG Illinois Chapter Board member), gave us an overview of the High Resolution Source Zone Characterization of deep, highly contaminated soil and groundwater at the Naval Industrial Reserve Ordnance Plant (NIROP) Superfund site, located in Fridley, Minnesota.

All participants received an electronic file with meeting presentations and were eligible to receive a certificate for CEUs.

STATE OF OIL & GAS IN INDIANA

Herschel McDivitt is the Director of the Indiana Division of Oil and Gas

Oil and gas operators have been steadily producing wells in Indiana since the early days of the Trenton Field boom in the late 1890's. Throughout the past 120 years, annual production and drilling have fluctuated greatly as operators encounter a variety of factors which influence the profitability of oil and gas production. In fact, those who have been in the business for any length of time will attest to the fact that periods of "boom" followed by "bust" are not uncommon. Until recently, the most significant downturn was last experienced in the 1980's. This "bust" cycle was especially devastating to the oil and gas industry not only in the Illinois Basin but throughout the U.S. and abroad as unemployed geologists and petroleum engineers pursued other career paths and drilling rigs and other vital equipment needed to support a growing industry were mothballed or scrapped.

From a high level perspective, perhaps the most important factor influencing these cycles is geology since it dictates where and even whether oil and gas may be present in commercial quantities. Very simply, if oil and gas resources just aren't there, even the use of the very latest technology will be futile. Of the 92 counties in Indiana, most production has been limited to about 18 counties along the Cincinnati Arch in east central Indiana where the Trenton Boom occurred, and around 13 counties in the Illinois Basin in southwestern Indiana. As a state, Indiana ranks about 24th in total oil and natural gas production in the US.

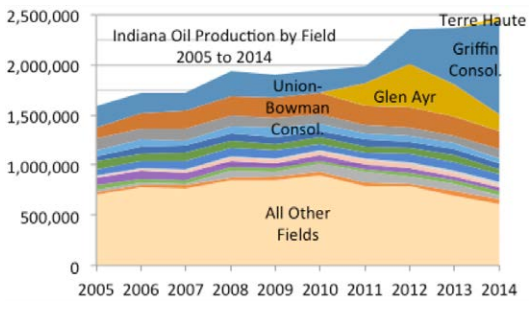
Advancements

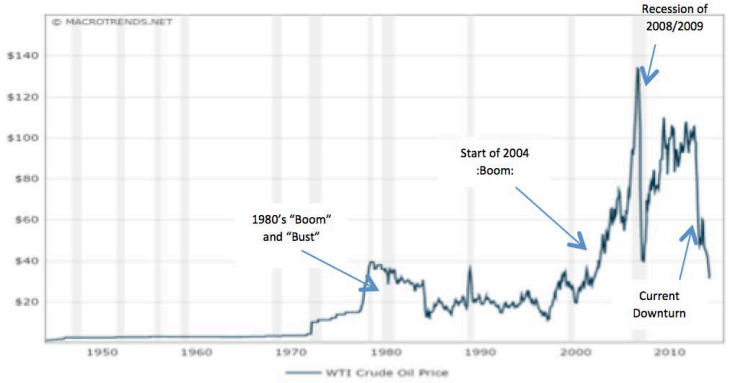
Changes in technology also influenced oil and gas activity cycles over the years. Nearly all wells in the Trenton area were drilled by cable tool rigs. Rotary drilling equipment was developed in the 1930's allowing wells to be drilled deeper and more quickly. Much of the expanded oil development in the Illinois Basin has been through the use of rotary rigs. Water-flooding was introduced in the 1950's also boosting production at that time. Hydraulic fracturing was also introduced at nearly the same time helping to increase production even more.

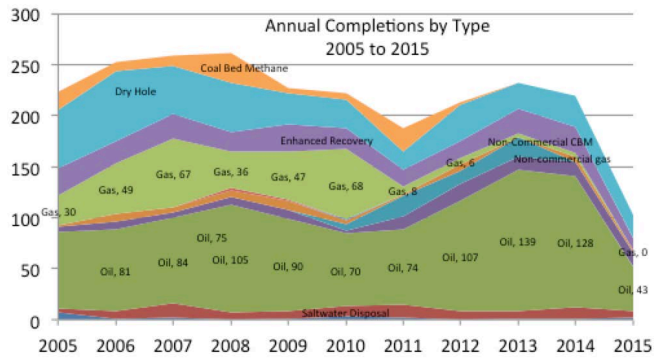
In recent years, the use of horizontal drilling has played an important role in increasing the development of both oil and natural gas in Indiana. Short length laterals (<200') have been successfully used to increase oil recovery by a number of operators in Gibson, Posey, and Vanderburgh Counties. Longer horizontal laterals (4,000' or more) have been widely used in New Albany Shale gas wells in Sullivan, Knox, and Daviess Counties.

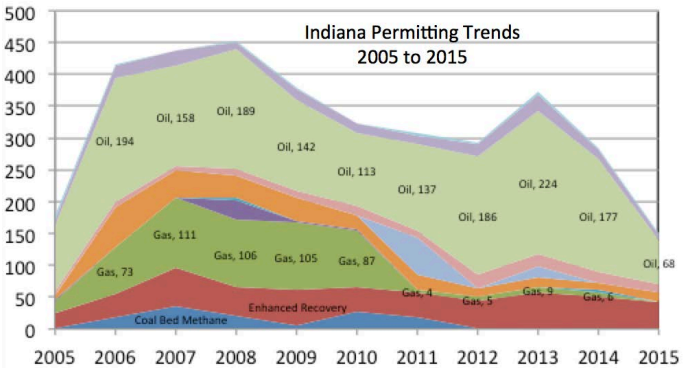
Historically, hydraulic fracturing has been utilized on only about 20 percent of new oil wells drilled using about 200 to 250 barrels of fluid. In 2011, operators began using volumes of 7,000 barrels or more of total fluid to conduct multi-stage fracs in nearly 100 percent of new vertical oil wells completed in mid-Mississippian carbonates in the Griffin Consolidated Field in Gibson and Posey Counties. One operator experimented with drilling horizontal wells and using more than 45,000 barrels of total fluid per well to conduct multi-stage fracs on several wells in these same formations. The resulting production from the Griffin Consolidated Field can be seen on the following chart. Note that production from the Griffin Consolidated Field since 2011 has resulted in Indiana's overall oil production increasing each year through 2014 even though nearly every other field has been declining.

Another point of interest is the influence of the Glen Ayr Field on Indiana's oil production from 2011 to 2014. Located in eastern Vigo County just north of the Hulman Field airport, Glyn Ayr development began in 2011 with the drilling of several high angle directional wells into a Devonian lime structure. This production helped boost Indiana's oil production to a 10-year high during 2011 and 2012.









Economics & Current Situation

Perhaps the other most recognizable factors affecting oil and gas activity cycles are economic, the greatest among these being the actual price of the commodity. It's easy to understand how high commodity prices encourage more drilling and completion activity, while low commodity prices (especially those following a period of extended higher prices like we are currently seeing) will discourage investments vital for supporting new drilling and completion activity. The graph below depicts the West Texas Intermediate (WTI) posted crude oil price from the 1940's to the present. There are at least 4 features showing significant swings in crude oil pricing during this period. 1st is the boom and bust cycle of the 1980's. This cycle was followed by a period of nearly 20 years of relatively stable prices. The 2nd swing begins around 2004 with substantial increases in crude oil price even up through 2014 despite the 2008 recession (the 3rd event) which temporarily brought prices down sharply but rebounded steadily to near pre-recession levels. The 4th is the current global collapse of crude oil prices that began last summer which have caused the current angst in the oil patch.

It should be noted that crude oil prices paid to Illinois Basin operators are generally about $7 dollars per barrel below the WTI price. The posted price for Illinois Basin crude oil was around $98.25 in July 2015, to a low of $19.75 at one point in January 2016. As this article is being written, the posted price for Illinois Basin crude oil is $26.00.

Evidence of the impact of the 2004 "boom" cycle on oil and gas activity in Indiana is clearly seen in the following charts. The first shows overall permitting activity for the period 2005 to 2015 and the second depicts well completions by year during the same period. With few exceptions, both charts depict similar trends of increased activity when prices were rising, and significant decreases in the same activities when there are prolonged downturns in commodity prices.

I haven't included much discussion about natural gas prices and trends over the past 10 years. Prior to the 2008 recession, natural gas prices tended to follow the same general tendencies as crude oil. Henry Hub spot prices steadily rose to over $12/mcf until the recession plunged prices to around $3.00 in early 2009. Unlike crude oil, however, which saw prices begin to rebound by mid-2009, natural gas prices have consistently remained flat even declining slightly to just over $2.00 recently. Other factors besides the recession have contributed to the lower gas prices including the proliferation of shale gas production from other regions and milder winter temperatures.

Rising gas prices through 2008 helped drive an interest in drilling New Albany Shale (NAS) gas wells in Indiana evident in both trend charts. NAS attracted much attention during this period as operators clamored to open up unconventional shale gas resources in many areas of the country. NAS was considered to be a promising play alongside others undergoing development at the time like the Antrim, Fayetteville, Woodford, and Barnett shales.

Two things brought an abrupt halt to NAS development in Indiana. Most important was the very disappointing productivity from NAS wells especially when compared against other shale plays like the Marcellus and Utica in the Appalachian Basin. High volume hydraulic fracturing is vital to bringing in successful gas wells in nearly every other U.S. basin. However, hydraulic fracturing was only attempted on a few NAS wells here with no improvement in productivity. Those results, coupled with declining natural gas prices brought development of NAS in Indiana to a virtual end by 2011. Indiana's gas production shown in this graph very clearly reflects this. With higher costs associated with developing horizontal shale gas plays and the tremendous successes with other more notable shale plays in the U.S., it is unlikely we will see any significant development of NAS for a while until prices improve and better technology is brought to the marketplace to unlock the gas producing potential of this important gas resource in the Illinois Basin.

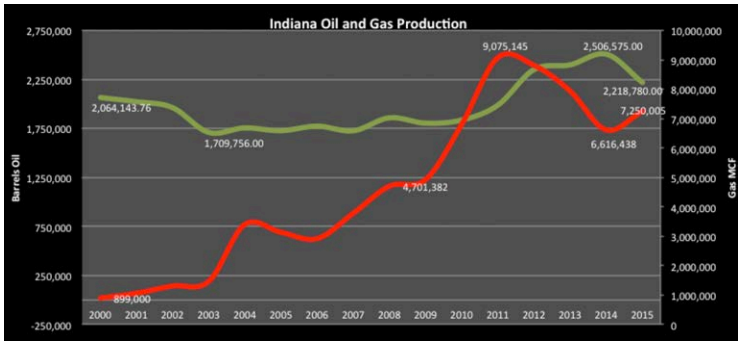
Oil development in Indiana increased steadily during this period through 2008. While the recession driven price declines slowed development down somewhat, by 2012, when crude oil prices had rebounded to over $80/bbl in the Illinois Basin, permitting and completion activity continued to grow. Much of the growth during this period was concentrated in the Griffin Consolidated Field as discussed earlier. However, the charts clearly show a major falloff in permitting as well as completion activity beginning in 2014. The production chart also shows the impact of the current downturn for

2015 production. No doubt this trend is likely to continue until crude oil prices begin to improve.

Any likelihood of significant rebound in energy prices near term is difficult to predict. For the past several months everyone following crude oil prices has been eagerly looking to see a clear bottom in the market followed by a sustained rebound. Nothing of the sort seems to have occurred yet and only time will reveal it when it does occur. There seems to be a general consensus among many energy analysts that current conditions are likely to be with us at least through the remainder of 2016 and perhaps even longer.

The impacts upon the oil and gas industry in the Illinois Basin are being felt by operators large and small. News of cutbacks in spending and personnel are become more and more frequent. Cutbacks apply not only to oil and gas operators, but also to drilling contractors; well service companies; construction contractors; welders; parts, equipment and supply companies; consulting geologists; petroleum engineers; contract well tenders; trucking firms and many others. Wells marginally economic at $80/bbl are of necessity being shut in while operators preserve cash flow in the short term and consider their options for the long term which at some point will require investing in well plugging and abandonment costs. Workovers and other normal maintenance on producing wells are being deferred unless the costs can be recouped within a short period of time.

State and local governments relying on oil and gas tax revenue are also feeling the effects of this downturn. For example, the Division of Oil and Gas receives the majority of its operating funds from the Petroleum Severance Tax paid on oil and gas production, as well as from permit fees. These revenues have been steadily declining from a monthly average of around $225,000 before the latest downturn, to around $85,000 in December, 2015. Like everyone else connected in some way with the oil and gas industry, we have to adjust priorities, reduce expenses, and become even more efficient in the way we perform our core responsibilities to remain sustainable.



Closing on a Positive Note

When Jeff Groncki first contacted me about writing an article for this issue of the AIPG newsletter, he asked if I could write about the state of oil and gas in Indiana given the current turmoil and capture my perspective on how it affects practicing geologists. I eagerly accepted the invitation but have found it very challenging once I began putting my thoughts to paper realizing just how our current state truly is affecting practicing geologists and others. It's difficult for some to envision any positives in the current conditions or identify meaningful opportunities. Nonetheless, I feel it important to try to end this article on an overall positive note, being ever mindful of a 17th century adage "fine words butter no parsnips." Fine words count for nothing while actions mean much more than flattery or shallow promises. Most of the phenomenal growth in U.S. oil and gas production over the past 8 to 10 years has involved larger, well capitalized oil and gas companies reaching outside their normal base of operations and into other basins where they have achieved great success in developing new reserves. The Illinois Basin is no exception. Much of the growth in oil and gas development in Indiana has involved players who were largely unknown previously in the Illinois Basin. These companies have successfully made sizeable acquisitions and acquired large acreage positions, and made solid investments in new drilling prospects that have grown oil and gas production in our state in ways that haven't been seen for the past 18 to 20 years. The current market conditions have caused nearly all of these companies to cut back plans for continued growth or expansion. However, the Illinois Basin has always been the homes for many smaller sized operators who too been very successful over the years in developing their reserves and still hold on to assets with upside potential. Given the challenges of the current market, many of these operators are dusting off old maps and looking for ways to get "back to basics" with tried and true methods that have worked for them all along. Since they don't have their own geologists on staff, many will be seeking geologists to help them evaluate their reserves and identify locations which may have been overlooked in the past or simply lost in the shuffle with the business of the past decade or so. Opportunities like this, while they may be fewer in number, still exist for those who find them.

ICELAND GEOLOGY CAMP - BACK TO UNIVERSITY!

James K. Adamson, PG - MEM 1532

Last July, I signed off from the real world for 24-days and participated in a geology field camp of Iceland. The course was led by Dr. Jim Reynolds of Brevard Mountain College in North Carolina. Dr. Reynolds is an authoritative geologist of Iceland and the Galapagos Islands. I had first met Dr. Reynolds on a multi-day Geological Society of America (GSA) field trip in the Scablands of Washington, where my long-term desire to get to Iceland in a geology capacity was rekindled.

There were twelve of us, including students from several universities, I was one of the old people at 34. We were outfitted with a large wall tent for studying, socializing, cooking, and dining. My two-person tent and down sleeping bag made the perfect base to attempt sleeping in 24-hour sunlight, synthesize notes, practice Icelandic pronunciations, and sometimes escape what can be expected during the evenings at geology field camp. The 24-hour sunlight combined with the fascinating geology made it too easy to forget about sleep. I often ventured up volcanoes, craters, and explored other peculiar volcanic and glacial landforms well into the morning hours.

It is very difficult to summarize this trip to a geoscience audience in a short newsletter, but here it goes! The trip was intensive and oriented around seeing a lot of Iceland. We wasted no time, immediately upon arrival at the Keflavík airport we started exploring the geothermal area of Seltun and Gunnuheur, where steam vents, boiling and exploding mud pits initiated my excitement for what was to come (Figure 1). At Reykjanesviti, the southwestern rift zone comes ashore and we stood between the North American and Eurasian plates on a micro-plate. We climbed up a graben composed of pyroclastic breccias and pillow basalts and sketched the recent tectonic and volcanic landforms (Figure 2).

Figure 3. Gulfoss waterfall, canyon carved by paleo-floods plucking through the columnar basalts

The next few days were busy both socially and scientifically, we based at a campground walking distance from downtown Reykjavík and explored the Þingvellir escarpment, Gullfoss waterfall (Figure 3), and the Haukadalur geyser field. By this time, the group personalities were well presented, I had developed a reputation as having a dry Canadian sense of humour, difficult to find, and always the last one back to meeting points. I was having the time of my life exploring the geology of Iceland.

The Snæfellsnes Peninsula was a special place, hiking up and around the Eldborg spatter cone was a highlight, the spatter cone is dated between 5-8 kya, about 60 m high and 150 to 180 m diameter (Figure 4). One evening while camping along the ocean at Arnarstapi, I climbed a mountain called Stapafell (526 m) and observed a 350 m thick sequence of volcano-sedimentary rocks, gaining newfound respect for the complexity of volcanic processes and diversity of associated rock types. That night, I also realized that climbing these mountains can be a bit sketchy, its very difficult to find competent rock. Regardless, I made it to the top just after midnight, enjoyed a half hour of breathtaking peace, reflection, and views before my adventure back down, which is another story in itself. I was back in my tent by 2 am, with only minor injuries from aggressive Arctic Terns. The next day, we observed a shield volcano, a tuff cone, and wrapped up our exploration of the peninsula at Bjarnarhöfn farm, with a traditional tasting of putrefied shark.

We covered Northeast Iceland in a few days, with visits at Grábrók cinder cone, Hvitserkur dike (Figure 6), the basalt plug of Borgarvirki, and the Akureyri area. I was amazed at the expansiveness of recent glacial

Figure 1. The Seltun geothermal area in the southwest rift zone

Figure 2. Graben at Reykjanesviti, photo taken between the Eurasian and North American plates. One of the youngest places on earth.

Figure 4. Eldborg spatter cone, 60m high and 180m wide. Last eruption 5 - 8 kya.

landforms and the fjords, some of which extend over 100 km inland. In one glacio-fluvial valley, I counted over one hundred kames. The Tujas were incredible landforms, flat table top mountains extending high above the valleys were formed by subglacial volcanic eruptions during previous glaciations, as the glaciers

Figure 5. Gabbro xenolith

retreated and melted, the imposing mountains were left behind. The flat mountain top represents the former top of the glacier. It is humbling to realize how young these landforms are, and how fire and ice can work together to create astonishing mountains.

In the northern part of the country, we setup a nice lakeside base camp at Mývatn for three days. From here we investigated the Skútustaðir rootless craters (Figure 7), Dimmuborgir subsidence feature, Hverfell tuff cone, Dettifoss waterfall, Hrossaborg cinder cone, Námafjall Hverir geothermal area, and the Mývatn Fires and Krafla Fires lava flows (Figure 8), in the northeastern rift zone. I was particularly amazed by the Viti Maar, an 800 m wide, 150-200 m deep crater that resulted from a subterranean explosion of superheated groundwater, this crater was created in 1875! (Figure 9). Another highlight was observing a cross sections of the feeder dike at Hrossaborg, you could see the dike extending upwards below the cinder cone thanks to the canyon below scoured by jökulhlaups (catastrophic glacial outburst floods), see Figure 11.

Continuing north, we investigated unbelievable jökulhlaup landforms at Ásbyrgi and Hljóðaklettar. In the Ásbyrgi area, the tremendous power of the paleo-floods was humbling, the flows scoured huge canyons, ripped apart the core of a volcano (Figure 10), left coulees, a 100 m high dry waterfall, and huge sub-rounded eratics remain atop a scoured basalt plain. Up to 900,000 m3/second of water came ripping through this area during its largest floods, not much less than the cumulative flow of all of the world's rivers today. At the northernmost point of mainland Iceland at Hraunhafnartangi on the Melrakkasletta peninsula. We debated a skinny dip in the Arctic Ocean, but the water was rough, it was bitter cold and beginning to snow, maybe next time.

The drive from Vopnafjörður to Egilsstaðir was a glacial geology paradise. Lateral, medial, terminal moraines, kames, eskers, epic glacio-fluvial terraces, are just some of what can be observed along this route. The continental scale of these landforms offered my imagination a glimpse of what some areas of the US Midwest may have looked like immediately following the retreat of the Wisconsin glaciation, before soils and vegetation were established.

We explored the East Iceland fjords, observing some of the older rock of Iceland (Miocene age). Dikes were exposed everywhere, cutting and criss-crossing through the inland dipping mountain sides that consisted of basalt flows, intercalations, and tuffaceous rock. We discovered zeolite zones, explored rhyolitic intrusions, and also tracked down some obsidian. The group was growing more tired, and the expected range of group dynamics was evolving, my late arrivals to meeting points were becoming less tolerated. After exploring East Iceland, the trip across South Iceland was highlighted by investigating the glaciers at Hoffelsjökull, Jökulsárlón, Skaftefellsjökull, and Sólheimajökull (Figure 12). We spent a day observing the landforms and geology of the 1783-84 Laki fissure eruption, and ended the day logging exposed formations at the Fjaðárglúfur canyon.

Before returning to Reykjavík, a day and night was spent on the island of Heimaey, we explored the island and climbed the still steaming Eldfell volcano that erupted in the town of Vestmannaeyjar in 1973. That last field night was a memorable one, a few of us climbed a crater, offering tremendous views, an "almost" sunset, and hundreds of curious Arctic Puffins literally whizzing by our heads. It was an amazing way to close out a trip I will never forget!

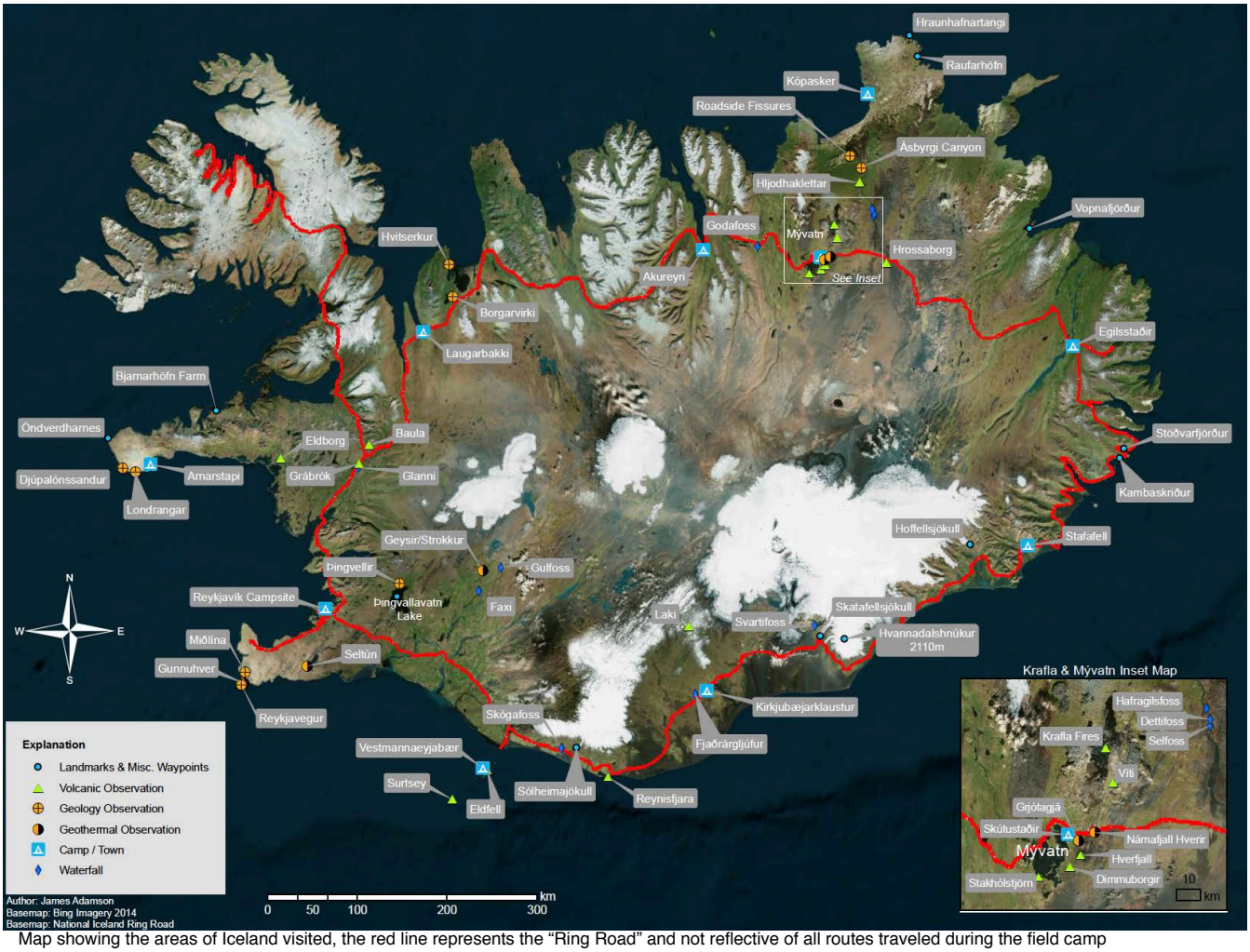
Figure 6. Hvitserkur dike, left standing

The geology camp allowed me to better understand terrestrial, submarine, and subglacial igneous and volcano-sedimentary processes and rock types. I am exited about applying this in my work througout the Caribbean, Central America, and South America. Iceland also perfectly suited my Quaternary geology background from British Columbia and fed my childhood fascination with catastrophic outburst floods. I also must highlight the importance of being with an expert that knows the country on such a trip. Even as an experienced geologist, I would have missed so much if Dr. Reynolds was not there to point things out or encourage us to "look closer". The trip was most special because I was able to sign off and be nothing other than a field geologist, learning and living in Iceland. It took a few days for my brain to settle from my high paced life of running a business, but once I was there, it was a euphoric place both mentally and physically. I also ended up with an A in the course and a few new friends!

Figure 7. Rootless craters at Skútustaðir

Figure 8. The Krafla fires, still cooling off

Figure 9. The Viti Maar, crater from an explosion of superheated groundwater in 1875.



Map showing the areas of Iceland visited, the red line represents the "Ring Road" and not reflective of all routes traveled during the field camp

Figure 10. The more resistant horizontally jointed basalt core of a volcanic feeder system left in place, jökulhlaups have scoured all the rock that once concealed it beneath the surface

Figure 11. The feeder dike exposed underneath the Hrossaborg cinder cone. Cross section view thanks to jökulhlaup scoured canyon

Figure 12. Svartifoss waterfall exposing beautiful columnar jointed basalts. Figure 13. Skaftafellsjökul Glacier with bands of ash, and medial moraine visible

Call for Financial Support to Promote the Interests of Illinois Professional Geologists

Martin Hamper, CPG-10250

Professional Geologists in Illinois have made some strides since our licensing law was enacted in 1996. We have always relied on volunteer efforts to represent our profession in the legislative process. This requires a lot of time and travel for volunteers and the Section does not have the resources to fund this effort. The legislature has also made it nearly impossible for volunteer lobbying efforts to be effective due to paperwork requirements. Our section has retained a lobbyist to act on behalf of Illinois geologists, we have received generous financial support from companies and individuals, but we require continuous support to maintain this benefit to our membership.

It is requested that you make cash donations to AIPG, Illinois-Indiana Section for the purposes of lobbying on behalf of Illinois Professional Geologists. This call for financial support should be heard and heeded by all Illinois Professional Geologists and not just AIPG members. The amount of support received will define how we can ensure the future for Professional Geologists in Illinois.

Please remit checks of support to:

AIPG IL-IN Section (payable to)
AIPG Treasurer c/o Jeff Groncki
1063 Markus Ct.
Lake Zurich, IL 60047

TREASURER'S REPORT

RAMONA CORNEA, TREASURER - CPG 8983

INCOME	US DOLLARS
Bank Account, beginning balance	$13,585
AIPG Headquarters Contribution	$3,150
Field Trip Revenue	$483
Income from 2015 Workshop	$1,629
Donations (Vendor and Cash Donations)	$1,910
Total In	**20.756.87**

EXPENSES	US DOLLARS
Hall Rental, Speaker Expenses, Catering and Printing for Meetings	$3,371
Lobbying - Illinois Geologist Licensing Act	$5,000
2015 AIPG National Meeting Contribution & Expenses	$1,039
Student TPG 2015/2016	$194
Mailer Outreach to Illinois PGs	$216
Miscellaneous	$0
Total Expenses	**$9,821**
Balance, March 1, 2016	**$10,936**

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The Illinois Chapter of the Illinois-Indiana Section of the AIPG was established in October 1999 to serve as an advocacy group for all professional geologists in the state, and specifically for Licensed Professional Geologists and their practice in the State of Illinois.